federal register

Thursday
December 29, 1994

Part II

Department of Transportation

Research and Special Programs Administration

49 CFR Part 171, et al.

Implementation of the United Nations Recommendations, International Maritime Dangerous Goods Code, and International Civil Aviation Organization's Technical Instructions; Final Rule

HM-215A

DEPARTMENT OF TRANSPORTATION

Research and Special Programs Administration

49 CFR Parts 171, 172, 173, 175, 176, 177, 178

[Docket No. HM-215A, Amdt Nos. 171-131, 172-139, 173-241, 175-52, 176-36, 177-84, 178-106]

RIN 2137-AC42

Implementation of the United Nations Recommendations, International Maritime Dangerous Goods Code, and International Civil Aviation Organization's Technical Instructions

AGENCY: Research and Special Programs Administration (RSPA), DOT.

ACTION: Final rule

SUMMARY: This final rule amends the Hazardous Materials Regulations to maintain alignment with corresponding provisions of international standards. Because of recent changes to the International Maritime Dangerous Goods Code (IMDG Code), the International Civil Aviation Organization's Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Technical Instructions), and the United Nations Recommendations on the Transport of Dangerous Goods (UN Recommendations), these revisions are necessary to facilitate the transport of hazardous materials in international commerce.

DATES: *Effective.* October 1, 1995.

Compliance date: Compliance with the regulations, as amended herein, is authorized as of January 1, 1995.

Incorporation by reference: The incorporation by reference of certain publications listed in these amendments has been approved by the Director of the Federal Register as of October 1, 1995.

FOR FURTHER INFORMATION CONTACT: Bob Richard, Assistant International Standards Coordinator, telephone (202) 366-0586, Beth Romp or John Gale, Office of Hazardous Materials Standards, telephone (202) 366-8553, Hazardous Materials Safety, Research and Special Programs Administration, U.S. Department of Transportation, 400 Seventh Street, SW., Washington, DC 20590-0001.

SUPPLEMENTARY INFORMATION:

I. Background

On December 21, 1990, the Research and Special Programs Administration (RSPA) published a final rule (Docket HM-181; 55 FR 52402) which comprehensively revised the Hazardous Materials Regulations (HMR), 49 CFR Parts 171 to 180, with respect to hazard communication, classification, and packaging requirements, based on the UN Recommendations. One intended effect of the rule was to facilitate the international transportation of hazardous materials by ensuring a basic consistency between the HMR and international regulations.

The UN Recommendations are not regulations, but are recommendations issued by the UN Committee of Experts on the Transport of Dangerous Goods. These recommendations are amended and updated biennially by the Committee of Experts and are distributed to nations throughout the world. They serve as the basis for international modal regulations; specifically the IMDG Code, issued by the International Maritime Organization (IMO), and the ICAO Technical Instructions. In 49 CFR 171.12, the HMR authorize shipments prepared in accordance with the IMDG Code if all or part of the transportation is by vessel, subject to certain conditions and limitations. Offering, accepting and transporting hazardous materials by aircraft, in conformance with the ICAO Technical Instructions, and by motor vehicle either before or after being transported by aircraft, are authorized in § 171.11 (with certain exceptions).

On December 22, 1992, RSPA issued an interim final rule (Docket HM-215; 57 FR 60738) amending § 171.7 by incorporating the 1993-1994 edition of the ICAO Technical Instructions and Amendment 26 to the IMDG Code. This rulemaking action authorized the use of the updated international regulations, effective January 1, 1993. Amendment 26 promulgated numerous miscellaneous changes to the IMDG Code regarding classification, labeling, packaging, and documentation. The 1993-1994 edition of the ICAO Technical Instructions contained amendments relating to the seventh revised edition of the UN Recommendations, as well as changes specific to air transportation.

The HMR, as revised under Docket HM-181, are largely based on the sixth revised edition of the UN Recommendations. Selected provisions from the seventh and eighth revised editions of the UN Recommendations have been incorporated into the HMR under subsequent Docket HM-181 rulemaking actions.

On July 18, 1994, RSPA issued a Notice of Proposed Rulemaking (NPRM) (Docket HM-215A, 59 FR 36488), which proposed changes to more fully align the HMR with the seventh and eighth revised editions of the UN Recommendations. Such changes would provide consistency with the international air and sea transport requirements which, effective January 1, 1995, will be aligned with the eighth revised edition of the UN Recommendations.

II. Summary of Comments

RSPA received nearly 120 comments to the proposed rule from chemical manufacturers and distributors, carriers, model rocket users, and industry associations representing hazardous materials offerors, carriers, and packaging manufacturers and reconditioners. Commenters supported RSPA's effort to align the HMR with international standards to provide consistency and facilitate the international transportation of hazardous materials. Major issues identified by commenters included: (1) The purported need for a delay in the effective date of the final rule to allow an orderly transition from old to new requirements; (2) possible expansion of proposed provisions to allow reuse of certain UN standard packagings without leakproofness testing; (3) a request from model rocket users to clarify proposed packaging requirements for model rockets; (4) proposed removal of an exception for shipments transported within a port area; (5) reciprocal treatment of foreign-manufactured packagings; (6) proposed changes in criteria for corrosivity testing; and (7) proposed subsidiary labeling and terminology changes. A more detailed discussion of the comments and rulemaking actions in response to these comments is provided in the following summary.

III. Summary of Regulatory Changes by Section

Part 171

Section 171.7. Various standards, such as those issued by the International Organization for Standardization (ISO), the American Society for Testing and Materials (ASTM), and Transport Canada, are added or updated, and the most current versions of the ICAO Technical Instructions, the IMDG Code, and the UN Recommendations are incorporated.

Section 171.8. New definitions for "Asphyxiant gas," "Gas," "Oxidizing gas" and "Siftproof packaging" are added, and definitions for "Box," "Liquid," "Overpack," "Solid" and "UN standard packaging" are revised for consistency with the seventh and eighth revised editions of the UN Recommendations. Two commenters asked RSPA to delete the word "Small

in the proposed revision of the definition for "box". These commenters claimed that the term was ambiguous and could lead to differing interpretations by various enforcement agencies RSPA agrees and is replacing the wording "Small holes" with the phrase "Holes appropriate to the size and use of the packaging" One of the commenters further asked RSPA to clarify whether the openings in the box may be designed for uses other than for ease of handling or opening RSPA believes the wording "such as ease of handling or opening, or to meet classification requirements" proposed in the NPRM offers sufficient examples of uses for openings and, therefore, is not amending this text in the final rule. The definition for "UN standard packaging" is revised to clarify that it applies to both U S -manufactured and foreign-manufactured packagings and to delete reference to Subparts L and M of Part 178.

Section 171 11. Paragraph (d)(5) is adopted as proposed to include the word "toxic" as an appropriate reference to a poison

Section 171 12. Paragraph (b) is revised as proposed. RSPA is amending §§ 171.12(b) and 176.27(c) to reference IMDG Code requirements for a container packing certification for freight containers and transport units intended for carriage by vessel This requirement applies to persons who load hazardous materials for transportation (including freight forwarders, freight consolidators and non-vessel operating common carriers) or transport hazardous materials by vessel. A freight container packing certification requirement was adopted several years ago under Amendment 24 to the IMDG Code and became effective worldwide on January 1, 1994, as mandated under the International Convention on Safety of Life at Sea (SOLAS Convention) When hazardous materials are packed into a freight container or transport vehicle for transportation by vessel, those responsible for packing the unit must provide a certificate or declaration to the carrier attesting that the container is suitable for transport, that it contains compatible materials in packages that have been properly inspected, packed, and secured, and the container and packages are properly marked, labeled, and placarded This certification may appear either in a separate document or in a signed statement provided on the dangerous goods shipping document Because the U S is a signatory to the SOLAS Convention, RSPA is adopting a similar container packing certification requirement under the HMR

In the NPRM, RSPA proposed removal of wording in paragraph (c) which allows hazardous materials being imported into or exported from the U S. to comply with IMDG Code regulations in port areas Commenters responding to this proposal opposed the removal of this wording, they claimed that a requirement for hazardous materials being imported into or exported from the U.S. to comply with the HMR in a port area would impose an economic burden on the industry and would be a barrier to trade. Paragraph (c) is not being revised in this final rule. RSPA plans to address the port area issue in greater detail in a future rulemaking proceeding

Section 171 14 This section is revised to provide a delayed implementation date for amendments adopted in this final rule RSPA also is removing obsolete transition dates provided under the Docket HM-181 final rule and its subsequent revisions. A new paragraph (a) contains all remaining transition provisions for implementing changes adopted under the Docket HM-181 final rules.

The effective date of this final rule is October 1, 1995. However, RSPA is authorizing a voluntary compliance date of January 1, 1995, which is consistent with the effective date of new requirements for international air and vessel shipments and will allow shippers to prepare their international shipments in accordance with the new ICAO, IMDG, and HMR provisions. RSPA also is authorizing, in new paragraph (b), a delay in mandatory compliance with the new requirements, until October 1, 1996. RSPA believes that an effective date of October 1, 1995, with an additional one-year delay until October 1, 1996, offers a sufficient phase-in period to implement new provisions and deplete current stocks of shipping papers, labels and placards, and containers affected by the new requirements. The October 1, 1996 implementation date also is consistent with certain Docket HM-181 transition provisions for maintenance and use of packagings. In addition, paragraph (b)(2) permits intermixing of old and new hazard communication requirements and reflects certain intermixing provisions authorized by the Docket HM-181 final rule

Part 172

Sections 172 101 and 172 102 RSPA is revising the Hazardous Materials Table (HMT) and the list of special provisions in § 172 102 for basic conformance with the eighth revised edition of the UN Recommendations, the ICAO Technical Instructions (1995-1996 edition) and the 27th edition of the IMDG Code.

The IM tank authorizations are revised for consistency with the changes in Chapter 12 of the seventh and eighth revised editions of the UN Recommendations These changes can be found in the "T-note" authorizations that are listed in Column 7 of the HMT.

The aircraft quantity limitations in Column 9 and the vessel stowage requirements in Column 10 are revised for consistency with the ICAO Technical Instructions and IMDG Code, respectively. In § 172 101(k)(1)-(k)(5), revised definitions of the vessel stowage codes, which are prescribed in the § 172.101 Table, are adopted as proposed for consistency with the IMDG Code. This revision broadens current stowage provisions for hazardous materials on cargo vessels to apply to hazardous materials (such as propane) on passenger vessels carrying a limited number of passengers. RSPA received two comments supporting this proposed change

Changes to the HMT are quite extensive—approximately 33% of the entries in the HMT are changed. Therefore, RSPA is republishing the entire HMT in this final rule, but does not believe it is necessary to discuss every change in this section review However, in order to facilitate the reader's understanding of the changes to the HMT, RSPA is providing a list of all entries that are added, deleted, or made more restrictive. This list includes all changes in (1) the shipping name, (2) IM tank authorization, (3) subsidiary labeling, (4) classification, and (5) packaging. In addition, a discussion of the more substantive changes is provided

Numerous editorial changes are made to the HMT to correct misspellings and errors and to provide more consistency A corrected typographical error is not shown in the list of significant changes In addition, new generic entries are added for self-heating liquids and solids Specific entries for self-reactive materials are removed from the HMT and replaced with new generic entries

As discussed in the NPRM, the UN Recommendations, ICAO Technical Instructions, and IMDG Code have replaced the term "poisonous" with the term "toxic." RSPA proposed to amend proper shipping names in the HMT that contain the word "poisonous" by replacing "poisonous" with the word "toxic" to conform to international terminology For example, the proper shipping name "Flammable liquid, poisonous, n o s " would read "Flammable liquid, toxic, n o s " However, RSPA also proposed to revise

§ 172.101(c)(3) to allow the use of the word "poisonous" interchangeably with the word "toxic" Numerous commenters provided diverse opinions on this proposal Highway carriers and the American Trucking Associations (ATA) believed that emergency responders would be at greater risk because the word "toxic" is overused and minimizes the seriousness of the poison hazard. They recommended reinstating "Poison" or "Poisonous" entries for domestic transportation. Another commenter thought that the option to use either term would force emergency response personnel and end users to deal with situations involving the same product bearing different labels or placards, depending on shipper preference On the other hand, chemical manufacturers and their associations, such as the Chemical Manufacturers Association (CMA), supported the proposal to allow interchangeable use of either term. Other commenters, such as the Hazardous Materials Advisory Council (HMAC) agreed with interchangeable use, but only for as long as required to deplete stocks of preprinted materials and conduct training. RSPA believes the interchangeable use of "poison" and "toxic" for domestic transportation will provide flexibility and, therefore, is adopting as proposed the provision to permit use of either term.

The eighth revised edition of the UN Recommendations added entries and assigned new UN I.D numbers for elevated temperature materials RSPA is changing the I D. numbers for elevated temperature materials in the HMT to correspond with those in the UN Recommendations RSPA received comments requesting that RSPA not adopt the proposed identification numbers for elevated temperature materials. The commenters noted that the old identification numbers have only been required since October 1, 1993, and that switching them after only one year will cause confusion and non-compliance Another commenter requested an extended transition period for the change in identification numbers for elevated temperature materials in order to dispose of large supplies of markings. With the extended transition period being provided in this final rule, RSPA believes that any confusion related to the change of identification numbers will be minimal. Therefore, RSPA is not accepting commenters' requests and has adopted the shipping descriptions for elevated temperature materials as proposed In addition, RSPA is revising the HOT mark illustrated in § 172 325(c) to reflect the new UN identification number assigned to "Elevated temperature material, liquid, n o s."

Currently under the HMR, air bags are assigned to the Division 4 1 hazard class and the proper shipping name is limited to "Air bag inflators" or "Air bag modules " Based on changes in the UN Recommendations, RSPA is revising the proper shipping name for air bags to include seat belt pre-tensioners and modules. The new proper shipping name is "Air bag inflators *or* Air bag modules *or* Seat-belt modules *or* Seat-belt pre-tensioners." This entry also reflects a change in classification from Division 4.1 to Class 9, adoption of a new UN number, and removal of the "D" in Column 1.

Two new domestic entries are added for "toy caps" and "model rocket motors". Model rocket motors containing 30 grams or less propellant are classed as Division 1.4S while items containing more than 30 grams but not more than 62.5 grams of propellant are classed as Division 1.4C. RSPA received numerous comments requesting a different packing method for these materials. The commenters requested packing method E-146(b) instead of packing method E-114 for these materials. RSPA has not adopted this request to allow the use of packing method E-146 for these materials, but has modified packing method E-114 to allow plastic bags as inner packagings.

Two new entries for "Batteries, containing sodium" and "Cells, containing sodium" are added in the HMT based on the UN Recommendations entry (UN 3292). Since these materials were previously authorized only under the terms of an exemption or competent authority approval, RSPA is adding a new packaging section, § 173.189, that prescribes general packaging and transport requirements for these materials consistent with the UN Recommendations.

Currently, in Column 1, a "+" is assigned to certain materials meeting the criteria of Division 6.1, Packing Group I, toxic by inhalation, but classed in another hazard class The eighth revised edition of the UN Recommendations incorporated revisions to the hazard classification of these materials to Division 6.1, Packing Group I, toxic by inhalation. Therefore, the "+" is removed from Column 1 for any liquid poison by inhalation (PIH) material newly classed in Division 6.1, Packing Group I.

The shipping name "acetonitrile" replaces the name "methyl cyanide." The hazard class for "Formaldehyde solutions" currently shown as Class 9 is revised to Class 8 Numerous generic pesticide entries are revised to remove the "n o s " from the shipping names

Revised generic shipping descriptions for Division 4 3 materials are prefaced by the words "water-reactive" in lieu of the words "substances which in contact with water emit". The prefix of the identification number for "Polyester resin kits" is changed to "UN" from "NA" and Special Provision 40 is added in Column 7 that specifies contents and packaging requirements for polyester resin kits. In addition, Special Provision 117 is removed from the entry corresponding to "UN0150."

The entry for alcoholic beverages is revised in Column 7 to include Special Provision 24, to indicate that alcoholic beverages with more than 70 percent alcohol by volume are assigned Packing Group II and alcoholic beverages containing more than 24 percent but not more than 70 percent alcohol are assigned Packing Group III In addition, § 173.150 is revised to increase (to five liters per inner packaging) the quantity of alcoholic beverage in a packaging excepted from the HMR and to provide an exception adopted in the UN Recommendations to permit Packing Group III alcoholic beverages transported in receptacles of 250 L (66 gallons) or less to be excepted from the HMR unless transported by air. One commenter requested that the shipping name "ethanol" also include Special Provision 24 because distilled spirits can be shipped under either "alcoholic beverages" or "ethanol". RSPA is not accepting this request. As the commenter noted, the addition of Special Provision 24 is simply a procedural modification of the existing classification procedure for alcoholic beverages. RSPA considers this commenter's request outside the scope of this rulemaking.

RSPA received a comment requesting that the shipping name "polystyrene beads expandable evolving flammable vapors", be retained for domestic transportation. The commenter noted that the name had only been required since October 1, 1993, and that it is not cost-efficient to change in such a short period of time RSPA is not accepting this request but believes that the lengthy transition period should offset any additional cost that may be incurred by the shipper

Several comments were received that objected to the proposal to remove from the HMT the entry "Propellant explosive, solid, NA0274, 1.3C". These commenters requested that this entry be retained because it allowed them to ship these 1 3C explosives by cargo only aircraft RSPA is not adopting this

suggestion and is removing this entry from the HMT. RSPA believes that there is not sufficient justification to create a domestic exception for Division 1 3 substances or to allow these explosive substances to be transported by cargo only aircraft when no other Division 1 3 substance is allowed to be transported by aircraft.

Several comments were received regarding the shipping name "azodicarbonamide", a self-reactive material. Commenters believed that listing this material was "superfluous" considering the new classification scheme for self-reactive materials. RSPA concurs and has removed this entry from the HMR.

One commenter requested several editorial changes to the shipping name "Jet perforating guns, charged, without detonator", which are adopted in this final rule. However, one suggestion, to remove the words "without detonator" from the shipping description, is not adopted. The commenter stated that packing method US006 allows detonators to be transported in jet perforating guns; therefore, the words "without detonator" should be removed from the shipping name. However, US006 only allows detonators to be transported with, not in, jet perforating guns.

RSPA received comments disagreeing with the removal of the shipping name "Petroleum oil". Commenters stated that the name was important for compliance with the Oil Pollution Act requirements in 49 CFR Part 130, and requested that a domestic shipping description be added. RSPA concurs and is retaining the proper shipping name "Petroleum oil" with an identification number "NA1270".

One commenter suggested that RSPA provide a non-bulk packaging exception for "Resin solution" comparable to the exception provided for paint under § 173 173 of the HMR. The commenter claimed that an exception from the performance packaging requirements is provided for certain resin solutions under the UN Recommendations and the IMDG Code. The commenter stated that U S companies need the exception for Resin solutions to compete in the international marketplace. RSPA agrees with the commenter's suggestion and is adding in the § 172.101 Table for the entry "Resin solution", in Column 8A, § 173.173". RSPA also is amending the section heading and the introductory text of paragraph (b) of § 173.173 to include resins.

In the notice, RSPA proposed to add several generic proper shipping names including the words, "organic", "inorganic", "acid", or "base" In addition, RSPA proposed new identification numbers for generic shipping descriptions for liquefied gases RSPA received several comments on these proposals. Many of the commenters were opposed to these new terms claiming that the information would not provide any additional information to emergency responders and would be very costly to implement. If adopted, commenters requested that RSPA provide guidance on the definition of these terms. One commenter suggested that ASTM Test Methods D–664 and D–2896 should be used to determine if a material is an acid or a base. Comments were received that supported the use of these terms, and RSPA received numerous comments supporting international harmonization of transportation regulations.

RSPA understands the concerns expressed by those commenters that terms such as "inorganic" and "organic" provide little useful information to emergency responders. However, RSPA believes that more harm and confusion would be caused by adopting different shipping names for domestic and international transportation for these numerous generic shipping descriptions than would be caused if these shipping names were adopted. Therefore, RSPA is adopting, as proposed, and without domestic exceptions, the generic shipping descriptions bearing the words "inorganic", "organic", "acid", and/or "base" and the new identification number for liquefied gases. In addition, the extended transition period being provided in this final rule will give industry adequate time to revise their shipping papers and package markings. The following provides some general guidance on the definition of these terms.

For acids and bases, RSPA believes that the ASTM methods referenced by commenters would be an acceptable method for determining if a material is an acid or base. However, RSPA is not requiring persons to use those methods. For an aqueous solution, the use of pH and litmus paper is an acceptable method for determining if a material is an acid or base. For a non-aqueous solution, shippers must use their knowledge of the constituents of the material and make a determination as to whether a material is an acid or base. For a material that is neither an acid nor a base, the correct shipping name will be "Corrosive liquid, n.o.s.". The definition of an "organic" is a compound with carbon atoms bonded to other carbon, nitrogen or hydrogen atoms (e g , amines, acid chlorides, acetic acids, phenols). An "inorganic" is any pure element or any compound that does not have carbon atoms bonded to other carbon, nitrogen or hydrogen atoms (e.g , sodium hydroxide, sulfuric acid) Shippers must make a determination, based on the constituents of their material, if their material is inorganic or organic.

In the NPRM, RSPA proposed to add three new proper shipping names to the HMT for samples of non-pressurized gases in Divisions 2.1 and 2.3. In response to the NPRM, one commenter urged RSPA to remove the proposed entries for gas samples in the HMT. The commenter claimed that non-pressurized flammable gases are not subject to the HMR and that including gas samples under the HMR would increase shipping costs and delay shipments. The commenter also recommended that RSPA adopt criteria in § 173.115 to limit the definition of Division 2.1 to gases which exert a pressure of 280 kPa (41 psia) or greater at 20 °C (68 °F). Alternatively, the commenter recommended that RSPA add a packaging exception for gas samples in quantities less than two liters in each receptacle and remove proposed Special Provision 35 and the non-bulk packaging references to §§ 173.302 and 173 304 for the gas sample entries in the HMT.

RSPA disagrees with the commenter s recommendation to remove the entries for gas samples because these materials are currently regulated under the HMR. The commenter's understanding of Division 2.1 criteria is incorrect. Non-pressurized gas samples are presently subject to the HMR if they meet the hazard class criteria in § 173.115. Division 2.1 or 2.3 materials are not limited to gases which exert a pressure of at least 280 kPa (41 psi) at 20 °C (68 °F). RSPA simply is providing more descriptive proper shipping names for non-pressurized gas samples Therefore, RSPA is adopting the gas sample entries as proposed. In addition, RSPA is retaining the non-bulk packaging references in the Table for persons who want to ship larger quantities of gas samples However, RSPA agrees with the commenter concerning the need to address gas samples in the exceptions and is removing proposed Special Provision 35 and revising the provisions in § 173.306 to specifically address gas samples

One commenter submitted data indicating that "Diphenylmethane-4,4'diisocyanate" does not meet Division 6.1, Packing Group III criteria under the HMR. Another commenter verified that "2-Bromo-2-nitropropane-1,3-diol" does not meet the criteria for

Division 6.1 under the HMR. The commenter requested that RSPA add an "I" in the first column of the § 172 101 Table for the entry "2-Bromo-2-nitropropane-1,3-diol" to distinguish it from a domestically regulated hazardous material RSPA agrees that these materials are not hazardous materials in domestic transportation. However, to facilitate international transportation, RSPA is retaining the entries for Diphenylmethane-4,4'diisocyanate and 2-Bromo-2-nitropropane-1,3-diol and adding an "I" in the first column to indicate that these materials are regulated in international transportation

One commenter requested that RSPA remove the poison inhalation hazard (PIH) designation for "Allyl isothiocyanate, stabilized" because the material does not meet the PIH criteria in § 173 133. Based on supporting data submitted by the commenter, RSPA agrees with the assessment and is removing the PIH designation for Allyl isothiocyanate, stabilized, in the HMT.

RSPA received one comment regarding the hazard zone designation for "Allyl chloroformate." The commenter provided information which indicates that the hazard zone for allyl chloroformate should be Zone B and not Zone A RSPA agrees that the hazard zone designation for allyl chloroformate should be "Zone B" and is amending the hazard zone designation for this material rather than issuing an approval under § 172.101(l)(2). In addition, data provided by a commenter indicates that the hazard zone for trichloroacetyl chloride is Zone B, not Zone A, as previously indicated on the HMT. Therefore, RSPA is modifying this shipping description to indicate that trichloroacetyl chloride is a Hazard Zone B PIH material.

One commenter objected to RSPA's proposal to add a proper shipping name for "Pentachlorophenols" classed as Division 6 1, Packing Group II when an existing entry "Chlorophenols, solid" carries a Division 6.1, Packing Group III classification The commenter contended that the "Keep Away From Food" label adequately conveys the nature of hazard posed by these materials RSPA added "Pentachlorophenols" in the HMT and designated it as Division 6 1, PG II based on the UN Recommendations. However, according to § 172.101(c)(12), if it has been determined that a material meets the definition of a hazard class, packing group, or hazard zone other than the class, packing group, or hazard zone shown in association with the proper shipping name, another shipping description shall be selected that appropriately describes the material. Therefore, RSPA is adding the entry for Pentachlorophenols as proposed.

RSPA received several comments requesting that Maneb and Maneb preparations that do not meet the definition of any hazard class, be excepted from the HMR when transported by motor vehicle, rail car, or aircraft. Commenters noted that Special Provision 140 of the UN Recommendations allows the competent authority to deregulate Maneb In addition, the commenters noted that exemption DOT E-11037 allows this material to be shipped unregulated. RSPA concurs and has added Special Provision 53 to Maneb (UN2968) which states that Maneb not meeting the definition of Division 4.3 or any other hazard class is not subject to the HMR when transported by aircraft, motor vehicle, or rail car.

RSPA received a comment requesting that it add the shipping description "Dangerous goods in apparatus/machinery" to the HMT. The commenter stated that this shipping name, which is listed in the ICAO Technical Instructions but not the UN Recommendations, is very sensible and will be beneficial to both shippers and carriers alike. RSPA agrees that this name would be beneficial to the industry but believes that the packaging provision, for both air and ground transport, should be subject to appropriate public notice and comment. Therefore, RSPA is not adopting, in this rule, this commenter's suggestion to add the shipping name "Dangerous goods in apparatus/machinery" to the HMT. However, shipments described and prepared in accordance with the ICAO Technical Instructions and § 171.11 may be transported domestically by aircraft and by motor vehicle either before or after being transported by aircraft.

One commenter suggested that RSPA incorporate an IM tank authorization into the HMR for 2-Ethyhexyl-chloroformate equivalent to the tank authorization under the IMDG Code and under an approval (SA-9407006) issued by OHMS. RSPA is adding Special Provision T12 in Column 7 of the HMT for 2-Ethyhexylchloroformate which eliminates the need for an approval.

In the NPRM, RSPA proposed to add subsidiary labeling requirements for Class 2 materials. As a result, subsidiary labels were added in Column 6 of the HMT for Class 2 materials, including Chlorine, meeting more than one hazard class RSPA proposed to add Corrosive and Oxidizer subsidiary labels for Chlorine One commenter contended that the yellow Oxidizer label is more visible than the black and white Poison gas label and may cause confusion in determining the primary hazard RSPA has determined that the Corrosive subsidiary label is necessary because the material's effects on skin tissue, however, RSPA is removing the Oxidizer subsidiary label for Chlorine because it is unnecessary

One commenter objected to the proposal to change the order of the descriptive words in the basic shipping description to coincide with the precedence of hazards The commenter cited limited safety benefit and high costs as reasons not to adopt the proposed changes. Though RSPA agrees that these changes have limited safety benefit, RSPA believes that adoption of a domestic-only name for these descriptions is not justified In addition, most of the costs the commenter cited should be ameliorated by the lengthy transition period being provided.

RSPA proposed to add new entries for solid materials containing flammable, corrosive, or toxic liquids in the NPRM One commenter requested clarification on whether these new entries included solid materials that were previously not regulated. The commenter stated that RSPA's intent was not adequately clarified in the special provisions designated for the materials Another commenter requested clarification of the phrase "packaging must correspond to design type that has passed a leakproof test at the Packing Group II level" in Special Provisions 47, 48, and 49.

RSPA is adding the entries for solid materials containing flammable, corrosive, or toxic liquids in this rule to provide shippers with additional generic entries to describe solids that contain liquids that are either flammable, corrosive, or toxic (e g , soil contaminated with toxic material from an underground storage tank) and have not been tested to verify the hazard class However, if free liquid is present at the time the material is loaded, these shipping descriptions may not be used The new entries are not intended to regulate non-hazardous materials (i e , those materials that do not meet any hazard class definition) The phrase regarding the leakproof test is intended to have these materials transported in a packaging whose "design type" has been leakproof tested Therefore, only the design, not every packaging, need be subjected to the leakproof test

One commenter objected to RSPA's proposed amendment to require a CORROSIVE subsidiary label in addition to a POISON GAS primary label on packages containing dry sulfur dioxide The commenter stated that the material is not corrosive to carbon or stainless steel, and the commenter

expressed concern that addition of a CORROSIVE label will require more frequent cargo tank inspections under § 180.407.

In the context of § 180 407, corrosive lading means that a material has a corrosive effect on a cargo tank. It is the shipper's responsibility to determine whether a material is corrosive to the material of construction of a cargo tank. Because of the corrosive effects dry sulfur dioxide has on skin tissue, RSPA is adopting the Class 8 subsidiary label as proposed.

RSPA received several comments requesting new bulk packagings for chlorosulfonic acid, dimethyl sulfate, and titanium tetrachloride. RSPA is not accepting these comments because they are beyond the scope of this rulemaking

RSPA is making several changes to the IBC authorizations in the HMT based on petitions for reconsideration received to Docket HM-181E RSPA will handle all other petitions received to Docket HM-181E in a future Federal Register publication. The following materials will be allowed, through a revised Special Provision B110, to be transported in IBCs authorized in § 173.242(d) UN2030, UN2014, U3149, UN2078, UN1790, UN2076, UN2022. In addition, Special Provision B100, which does not allow the use of IBCs, is removed from "Chloropicrin mixtures, n o.s, 6.1, UN1583, Packing Group III".

Special Provision B53 also is revised to indicate that it does not apply to IBCs

The following tables identify those entries that are: (1) Deleted, (2) significantly changed; or (3) added. An entry is considered significantly changed if there is a change in (1) the shipping name, (2) IM tank authorization, (3) subsidiary labeling, (4) classification, or (5) packaging. Each entry is identified by its identification number which, along with the cross-reference table appearing in the HMR prior to the HMT, can be used to identify the affected entries. Unless otherwise indicated, the identification numbers are "UN" numbers

LIST OF ENTRIES DELETED FROM THE § 172.101 TABLE

NA1086	0416	**1270	1705	2497	3030–3043
NA2255*					
NA2810*	1118	1271	1864	2553	NA9259*
NA2811*	1255	1584	2207	2860	NA9276*
0273	1256	1592	2229	2951–2955	
0274	1257	1703	2449	2970–2973	

*See new entry added by the UN recommendations.
**See new NA number (NA1270).

LIST OF ENTRIES SIGNIFICANTLY CHANGED

NA1760	1322	1474	1731	2006	2379	2534	2818
NA1986	1325	1475	1740	2022	2382	2557	2821
NA2922	1328	1477	1747	2029–2030	2383	2564	2823
1030							
1106	1334	1481	1750	2047	2385	2571	2826
1125	1336	1482	1751	2051	2389	2583	2834
1135	1337	1483	1752	2078	2399	2584	2837
1143	1344	1489	1755	2189	2401	2585	2841
1154	1348	1502	1757	2194	2407	2586	2845
1158	1349	1506	1761	2195	2417	2604	2846
1160	1350	1508	1773	2196	2418	2606	2857
1162	1353	1511	1783	2198	2420	2610	2869
1167	1354	1517	1787	2206	2421	2618	2874
1198	1355	1549	1788	2209	2427	2619	2881
1202	1356	1564	1789	2211	2428	2626	2904–2905
1210	1357	1566	1809	2218	2429	2670	2921–2930
1214	1361	1570	1811	2219	2430	2677	2938
1221	1364	1588	1814	2232	2438	2679	2945–2946
1228	1373	1589	1816	2242	2445	2681	2965
1235	1378	1590	1819	2251	2461	2684	2985–2988
1265	1395	1599	1824	2257	2478	2693	2991–3021
1268	1402	1601	1888	2258	2482	2733	3024–3027
1274	1408	1602	1908	2260	2484	2734	3049–3050
1277	1409	1605	1922	2264	2485	2735	3065–3066
1282	1415	1613	1952	2267	2495	2741	3071
1289	1418	1614	1953	2270	2501	2742	3079
1296	1420	1648	1954	2276	2502	2757–2787	3084
1297	1428	1660	1955	2332	2517	2789	3086–3088
1298	1454	1708	1956	2337	2521	2796	3094
1308	1455	1715	1975	2343	2526	2801	3098
1310	1458	1719	1986	2351	2529	2810	3098–3100
1320	1459	1722	1988	2359	2530	2813	3119–3150
1321	1462	1724	1992	2361	2533	2817	1717

LIST OF ADDITIONS TO THE § 172.101 TABLE

UN #	Shipping name
0491	CHARGES, PROPELLING
0492	SIGNALS, RAILWAY TRACK, EXPLOSIVE.
0493	SIGNALS, RAILWAY TRACK, EXPLOSIVE.
0494	JET PERFORATING GUNS, CHARGED, oil well, without detonator
0495	PROPELLANT, LIQUID.
0496	OCTONAL.
0497	PROPELLANT, LIQUID.
0498	PROPELLANT, SOLID.
0499	PROPELLANT, SOLID.
1851	MEDICINE, LIQUID, TOXIC, N O S.
1990	BENZALDEHYDE.
3155	PENTACHLOROPHENOL.
3156	COMPRESSED GAS, OXIDIZING, N.O.S.
3157	LIQUEFIED GAS, OXIDIZING, N.O.S.
3158	GAS, REFRIGERATED LIQUID, N.O.S.
3159	1,1,1,2–TETRAFLUOROETHANE.
3160	LIQUEFIED GAS, TOXIC, FLAMMABLE, N.O.S.
3161	LIQUEFIED GAS, FLAMMABLE, N.O.S.
3162	LIQUEFIED GAS, TOXIC, N.O S.
3163	LIQUEFIED GAS, N.O.S.
3164	ARTICLES, PRESSURIZED PNEUMATIC or HYDRAULIC (containing non-flammable gas).
3166	ENGINES, INTERNAL COMBUSTION, including when fitted in machinery or vehicles.
3167	GAS SAMPLE, NON-PRESSURIZED, FLAMMABLE, N.O S., not refrigerated liquid
3168	GAS SAMPLE, NON-PRESSURIZED, TOXIC, FLAMMABLE, N.O.S , not refrigerated liquid.
3169	GAS SAMPLE, NON-PRESSURIZED, TOXIC, N.O.S., not refrigerated liquid
3170	ALUMINIUM PROCESSING BY-PRODUCTS.
3171	BATTERY-POWERED VEHICLE or BATTERY-POWERED EQUIPMENT (wet battery).
3174	TITANIUM DISULPHIDE.
3175	SOLIDS CONTAINING FLAMMABLE LIQUID, N.O.S.
3176	FLAMMABLE SOLID, ORGANIC, MOLTEN, N.O.S.
3178	FLAMMABLE SOLID, INORGANIC, N O S.
3179	FLAMMABLE SOLID, TOXIC, INORGANIC, N O.S
3180	FLAMMABLE SOLID, CORROSIVE, INORGANIC, N O S.
3181	METAL SALTS OF ORGANIC COMPOUNDS, FLAMMABLE, N O.S
3182	METAL HYDRIDES, FLAMMABLE, N.O S.
3183	SELF-HEATING LIQUID, ORGANIC, N O.S
3184	SELF-HEATING LIQUID, TOXIC, ORGANIC, N.O S.
3185	SELF-HEATING LIQUID, CORROSIVE, ORGANIC, N O S

LIST OF ADDITIONS TO THE § 172.101 TABLE—Continued

UN #	Shipping name
3186	SELF-HEATING LIQUID, INORGANIC, N O.S.
3187	SELF-HEATING LIQUID, TOXIC, INORGANIC, N.O.S.
3188	SELF-HEATING LIQUID, CORROSIVE, INORGANIC, N.O.S
3189	METAL POWDER, SELF-HEATING, N O.S.
3190	SELF-HEATING SOLID, INORGANIC, N O.S.
3191	SELF-HEATING SOLID, TOXIC, INORGANIC, N.O S.
3192	SELF-HEATING SOLID, CORROSIVE, INORGANIC, N O.S.
3194	PYROPHORIC LIQUID, INORGANIC, N O S.
3200	PYROPHORIC SOLID, INORGANIC, N.O S.
3203	PYROPHORIC ORGANOMETALLIC COMPOUND, N.O.S.
3205	ALKALINE EARTH METAL ALCOHOLATES, N.O.S.
3206	ALKALI METAL ALCOHOLATES, SELF-HEATING, CORROSIVE, N O S.
3207	ORGANOMETALLIC COMPOUND or COMPOUND SOLUTION or COMPOUND DISPERSION, WATER-REACTIVE, FLAMMABLE, N.O.S.
3208	METALLIC SUBSTANCE, WATER-REACTIVE, N.O.S.
3209	METALLIC SUBSTANCE, WATER-REACTIVE, SELF-HEATING, N O S.
3210	CHLORATES, INORGANIC, AQUEOUS SOLUTION, N.O.S
3211	PERCHLORATES, INORGANIC, AQUEOUS SOLUTION, N O S.
3212	HYPOCHLORITES, INORGANIC, N O.S.
3213	BROMATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.
3214	PERMANGANATES, INORGANIC, AQUEOUS SOLUTION, N O.S.
3215	PERSULPHATES, INORGANIC, N.O.S.
3216	PERSULPHATES, INORGANIC, AQUEOUS SOLUTION, N O S
3217	PERCARBONATES, INORGANIC, N O.S.
3218	NITRATES, INORGANIC, AQUEOUS SOLUTION, N O.S.
3219	NITRITES, INORGANIC, AQUEOUS SOLUTION, N O S.
3220	PENTAFLUOROETHANE.
3221	SELF-REACTIVE LIQUID TYPE B
3222	SELF-REACTIVE SOLID TYPE B
3223	SELF-REACTIVE LIQUID TYPE C.
3224	SELF-REACTIVE SOLID TYPE C
3225	SELF-REACTIVE LIQUID TYPE D
3226	SELF-REACTIVE SOLID TYPE D.
3227	SELF-REACTIVE LIQUID TYPE E.
3228	SELF-REACTIVE SOLID TYPE E
3229	SELF-REACTIVE LIQUID TYPE F
3230	SELF-REACTIVE SOLID TYPE F
3231	SELF-REACTIVE LIQUID TYPE B, TEMPERATURE CONTROLLED.
3232	SELF-REACTIVE SOLID TYPE B, TEMPERATURE CONTROLLED.
3233	SELF-REACTIVE LIQUID TYPE C, TEMPERATURE CONTROLLED.

LIST OF ADDITIONS TO THE § 172.101 TABLE—Continued

UN #	Shipping name
3234	SELF-REACTIVE SOLID TYPE C, TEMPERATURE CONTROLLED
3235	SELF-REACTIVE LIQUID TYPE D, TEMPERATURE CONTROLLED.
3236	SELF-REACTIVE SOLID TYPE D, TEMPERATURE CONTROLLED.
3237	SELF-REACTIVE LIQUID TYPE E, TEMPERATURE CONTROLLED.
3238	SELF-REACTIVE SOLID TYPE E, TEMPERATURE CONTROLLED
3239	SELF-REACTIVE LIQUID TYPE F, TEMPERATURE CONTROLLED.
3240	SELF-REACTIVE SOLID TYPE F, TEMPERATURE CONTROLLED.
3241	2–BROMO–2–NITROPROPANE–1,3–DIOL.
3242	AZODICARBONAMIDE.
3243	SOLIDS CONTAINING TOXIC LIQUID, N O.S.
3244	SOLIDS CONTAINING CORROSIVE LIQUID, N O S.
3246	METHANESULPHONYL CHLORIDE.
3247	SODIUM PEROXOBORATE, ANHYDROUS.
3248	MEDICINE, LIQUID, FLAMMABLE, TOXIC, N O.S
3249	MEDICINE, SOLID, TOXIC, N O.S
3250	CHLOROACETIC ACID, MOLTEN.
3251	ISOSORBIDE–5–MONONITRATE.
3252	DIFLUOROMETHANE.
3253	DISODIUM TRIOXOSILICATE PENTAHYDRATE.
3254	TRIBUTYLPHOSPHANE.
3255	tert-BUTYL HYPOCHLORITE.
3256	ELEVATED TEMPERATURE LIQUID, N.O.S. with flash point above 37 8 °C, at or above its flash point.
3257	ELEVATED TEMPERATURE LIQUID, N O S., at or above 100 °C and below its flash point.
3258	ELEVATED TEMPERATURE SOLID, N.O S , at or above 240 °C
3259	AMINES, SOLID, CORROSIVE, N.O S. or POLYAMINES, SOLID, CORROSIVE, N O.S.
3260	CORROSIVE SOLID, ACIDIC, INORGANIC, N O.S.
3261	CORROSIVE, SOLID, ACIDIC, ORGANIC, N O S.
3262	CORROSIVE, SOLID, BASIC, INORGANIC, N O S.
3263	CORROSIVE, SOLID, BASIC, ORGANIC, N O S.
3264	CORROSIVE, LIQUID, ACIDIC, INORGANIC, N O.S
3265	CORROSIVE, LIQUID, ACIDIC, ORGANIC, N O S
3266	CORROSIVE, LIQUID, BASIC, INORGANIC, N O S.
3267	CORROSIVE, LIQUID, BASIC, ORGANIC, N O.S.
3268	AIR BAG INFLATORS or AIR BAG MODULES or SEAT-BELT PRETENSIONERS or SEAT-BELT MODULES
3269	POLYESTER RESIN KIT
3270	NITROCELLULOSE MEBRANE FILTERS.
3271	ETHERS, N O S.
3272	ESTERS, N O.S

LIST OF ADDITIONS TO THE § 172.101 TABLE—Continued

UN #	Shipping name
3273	NITRILES, FLAMMABLE, TOXIC, N O S
3274	ALCOHOLATES SOLUTION, N O S., in alcohol
3275	NITRILES, TOXIC, FLAMMABLE, N.O S
3276	NITRILES, TOXIC, N O.S.
3277	CHLOROFORMATES, TOXIC, CORROSIVE, N O S.
3278	ORGANOPHOSPHORUS COMPOUND, TOXIC N.O S
3279	ORGANOPHOSPHORUS COMPOUND, TOXIC, FLAMMABLE, N.O S.
3280	ORGANOARSENIC COMPOUND, N.O S.
3281	METAL CARBONYLS, N O.S.
3282	ORGANOMETALLIC COMPOUND, TOXIC N.O S
3283	SELENIUM COMPOUND, N O.S
3284	TELLURIUM COMPOUND, N.O.S.
3285	VANADIUM COMPOUND, N.O.S
3286	FLAMMABLE LIQUID, TOXIC, CORROSIVE, N O.S.
3287	TOXIC LIQUID, INORGANIC, N O S
3288	TOXIC SOLID, INORGANIC, N O S
3289	TOXIC LIQUID, CORROSIVE, INORGANIC, N.O S.
3290	TOXIC SOLID, CORROSIVE, INORGANIC, N.O S.
3292	BATTERIES, CONTAINING SODIUM, or CELLS, CONTAINING SODIUM
3293	HYDRAZINE,AQUEOUS SOLUTION with not more than 37% hydrazine, by mass
3294	HYDROGEN CYANIDE, SOLUTION IN ALCOHOL with not more than 45% hydrogen cyanide.
3295	HYDROCARBONS, LIQUID, N O S
3296	HEPTAFLUOROPROPANE.
3297	ETHYLENE OXIDE AND CHLOROTETRAFLUOROETHANE MIXTURE with not more than 8.8% ethylene oxide
3298	ETHYLENE OXIDE AND PENTAFLUOROETHANE MIXTURE with not more than 7.9% ethylene oxide.
3299	ETHYLENE OXIDE AND TETRAFLUOROETHANE MIXTURE with not more than 5.6% ethylene oxide
3300	ETHYLENE OXIDE AND CARBON DIOXIDE MIXTURE with more than 87% ethylene oxide.
3301	CORROSIVE LIQUID, SELF-HEATING, N O S

Appendix B to § 172 101. In the NPRM, RSPA proposed the addition of two notes which are consistent with recent IMO decisions. The first, Note 4, allows a material meeting criteria for a marine pollutant in the IMDG Code but not listed in Appendix B of § 172.101, to be transported as a marine pollutant. Note 5 allows the Associate Administrator for Hazardous Materials Safety to except from HMR requirements a material listed in Appendix B of the HMR that does not meet the IMDG Code criteria for a marine pollutant In addition, RSPA proposed to amend the HMR's List of Marine Pollutants by adding or removing a number of materials Commenters to these proposals generally supported the proposed changes One commenter questioned the addition of Notes 4 and 5 However, the majority of commenters addressing these proposed changes supported the addition of these notes RSPA is adopting these notes for consistency with IMDG Code provisions Note 4 is consistent with the 27th Amendment to the IMDG Code, which allows the use of criteria for designating marine pollutants. Note 5 provides flexibility so that if a substance does not meet the IMDG Code criteria for a marine pollutant the Associate Administrator may except it from the HMR marine pollutant requirements.

Other commenters thought it more appropriate to address these proposals under Docket HM-211, Marine Pollutants. RSPA disagrees; handling marine pollutant issues in Docket HM-215A will facilitate the harmonization of the HMR with the IMDG Code in conjunction with the January 1, 1995 implementation date for the 27th Amendment to that Code.

Section 172.102. Special Provisions 24, 26, 32, 34–37, 39, 40, 43–52 and 54 are added to § 172.102, Special Provisions 16, 23, B53, and B110 are revised, and Special Provisions 25, 41, and A33 are removed. These special provisions relate to certain materials' classifications and any special packaging requirements that are necessary to safely transport these materials

Section 172 203 One commenter addressing proposed changes to the marine pollutant provisions requested relief from certain shipping paper requirements for specific hydrocarbon compounds which fall under the requirements of 49 CFR Part 130, which prescribes prevention and response requirements for the transportation of oil This commenter believed that petroleum products subject to Part 130 should be exempt from the requirement in § 172 203(l) to indicate on a shipping paper that the material is also a marine pollutant. RSPA partially agrees with the commenter that hazardous materials that are subject to 49 CFR Part 130 should not be subject to the marine pollutant shipping paper requirements of § 172 203(l)(2). Therefore, RSPA is revising § 172.203(l)(2) to except petroleum products that are subject to the provisions of 49 CFR Part 130 when transported in bulk by road or rail

A new paragraph (o) is added to require additional information to be included in the shipping paper description for organic peroxides and self-reactive materials In addition, paragraphs (k) and (m) are revised based on changes to the HMT In paragraph (k), the list of shipping names requiring technical names is revised based on changes to the HMT In paragraph (m), the reference to "Poison" is modified to include an alternative reference to "Toxic."

Section 172.204. RSPA proposed to amend the certification statement in paragraph (a)(2) by adding "placarded" as a condition for declaring a shipment to be properly prepared for transportation. The intent of this proposed change is to provide consistency with international declarations and enable one shipper certification statement to be used for both domestic and export shipments so that different preprinted forms are not needed Commenters supported this proposed change for certifying an international shipment, but were divided as to whether it is appropriate for domestic transportation. Several commenters suggested that paragraph (a)(1) be deleted because it is no longer required. Other commenters believed that paragraph (a)(1) should be retained for domestic purposes without the addition of "placarded" to the certification. According to these commenters, certifying that a shipment has been properly placarded is inconsistent with the provisions in § 172.506 that a shipper must offer and a carrier must affix the required placards for transportation by highway RSPA believes that the addition of "placarded" in the certification would not apply to shipments for which the offeror has no control over affixing placards. However, in this rule, RSPA is retaining paragraph (a)(1) for domestic purposes and is adopting paragraph (a)(2) as proposed for use in either domestic or international transportation In addition, paragraph (a)(2) is amended by removing the provision to indicate the mode of transportation in the shipper's certification This revision is consistent with the multimodal approach adopted in the UN Recommendations, ICAO and IMDG Code

Section 172 320 Section 172 320 is adopted as proposed to authorize all product codes that are traceable to an "EX-number" to be marked on boxes of explosives in lieu of the EX number

Section 172 325 The identification number "9259" shown in the HOT

marking illustration in paragraph (c) is revised to read "3257" to reflect the new UN number assigned to "Elevated temperature material, liquid, n.o.s."

Section 172.400a. A new paragraph (c) is adopted as proposed to state that a subsidiary POISON label is not required on a package bearing a primary CORROSIVE label if the poison hazard of the material inside is based solely on corrosive destruction of tissue and is not due to systemic poisoning. In addition, based on the merit of comments, RSPA is adding a new paragraph (d) to allow the use of a POISON label in place of a KEEP AWAY FROM FOOD label for domestic transportation of Division 6.1 PG III materials.

Section 172.402. Paragraph (a)(2) is adopted as proposed to incorporate certain subsidiary labeling provisions in the subsidiary labeling table in paragraph (a)(2). These provisions require subsidiary hazard labeling for Class 8 Packing Group III materials and Class 3 Packing Group III materials except for Class 3 Packing Group III materials having a flash point at or above 38°C (100°F) when transported by highway or rail. In addition, paragraph (a)(1) is revised to clarify that if Column 6 of the § 172.101 Table indicates a subsidiary label for which there is an exception in paragraph (a)(2) of § 172.402, the exception applies. This revision is based on the merit of comments urging consistency in subsidiary labeling provisions.

In the NPRM, RSPA discussed a change adopted in the eighth revised edition of the UN Recommendations which removed the STOW AWAY FROM FOODSTUFFS label and placard and replaced them with the POISON label and placard for materials having either a primary or secondary hazard in Division 6.1 Packing Group III. As noted previously, RSPA is addressing this issue in a rulemaking action under Docket HM–217, however, RSPA believes that a package containing a material meeting Division 6.1 Packing Group III criteria as either a primary or subsidiary hazard should bear a label which communicates a warning that the material must be kept separate from foodstuffs when transported domestically by any mode. This was discussed in the preamble of the notice, and the proposed changes to the § 172.101 Table included the addition of a KEEP AWAY FROM FOOD label in Column 6 for each affected entry. However, RSPA inadvertently neglected, in the § 172.402(a)(2) proposed regulatory text changes, to remove the "N" at the intersection of row "III" and column "6.1" and replace it with an "X". Commenters on this issue opposed any required domestic labeling of materials having a subsidiary hazard of Division 6.1 Packing Group III. Both HMAC and the Conference on Safe Transportation of Hazardous Articles (COSTHA) stated that any proposed changes should be deferred for consideration under Docket HM–217. In addition, COSTHA noted potential changes to UN toxicity classification criteria and claimed that adopting harmonized toxicity criteria will decrease the number of liquids in Division 6.1 Packing Group III. COSTHA encouraged RSPA not to revise provisions for the labeling and placarding of Division 6.1 Packing Group III materials until the UN and DOT have completed harmonization efforts.

The preamble section review in the NPRM clearly expressed RSPA's intent to revise § 172.402(a)(2) to replace the "N" with an "X" (which would have the effect of requiring subsidiary labeling for materials having a Division 6.1 Packing Group III subsidiary hazard). RSPA believes that materials having a primary or secondary hazard of Division 6.1 PG III pose a risk not only of food contamination, but also dermal and inhalation hazards sufficient to warrant hazard communication. Therefore, RSPA is adopting the requirement for subsidiary hazard labeling for Division 6.1 Packing Group III materials when transported in any mode.

Also, new subsidiary labeling requirements for Class 2 materials are added as paragraphs (f) and (g). Several commenters requested clarification of proposed paragraph (f) regarding a Division 2.2 material that meets the definition of an oxidizer. RSPA is clarifying in this final rule that a Division 2.2 material may meet the definition of an *oxidizing gas*, as defined in § 171.8.

Section 172.411. A requirement specifying a minimum height for the compatibility group letter on certain EXPLOSIVE labels is removed.

Section 172.416. Section 172.416 is revised to allow the use of the words "TOXIC GAS" on the POISON GAS label.

Section 172.430. Section 172.430 is revised to allow the use of the word "TOXIC" on the POISON label.

Section 172.540. Section 172.540 is revised to allow the use of the words "TOXIC GAS" on the POISON GAS placard.

Section 172.547. Section 172.547 is revised to reduce the size requirement for the word "spontaneously" in the "SPONTANEOUSLY COMBUSTIBLE" placard from 25 mm to 12 mm.

Section 172.554. Section 172.554 is revised to allow the use of the word "TOXIC" on the POISON placard.

Part 173

Section 173.2a. Consistent with the UN Recommendations, the Precedence of Hazards Table is adopted as proposed to account for combinations of Division 4.2 and Class 8 materials which currently are denoted as impossible combinations. In addition, two new notes are added at the end of the paragraph (b) table. Note 1 specifies that, for materials having multiple risks which are not listed by technical name in the § 172.101 Table, the most stringent packaging group must be used. Note 2 is added to specify the class assignment for a material which meets the definition of Class 8 and has an inhalation toxicity by dusts and mists at the Packing Group I level.

Section 173.21. A revised reference to the § 173.224 self-reactive materials table is adopted as proposed to reflect changes to the table.

Section 173.22. Revised paragraph (a)(3)(i) is adopted as proposed to indicate that the marking appearing on the bottom of a metal or plastic drum in accordance with § 178.503 is not an acceptable means of determining if the drum is an authorized packaging. Paragraph (a)(2) is revised to recognize packagings manufactured outside the U.S. as provided in § 173.24(d)(2), and paragraph (a)(4) is revised to limit notification provisions to packagings manufactured in the U.S.

Section 173.24. Paragraph (d) is adopted as proposed to specify the conditions under which foreign-manufactured packagings may be used. The revision stipulates the conditions under which foreign-manufactured UN packagings may be filled and used in the U.S. Only packagings from countries affording the same degree of acceptance to U.S.-manufactured packagings may be used. Several commenters did not realize that this proposed revision applies to empty packagings being imported into the U.S. for filling. They thought that the proposal applied to packagings already filled with a hazardous material before being imported into the U.S. Provisions concerning the import of filled packagings are contained in §§ 171.11, 171.12, and 171.12a and are not amended in this final rule. Other commenters expressed concern as to the ability of U.S. shippers to determine which countries recognize U.S. packagings. Two commenters suggested that RSPA periodically publish a notice in the Federal Register, listing those countries that do not recognize U.S.

manufactured UN standard packagings. Several commenters objected to the issue of reciprocity being addressed in a rulemaking action, claiming this is a political issue One alternative suggested by commenters is to consider and resolve such issues at the UN or by the competent authorities of the countries involved. RSPA agrees that every effort should be made by the competent authority of each country involved to resolve reciprocity issues. RSPA would only resort to declaring a country as not providing reciprocal treatment for UN standard packaging manufactured in the U S. in a **Federal Register** notice after exhausting attempts to resolve differences through negotiation

In addition, revised paragraph (e)(4)(ii) is adopted as proposed to prohibit hazardous materials from being packed or mixed with other hazardous or nonhazardous materials in the same outer packaging if such materials are capable of reacting with each other and causing the evolution of "asphyxiant gases."

Section 173.25. Paragraph (a) is adopted as proposed to refer to the definition of "Overpack" in § 171 8, which also is amended to provide examples of suitable overpacks. Commenters generally supported the proposed revision; however, based on several comments, there appears to be confusion regarding the current provisions for overpacks, specifically concerning the marking, labeling and use of shrink- or stretch-wrapped pallets. Currently, shrinkwrap is considered an overpack when consolidating packages on a pallet The overpack must be marked and labeled for each hazardous material contained therein unless markings and labels representative of each hazardous material are visible. If packages are stacked and banded on a pallet, the packages should be positioned, when possible, so that the markings and labels are visible on the outside of the stack.

Paragraph (b) is added as proposed to authorize shrink-wrapped or stretch-wrapped trays as outer packagings for inner packagings prepared under limited quantity or consumer commodity provisions if the completed package is capable of meeting the Packing Group III performance level and the gross weight of the package does not exceed 20 kg This proposal generated opposition from carriers, who claimed that shrink wrap as an outer packaging does not provide adequate protection from the rigors of transportation and should not be authorized. However, at least one of these commenters was referring to a shrink-wrapped pallet rather than a package limited to 20 kg (44 pounds) gross weight On the other hand, commenters such as COSTHA strongly supported this proposal, but requested that RSPA maintain consistency with the UN Recommendations by authorizing the use of shrink-wrapped or stretch-wrapped trays as outer packagings without imposing a requirement that these completed packagings be capable of passing Packing Group III performance tests.

Section 173.28 RSPA is not adopting a proposed revision to paragraph (b)(1), based on the merit of a comment suggesting the sentence duplicates the provisions of § 173.24(d) and should only apply to the reuse of packagings required to meet performance standards, not to the reuse of all packagings. The Association of Container Reconditioners (ACR) urged RSPA to revise the footnote to the table in paragraph (b)(4); to restore the minimum thicknesses to what was required when the final rule was published on December 21, 1990. ACR pointed out that in corrections and amendments made in 1991, the footnote to the table in paragraph (b)(4) had been revised to allow reuse of metal drums with a minimum wall thickness of 0.8 mm and minimum head thickness of 1.1 mm. ACR asked that the note be revised to reference minimum thicknesses of 0.82 mm and 1.09 mm. Since these changes were not proposed in the NPRM, RSPA is not revising the minimum thicknesses at this time; however, the number "0" has been added after the last digit in each instance for clarity.

A commenter expressed confusion over the requirement for the nominal or minimum thickness to be permanently marked on a packaging that is to be reused. The commenter stated that it appeared that the marking could be either the nominal or minimum thickness. Paragraph (b)(4) has been revised to clarify that the nominal thickness is marked on metal packagings, and the minimum thickness must be marked on plastic packagings which are to be reused.

New paragraph (b)(7) is added to waive requirements for leaktesting prior to each reuse to certain packagings used in limited operations. The NPRM proposed to waive retesting requirements for stainless steel, monel, or nickel drums, which are constructed with a thickness at least one and one half times the minimum required by § 173 28(b)(4), and which are refilled with the same or similar compatible contents and transported by a private carrier, contract carrier, or common carrier in a transport vehicle or freight container used exclusively for such service, within a distribution chain controlled by the offeror

Commenters overwhelmingly supported RSPA's proposed paragraph (b)(7) Numerous commenters suggested that RSPA extended the provisions of paragraph (b)(7) to plastic drums in addition to stainless steel, monel, and nickel drums. The commenters cited the high costs that would be incurred by plastic drum users if leak testing were required prior to each use. Many commenters stated that the leak test itself could cause damage to plastic drums over time, due to the bulging of the packaging caused by internal pressure. Commenters asked that RSPA revise paragraph (b)(7) to be more consistent with the UN Recommendations, which require leak testing for plastic drums only after reconditioning

RSPA recognizes that the UN Recommendations do not require a packaging to be leakproofness tested before it is reused for transport, but only after it is reconditioned. However, RSPA notes that the UN Recommendations, at section 9.6.7.2., limit the period of use for plastic drums and jerricans to five years from the date of manufacture The HMR do not currently place a limit on the period of use for plastic drums. RSPA believes that under certain controlled conditions, plastic drums can be used safely without leak testing prior to each reuse.

Upon further consideration of the leakproofness testing requirements for plastic drums, RSPA has determined that the types of damage to plastic drums caused by normal transportation stresses include puncture, abrasion of plastic material, and loose or damaged closures RSPA believes that these types of damage can be detected by a thorough visual examination by a person who is qualified to identify such damage RSPA also believes that damage to plastic drums from abrasion, puncture, and damaged fittings can be minimized with careful handling. For that reason, RSPA believes that plastic drums used in distribution chains controlled by the offeror can be used safely without leak testing prior to each reuse However, damage caused by incompatibility of the product being shipped with the plastic of the drum would not be detected through an external visual examination Because such damage can happen and worsen over time, RSPA believes that after five years of use, a plastic drum should be subjected to a leak test prior to each reuse for the shipment of liquid hazardous materials

New paragraph § 173 28(b)(7) authorizes the reuse, without leak

testing, of certain drums including those constructed of stainless steel, monel, nickel, and plastic. In order to ensure an appropriate level of safety, when stainless steel, monel, or nickel drums are reused without undergoing leakproofness testing, they are required to meet more stringent thickness standards than prescribed in paragraph (b)(4). Plastic drums may be reused without undergoing leakproofness testing only for five years from the date of manufacture, consistent with the UN Recommendations. After five years from the date of manufacture, such drums could continue to be used only if leakproofness tested prior to each reuse. Metal and plastic drums can only be reused without leak testing when refilled with the same or similar contents, and transported by a private carrier, contract carrier, or common carrier in a transport vehicle or freight container used exclusively for such service, within a distribution chain controlled by the offeror. As proposed in the NPRM, other packagings could qualify only if approved by the Associate Administrator for Hazardous Materials Safety. In any case, a packaging which, upon visual examination, shows evidence of a reduction in integrity must be reconditioned and, if applicable, leak tested, before being reused.

RSPA does not agree with commenters who suggested that the waiver of leak testing requirements be extended to metal drums other than those made from stainless steel, monel, and nickel. Transportation stresses typically can cause leakage, from the chime seams of these drums, that is most appropriately detected through the performance of a leakproofness test.

In addition, paragraph (c)(1)(i) is revised to clarify that only external coatings must be removed when reconditioning metal drums.

Section 173.33. Paragraph (c)(5) is amended as proposed to limit the provisions of the paragraph to materials in Packing Groups I and II of Division 6.1.

Section 173.52. The descriptions of Compatibility Group B is revised to clarify that detonators and similar articles are included within this description even if they do not contain primary explosives. In addition, in the descriptions for Compatibility Groups E and F, the word "gel" is added to clarify that articles with a propelling charge containing gel may not be classified in Compatibility Group E or F.

Section 173.59. The definitions "powder, smokeless," "propellants," and "charges, propelling" are revised and definitions for "charges, propelling, for cannon," "propellant, liquid," and "propellant, solid" are added.

Section 173.60. Paragraph (b)(15) is added to require all plastic packagings to be static-resistant.

Section 173.62. The Explosives Table is amended to add new descriptions for Class 1 materials. In addition, the packing method for UN0075 and UN0143 is revised to E–159. The Table of Packing Methods is editorially revised to change the reference to steel and aluminum boxes from 4A1 or 4A2 to 4A and 4B1 or 4B2 to 4B. Several packing methods are revised by authorizing aluminum boxes (4B) as an alternate packaging. For clarity, the entire Explosive Packing Methods Table has been reprinted along with the Table of Particular Packaging Requirements and Exceptions. Paragraph (e) is revised to update the military packaging exception to allow explosives packaged prior to January 1, 1996, to be transported in accordance with the packaging provisions in effect on that date.

Section 173.115. The definition of a Division 2.2 gas is expanded to include asphyxiant and oxidizing gases. However, based on comments received, the definition is revised to be more consistent with the definition in the UN Recommendations. In addition, the definitions of asphyxiant gas and oxidizing gas proposed in the NPRM have been moved to § 171.8.

Section 173.120. RSPA received several comments supporting the new exceptions for Class 3 materials. Some of these commenters requested that these exceptions be extended to the definition of combustible liquids. Though RSPA agrees that similar exceptions should be adopted for the definition of combustible liquid, the exceptions have been established for materials with a flash point of 141 °F or below. The tests may not be appropriate for a material with a flash point of below 200 °F. Therefore, RSPA is unable to adopt this suggestion. However, if data is provided to support adoption of these test methods, or a modified form thereof, RSPA will initiate a new rulemaking action to adopt these exceptions for combustible liquids.

Section 173.121. Criteria for including viscous Class 3 materials in Packing Group III is revised. Several modifications to the method are provided when the temperature of the flash point is too low for the standard procedures. The table in § 173.121(b)(1)(iv) is amended for consistency with the eighth revision of the UN Recommendations.

Section 173.124. The definition of self-reactive materials is revised to conform to the changes in the UN Recommendations, which now contains "generic" shipping descriptions. Seven types of self-reactive material (Types A–G) are defined in paragraph (a)(2). The procedure for assigning a specific self-reactive material to a generic type is set forth in paragraph (a)(2)(vi). If a self-reactive material is identified by technical name in the Self-Reactive Materials Table in § 173.224, the generic type is assigned in that Table. The lengthy process by which importing and exporting countries agree on the packaging requirements or assignment of a shipping description for a new self-reactive material is avoided by using this procedure.

Section 173.128. Editorial revisions are made in paragraphs (a), (c)(2) and (c)(3), paragraph (b)(7) is clarified and procedures for obtaining approvals are clarified in revised paragraph (d).

Section 173.136. RSPA received several comments on the adoption of the OECD Guidelines in the definition of Class 8 (corrosive materials). Some commenters supported the proposed change, while others opposed it and requested that RSPA not adopt it. Those that opposed the change to the Class 8 definition cited problems with retesting of chemicals tested under the old definition, moistening of solid materials before testing, and "full thickness testing." The changes adopted in this final rule to the definition of Class 8 is a refinement of the existing definition. RSPA will not require the retesting of materials that have been classified under the test method previously found in Appendix A of Part 173. In addition, the new definition will not expand significantly the number of materials subject to the HMR. Although the OECD Guidelines require appropriate moistening of a solid material before application to the skin, this minuscule amount of liquid should have no effect on the outcome of the test. In addition, review of some past testing of corrosive solids indicates that moistening is already being used as a vehicle to assure good contact with the skin. As stated by one commenter, the new definition will provide standardization in classifying these materials; make more definitive information available to emergency responders, drivers, cargo handlers, and others; and will facilitate the safe handling and emergency response procedures for corrosive materials. Therefore, RSPA is adopting the changes to the definition of Class 8 and assignment of Class 8 Packing Groups, as proposed.

Section 173.150. RSPA proposed to add language in the introductory text of § 173.150(b) to specifically address

combustible liquids in the limited quantity provisions RSPA received a comment in opposition to this proposal stating that there is no difference in the way combustible liquids that are hazardous substances or hazardous wastes (versus non-hazardous substances or non-hazardous wastes) are treated under the current wording of these provisions. However, combustible liquids in non-bulk packagings that meet the definition of a hazardous substance, hazardous waste, or marine pollutant currently are subject to shipping paper, marking, placarding and other requirements set forth in § 173 150(f)(3). RSPA is adopting the proposed language to clarify that combustible liquids are eligible for the limited quantity exceptions if they are packaged accordingly.

Section 173 152. The limited quantity provisions for organic peroxides are amended by increasing the authorized net capacity per inner packaging for Type D, E, or F liquid and solid organic peroxides and Type B or C solid organic peroxides. However, the authorized net capacity for liquid Type B or C organic peroxides is decreased from 30 ml to 25 ml per inner packaging

Section 173 158 Based on the merits of a comment and a petition for rulemaking (P–1170), a new paragraph (f)(3) is added for nitric acid of 70 percent or less to authorize combination packagings consisting of inner plastic packagings individually overpacked in tightly closed metal packagings, and further packed in an outer packaging, such as a drum or box. This packaging currently is authorized for transportation in cargo aircraft only, but there is no comparable authorization for transport in other modes. Offerors of nitric acid in plastic packagings are reminded of the compatibility requirements specified in § 173.24(e).

Section 173 164 Certain exceptions for mercury (metallic and articles containing mercury), are revised, and a 4H2 solid plastic box is authorized as an outer packaging, consistent with the ICAO Technical Instructions.

Section 173 166. This section is amended to limit its applicability to air bag inflators and modules showing certain specified results when subjected to a bonfire test. Airbag modules and inflators not meeting the test criteria must be transported as explosives. RSPA received several comments on the transportation of airbags, many of which were outside the scope of this rulemaking One commenter requested that RSPA revise proposed proper shipping names for airbags, but did not provide sufficient justification for adding a domestic-only proper shipping name for these commodities The comments requesting new packaging authorization and removal of the Ex-number marking requirements have been denied because they are considered beyond the scope of this rulemaking.

Section 173 168. RSPA proposed the addition of a separate section to define a "nonspillable battery," establish separate requirements for nonspillable batteries (as opposed to the requirements for wet batteries contained in § 173.159), and provide vibration and pressure differential testing criteria. Except when transporting a wheelchair or other battery-powered mobility aid equipped with a nonspillable battery by air as checked baggage, a nonspillable battery which is protected against short circuits, securely packaged and durably marked is not subject to any other HMR requirements. After further deliberation, RSPA has decided not to create a separate section for nonspillable batteries and, therefore, provisions for these batteries will remain in § 173.159.

Section 173.171. Paragraph (a) is revised as proposed to clarify that smokeless powder must be examined and approved as both Division 1.3 and Division 4.1.

Section 173 185 RSPA is amending the requirements for lithium batteries consistent with changes in the UN Recommendations. While the new requirements apply more severe test requirements to lithium batteries, they also allow batteries with higher quantities of lithium to be transported without being subject to the regulations, provided specified criteria are met. Existing batteries previously allowed to be transported as Class 9 batteries may continue to be transported under the present requirements indefinitely if the present requirements are met. One commenter to this section asked why rechargeable batteries are no longer specifically mentioned in the section. Rechargeable batteries are no longer mentioned in the section because such batteries are being treated in the same manner as other lithium batteries.

Section 173 189 RSPA received two comments on the proposed transport of sodium batteries One commenter requested that sodium batteries installed in motor vehicles be excepted from the HMR, and the other requested that sodium batteries be allowed to contain polysulfides. RSPA concurs with these commenters and has revised this proposed section accordingly

Section 173.196 RSPA is adopting the proposed revision to paragraph (f) to clarify that either the inner receptacle or the outer packaging for infectious substances must be capable of withstanding the prescribed pressure differential.

Section 173.211–213 These sections are adopted as proposed to change packaging identification codes (for steel boxes from 4A1 to 4A2 to 4A and for aluminum boxes from 4B1 and 4B2 to 4B) for consistency with international requirements

Section 173.224. This section is revised based on the UN Recommendations. Paragraph (b) sets forth the Self-Reactive Materials Table which identifies the technical name for specific self-reactive materials, the identification number which is used to select the appropriate generic shipping description, specifications for concentrations of the self-reactive material, packing methods that may be used, temperature control requirements, and additional special provisions. The existing packing methods for self-reactive materials are replaced with the packing methods for organic peroxides which are prescribed in § 173.225.

Paragraph (c) sets forth procedures for new self-reactive materials, formulations and samples. New self-reactive materials and formulations of currently identified self-reactive materials must be approved in accordance with the provisions in § 173.124(a)(2)(vi). Paragraph (c)(4) contains provisions for the shipping of samples of new formulations. Paragraph (d) specifies that self-reactive materials of Type F may be transported in bulk only under the approval of the Associate Administrator for Hazardous Materials Safety.

Section 173.225. In § 173.225, paragraph (a) is revised to prohibit the use of metallic non-bulk packagings meeting a Packing Group I packaging standard. Paragraph (c)(5) is added to authorize the transportation of mixtures of organic peroxides that are specifically identified in the Organic Peroxides Table without approval by the Associate Administrator for Hazardous Materials Safety In addition, the Organic Peroxide Table is revised to add new organic peroxides adopted in the UN Recommendations Several miscellaneous changes, based on comments, have been made to the Table In addition, for use domestically, RSPA is adding 12 new organic peroxides that are not listed in the UN Recommendations but have been approved by RSPA for domestic transportation.

Section 173 304. In the paragraph (a)(2) table, for the entry "carbon dioxide," an erroneous reference to a DOT–311800 cylinder is corrected to authorize a DOT–3T1800 cylinder for carbon dioxide.

Section 173.306. In paragraph (a)(3)(v), the hot water immersion test for aerosols and small gas receptacles includes a reference temperature of 50°C (122°F) in addition to the reference temperature of 55°C (131°F). A reference temperature of 50°C is permitted if the liquid phase of the materials contained in the receptacle does not exceed 95 percent of the capacity of the receptacle at 50°C. In addition, provisions are added for plastic receptacles or contents which are sensitive to heat.

Appendix A to Part 173. Appendix A, which provides a method of testing corrosion to skin, is removed and reserved for consistency with changes to the definition and packing group assignment for Class 8 materials.

Appendix E to Part 173. New criteria are added for self-reactive materials possessing explosive properties, and an editorial change is made to clarify that powders of metals or metal alloys that can be ignited are classified in Division 4.1.

Appendix F to Part 173. In paragraph 1, an editorial revision is made to correctly reference Division 5.1.

Appendix H to Part 173. A new Appendix H is added to Part 173 to provide a method of testing for combustibility. This method outlines a procedure for determining if a material can sustain combustion if heated under test conditions and exposed to an external source of flame.

Part 175

Section 175.10. The phrase "environmental restoration or protection" is added as an exception in paragraph (a)(12) to clarify that certain aircraft operations pertaining to environmental restoration may be conducted under the provisions of this paragraph. Exceptions for carbon dioxide (dry ice) are consolidated into paragraph (a)(13) to except this material from regulation from Part 175 when it is used as a refrigerant for a package, intended for use in food or beverage service aboard an aircraft, or used to pack perishables in carry-on baggage. Based on the merit of two comments, proposed paragraph (a)(4) more closely adopts the language of the ICAO Technical Instructions to permit non-radioactive medicinal or toilet articles (including aerosols) in either carry-on baggage or checked baggage It also permits aerosols in Division 2.2 having no subsidiary risk, if intended for sporting or home use, in checked baggage In addition, a new paragraph (a)(26) is added to except from regulation small medical or clinical mercury thermometers carried by passengers or crew members for personal use

Section 175.33 Paragraph (a)(1) is revised to require that a compatibility group letter for a Class 1 material be included in the written notification to the pilot-in-command. RSPA also proposed to add a new paragraph (a)(9) to require an aircraft operator to include an air waybill number where one has been issued. However, based on the merit of a comment from the Air Transport Association, RSPA agrees that the placement of an airway bill number on the notification does nothing to enhance safety. Therefore, this proposed requirement is not adopted.

Part 176

Section 176.27. RSPA proposed the addition of a new paragraph (c) to reference a container packing certificate required under the provisions of the SOLAS Convention and the IMDG Code. Commenters to this proposal did not object to its addition, but suggested that the certification contain a reference to the section outlining the requirements rather than a certification that each of the requirements have been met. RSPA agrees, and is revising proposed paragraph (c)(2). In addition, the Hazardous Materials Advisory Council (HMAC) and the Chemical Manufacturers Association (CMA) asked RSPA to clarify that the container packing certificate is to be presented to the vessel carrier at the time the hazardous materials are offered for transportation by vessel A clarification is added in paragraph (c)(1) in response to this request.

Section 176 76. A new paragraph (i) is adopted as proposed to address the transport of fumigated transport units on vessels. These fumigation requirements are in addition to the fumigation requirements contained in § 173.9. The new vessel requirements are generally consistent with the IMDG Code requirements for transporting fumigated transport units and are consistent with Special Permits currently being issued by the Coast Guard for U.S. maritime transport of fumigated transport units

Part 177

Section 177 841 Revised paragraph (e)(3) is adopted as proposed to specify requirements for separating Division 6 1 Packing Group III materials from foodstuffs, consistent with provisions in § 177.848.

Part 178

Section 178 2 Changes to paragraphs (a) and (e) are adopted as proposed Paragraph (a) is revised to clarify that Part 178 requirements for UN standard packagings apply only to packagings manufactured in the U.S See § 173.24(d)(2) for foreign-manufactured packagings A new paragraph (e) is added to include definitions for "manufacturer" and "specification markings " These new definitions specify who is to be identified through a specification marking as the "manufacturer" and clarify the manufacturer's responsibility under Part 178

Section 178 3. One commenter thought that the location of manufacture should be immaterial to the use of the "USA" mark. This commenter stated that the "USA" mark should be described as simply indicating compliance with Part 178, regardless of where the packaging is physically manufactured and asked RSPA to clarify the use of the marking "USA" for a DOT specification or UN specification packaging that is manufactured in the U S. or in another country RSPA believes that a "USA" marked packaging should be manufactured and marked only in the U S , and that packagings manufactured in the U S must be marked "USA" and comply with Part 178.

Section 178 502. In paragraph (a) introductory text and paragraph (a)(1), the terms "type" or "types" of packagings are revised for consistency with international regulations to read "kind" or "kinds" of packagings.

Section 178.503. As proposed in the NPRM, this section is revised to incorporate changes in the UN Recommendations with regard to the marking of non-bulk packagings. Consistent with the UN Recommendations, each packaging certified to a UN standard must have a series of markings which describe the packaging and its characteristics. The Steel Shipping Container Institute (SSCI) objected to the lower weight limit for packagings which would be required to be marked on the top or side, suggesting that a capacity limit, such as 30 liters, would be more appropriate. SSCI pointed out that, if all packagings over 30 kg are required to be marked on the side or top, packagings as small as 5 gallons, if they are used to ship very dense products, must be marked this way In the UN Recommendations, and as proposed in the NPRM, the threshold of 30 kg above which packagings must be marked on the top or a side is intended to represent the maximum weight that a person can reasonably be expected to lift in order to see the markings on the bottom of a package The important consideration is weight, rather than capacity, and therefore the

30 kg size limit, after which markings must be applied on the top or side, is adopted in this final rule. This requirement has been moved to § 178 3(a)(5) to appear with related marking requirements.

Currently, § 178 503 requires that metal or plastic drums or jerricans intended for reuse be marked with the minimum thickness of the packaging material. Consistent with the UN Recommendations, in this final rule metal drums and jerricans intended for reuse must be marked with the nominal thickness. The nominal thickness marked must be in accordance with ISO 3574; that is, the nominal thickness marked may only exceed the actual minimum thickness of the packaging material by the tolerance specified in ISO 3574. A commenter suggested that RSPA clarify, for a metal packaging marked with a nominal thickness, what the minimum thickness must be. In this final rule, a table indicating what minimum thickness corresponds to the nominal thickness specified in ISO Standard 3574, for various packaging capacities, has been added to a new Appendix C to Part 178. Packagings to be used are still subject to the minimum thickness requirements of § 173.28. Because the eighth revised edition of the UN Recommendations did not address thickness requirements for plastic packagings, plastic drums and jerricans intended for reuse must continue to be marked with the minimum thickness of the packaging material.

In additional to the full marking on the top or side of a metal drum having a capacity greater than 100 liters, paragraph (a)(10) requires a permanent marking of the drum characteristics on the bottom of the drum. The country authorizing the mark and the name and address of the manufacturer are not required as part of this permanent mark. This marking identifies the packaging as it was originally manufactured, and may not necessarily be used to determine compliance with packaging requirements. For example, if a non-removable head drum has been converted to a removable head drum, this conversion is not reflected in the marking on the bottom of the drum, but is evident in the top or side marking. For drums marked permanently on the bottom, the top or side mark is not required to be permanent (i.e., able to withstand the reconditioning process). RSPA is not adopting a commenter's suggestion that the permanent marking on the bottom of a drum not be required if the markings appearing on the top or side of the packaging are permanent. RSPA believes this type of change should be considered first by the UN Committee of Experts

As proposed in the NPRM, the additional permanent marking on the bottom of a drum would have applied to plastic drums as well as metal drums. Several commenters objected to this proposal as it applied to plastic drums. RSPA notes that the UN Recommendations do not require plastic drums to bear the additional permanent marking on the bottom of the drum, and most plastic drums are permanently marked on the side. Based on the merit of comments, and consistent with the UN Recommendations, RSPA is limiting the additional marking requirement of paragraph (a)(10) to metal drums with a capacity greater than 100 liters.

Based on comments from ACR, the marking requirements for metal drums with a capacity greater than 100 liters have been revised in this final rule for greater consistency with the UN Recommendations, and for clarity. As proposed in the NPRM, the permanent marking requirements of paragraph (a)(10) would have applied only to those metal drums "intended for reuse or reconditioning as a single packaging or the outer packaging of a composite packaging." ACR stated that the determination of suitability for reuse or reconditioning is not made by the manufacturer. RSPA agrees, and the qualifier "intended for reuse or reconditioning" is not adopted in this final rule.

A commenter was concerned that a semi-permanent label would not be considered "durable" for purposes of the UN marking. RSPA would consider the use of a printed label to satisfy the requirement for "durable" markings, provided the label can withstand the rigors of normal transportation.

Paragraph (c) specifies additional requirements for markings on reconditioned metal drums. The paragraph requires that reconditioners reapply markings which no longer appear on drums after the reconditioning process. A reconditioner can duplicate the original markings or apply markings which reflect a lower performance level, but cannot apply markings which identify a performance level greater than that for which the original design type had been tested and marked.

A new paragraph (d) clarifies marking requirements for remanufactured packagings. Based on a comment from ACR, paragraph (d) specifies that required markings need not be permanent on remanufactured metal drums for which there is no change to the packaging type, and no replacement of integral structural components. All other remanufactured metal drums must be permanently marked on the top or side This paragraph was not proposed in the NPRM, but is considered necessary to ensure that packagings can be properly marked after remanufacture, when it may not be possible to permanently mark on the bottom.

Section 178 512. Standards for steel boxes and aluminum boxes are consolidated by removing the distinction between unlined/uncoated steel or aluminum boxes and steel or aluminum boxes having an inner liner or coating Therefore, both unlined and lined steel boxes are identified as 4A and unlined and lined aluminum boxes are identified as 4B. Corresponding revisions are reflected in the packaging authorizations of Part 173.

Section 178.513 A new paragraph is added to the standards for natural wood boxes to specify fastening requirements.

Section 178.516 Paragraph (b)(1) contains an updated reference to ISO Standard 535–1976(E). Paragraph (b)(2) is revised to authorize the ends of fiberboard boxes to be constructed of suitable materials other than wood, which is already authorized. As proposed in the NPRM, paragraph (b)(3)(iii) is redesignated as (b)(4) to clarify that the requirement for water-resistant adhesive applies to all box closures, and not only the manufacturer's joint. In its comments, 3M suggested that RSPA include ASTM D5570, Standard Test Method for Water Resistance of Tape and Adhesives Used as a Box Closure, as a standard for determining the water resistance of adhesives used in 4G boxes. Since RSPA did not propose such a standard in the NPRM, the suggestion is not adopted in this final rule.

Section 178.521. In paragraph (b)(2), the term "water-resistant" is revised to "waterproof", and examples of a waterproof ply or barrier are provided.

Section 178.522 A composite packaging consisting of a plastic receptacle in a protective plastic drum is designated as 6HH in the current HMR standards. The UN Recommendations recently adopted a new composite packaging standard to authorize a plastic receptacle in a protective plastic box. Therefore, in paragraph (b)(3), the previous 6HH composite packaging is redesignated at 6HH1 and the new composite packaging (the plastic receptacle in a protective plastic box) is designated as 6HH2.

Section 178.601. Paragraph (b) is adopted as proposed to limit the responsibility of shippers to those packaging assembly functions they actually perform or are responsible for performing. A revision to paragraph

(b)(2) removes the shipper responsibility provision regarding packaging fabrication and testing functions not performed by the shipper. Only one commenter did not favor this proposal. The Society of the Plastics Industry believed that a shipper should share some responsibility for compliance, such as obtaining a certification from the packaging manufacturer for each type of packaging used in hazardous materials service. Paragraph (g)(2)(i) is revised to clarify that selective testing under Variation 2 requires the fragile inner packagings to contain liquids. A new sentence is added to the end of paragraph (g)(2)(vi) to clarify that where outer packagings are not leakproof or siftproof and consequently require some type of leakproof liner, plastic bag or other means of containment, sufficient absorbent material must be placed inside the liner or bag. A new paragraph (k) is added to permit several tests to be performed on one sample if the validity of test results is not affected and if approved by the Associate Administrator for Hazardous Materials Safety. Newly designated paragraph (l) is revised as proposed to clarify recordkeeping requirements and provide consistency with test report requirements in the UN Recommendations. One commenter requested clarification of the methods by which a test method is "maintained" at each location where a packaging is manufactured. This commenter asked if a manufacturer's central office could maintain records when multiple locations are involved and provide access through a computer data base or fax. "Maintained" as provided in § 178 601(l) is limited to hard copies of test reports or electronic storage of reports at each manufacturing location. Inspectors cannot conduct inspections without test records to compare to the packages. Therefore, the company may maintain records at a central office so long as the company is capable of providing hard copy reports in a timely manner to an inspector at the time of inspection. SSCI pointed out that paragraph (l)(10) is redundant with paragraph (l)(1) in that both require an identification of the address of the test facility. RSPA agrees, and paragraph (l)(10), as adopted, requires the title, rather than the address, of the signatory to be included.

Section 178 602 In paragraph (c) a reference to "§ 178.603(d)(2)" is corrected to read "§ 178 603(e)".

Section 178 603. In paragraph (a), a new provision is added to require that the drop test be performed using the package orientation most likely to result in failure if more than one orientation is possible. Paragraph (c) is revised to clarify that the cold drop test outlined in this paragraph applies only to plastic packagings, and applies to combination packagings with inner plastic bags only when the inner packagings are intended to contain liquids. A revision to paragraph (f)(1) clarifies that inner packagings of combination packagings are not required to be vented to reach equilibrium after the drop test.

Section 178 604. For consistency with a change in the UN Recommendations, the length of time to conduct a leakproofness test, other than for production testing, is specified as five minutes in revised paragraph (d).

Section 178.606. For consistency with the UN Recommendations, a phrase is added in paragraph (c)(1) to clarify that the force to be applied, when a test sample contains a non-hazardous liquid with a specific gravity different from the hazardous liquid intended for transport, must be calculated based on the specific gravity that will be marked on the packaging.

Appendix C to Part 178. A new Appendix C is added to Part 178 to incorporate a table indicating the corresponding nominal and minimum thicknesses for packagings of varying capacities, in accordance with ISO Standard 3574.

Rulemaking Analyses and Notices

A. Executive Order 12866 and DOT Regulatory Policies and Procedures

This final rule is not considered to be a significant regulatory action under section 3(f) of Executive Order 12866 and was not reviewed by the Office of Management and Budget. The rule is not considered significant under the Regulatory Policies and Procedures of the Department of Transportation [44 FR 11034]. A regulatory evaluation is available for review in the Docket.

B. Executive Order 12612

This final rule has been analyzed in accordance with the principles and criteria contained in Executive Order 12612 ("Federalism"). Federal law expressly preempts State, local, and Indian tribe requirements applicable to the transportation of hazardous material that cover certain covered subjects and are not substantively the same as Federal requirements. 49 U.S.C. 5125(b)(1). These subjects are:

(A) The designation, description, and classification of hazardous materials;

(B) The packing, repacking, handling, labeling, marking, and placarding of hazardous material;

(C) The preparation, execution, and use of shipping documents pertaining to hazardous material and requirements respecting the number, content, and placement of such documents;

(D) The written notification, recording, and reporting of the unintentional release in transportation of hazardous material; and

(E) The design, manufacturing, fabrication, marking, maintenance, reconditioning, repairing, or testing of a package or container which is represented, marked, certified, or sold as qualified for use in the transportation of hazardous material.

This final rule concerns classification, packaging, labeling, marking, shipping documentation, and manufacture of packaging for hazardous material. Therefore, this final rule preempts State, local, or Indian tribe requirements that are not substantively the same as Federal requirements on these subjects.

Section 5125(b)(2) of title 49 U.S.C. provides that when DOT issues a regulation concerning any of the covered subjects, DOT must determine and publish in the Federal Register the effective date of Federal preemption. That effective date may not be earlier than the 90th day following the date of issuance of the final rule and not later than two years after the date of issuance. RSPA has determined that the effective date of Federal preemption for these requirements will be October 1, 1995. Thus, RSPA lacks discretion in this area, and preparation of a federalism assessment is not warranted.

C. Regulatory Flexibility Act

This rule incorporates changes introduced in the seventh and eighth revised editions of the UN Recommendations, the 1993–1994 and 1995–1996 ICAO Technical Instructions, and Amendments 26 and 27 to the IMDG Code. It applies to offerors and carriers of hazardous materials and facilitates the transportation of hazardous materials in international commerce by providing consistency with international requirements. If this rule is not adopted, U.S. companies, including numerous small entities competing in foreign markets, will be forced to comply with a dual system of regulation, to their economic disadvantage. Therefore, I certify that this rule will not have a significant economic impact on a substantial number of small entities.

D. Paperwork Reduction Act

The requirements for information collection have been approved by the Office of Management and Budget (OMB) under the provisions of the Paperwork Reduction Act of 1980 (Pub. L. 95–511) under OMB control number

2137–0034 for shipping papers and 2137–0557 for approvals.

E Regulation Identifier Number (RIN)

A regulation identifier number (RIN) is assigned to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes the Unified Agenda in April and October of each year. The RIN number contained in the heading of this document can be used to cross-reference this action with the Unified Agenda.

List of Subjects

49 CFR Part 171

Exports, Hazardous materials transportation, Hazardous waste, Imports, Incorporation by reference, Reporting and recordkeeping requirements.

49 CFR Part 172

Hazardous materials transportation, Hazardous waste, Labels, Markings, Packaging and containers, Reporting and recordkeeping requirements.

49 CFR Part 173

Hazardous materials transportation, Packaging and containers, Radioactive materials, Reporting and recordkeeping requirements, Uranium.

49 CFR Part 175

Air carriers, Hazardous materials transportation, Radioactive materials, Reporting and recordkeeping requirements.

49 CFR Part 176

Hazardous materials transportation, Maritime carriers, Radioactive materials, Reporting and recordkeeping requirements.

49 CFR Part 177

Hazardous materials transportation, Motor carriers, Radioactive materials, Reporting and recordkeeping requirements.

49 CFR Part 178

Hazardous materials transportation, Motor vehicles safety, Packaging and containers, Reporting and recordkeeping requirements.

In consideration of the foregoing, 49 CFR Chapter I is amended as follows:

PART 171—GENERAL INFORMATION, REGULATIONS, AND DEFINITIONS

1. The authority citation for Part 171 continues to read as follows:

Authority: 49 U.S.C. 5101–5127; 49 CFR 1.53

2. In the § 171.7(a)(3) Table, under the entry *American Society for Testing and Materials*, a new entry is added in numerical order; under the entry *International Organization for Standardized*, three new entries are added at the end of existing entries; and a new entry is added in alphabetical order, to read as follows:

§ 171.7 Reference material.

(a) * * *

(3) *Table of material incorporated by reference.* * * *

Source and name of material	49 CFR reference
* * *	
American Society for Testing and Materials	
* * *	
ASTM G 31–72 (Reapproved 1990) Standard Practice for Laboratory Immersion Corrosion Testing of Metals	173.137
* * *	
International Organization for Standardization	
* * *	
ISO 3574–1986(E) Cold-reduced carbon steel sheet of commercial and drawing qualities	178.503
ISO 2592–1973(E) Petroleum products—Determination of flash and fire points—Cleveland open cup method	173.120
ISO 9328–1—1991(E) Steel plates and strips for pressure purposes—Technical delivery conditions—Part 1: General requirements	173.137
* * *	
Organization for Economic Cooperation and Development (OECD)	
OECD Publications and Information Center, 2001 L Street, Suite 700, Washington, DC 20036	
OECD Guideline for Testing of Chemicals, No.404 "Acute Dermal Irritation/Corrosion", 1992	173.137
* * *	

* * * * *

§ 171.7 [Amended]

3. In addition, in § 171.7, in the table in paragraph (a)(3), the following changes are made:

a. In the entry ASTM D 56–79, the wording "D 56–79 Standard Method of Test for Flash Point by Tag Closed Tester" is revised to read "D 56–93 Standard Test Method for Flash Point by Tag Closed Tester".

b. In the entry ASTM D 93–80, the wording "D 93–80 Standard Method of Test for Flash Point by Pensky Martens Closed Tester" is revised to read "D 93–90 Standard Test Methods for Flash Point by Pensky-Martens Closed Tester".

c. In the entry ASTM D 3278–78, the wording "D 3278–78 Flash Point of Liquids by Setaflash Closed Tester" is revised to read "ASTM D 3278–89 Standard Test Methods for Flash Point of Liquids by Setaflash Closed-Cup Apparatus".

d. In the entry ASTM D 4359–84, the wording "D 4359–84" is revised to read "ASTM D 4359–90".

e. Under International Civil Aviation Organization (ICAO), for the entry "Technical Instructions for the Safe Transport of Dangerous Goods by Air", the date "1993–1994" is revised to read "1995–1996".

f. Under International Maritime Organization (IMO), the entry "International Maritime Dangerous Goods (IMDG) Code, 1990 Consolidated Edition, as amended by Amendment 26 thereto" is amended by removing the wording "Amendment 26 thereto" and adding in its place the wording "Amendment 27 (1994)".

g. Under International Organization for Standardization, the wording "ISO–535–1976(E) Paper and Board—Determination of Water Absorption—

Cobb Method" is revised to read "ISO-535-1991(E) Paper and board—Determination of water absorptiveness—Cobb method".

h. Under Transport Canada, the entry "Transportation of Dangerous Goods Regulations, as of July 1, 1985, incorporating Registration Numbers SOR/85-77, SOR/85-585 and SOR/85-609" is revised to read "Transportation of Dangerous Goods Regulations, 1 July 1985, SOR/85/77, incorporating the following Registration Numbers: SOR/85-314, SOR/85-585, SOR/85-609, SOR/86-526, SOR/88-635, SOR/87-335, SOR/87-186, SOR/89-39, SOR/89-294, SOR/90-847, SOR/91-711, SOR/91-712, SOR/92-447, SOR/92-600, SOR/93-203, SOR/93-274, SOR/93-525, SOR/94-146 and SOR/94-264 (English edition)".

i. Under United Nations, for the entry "UN Recommendations on the Transport of Dangerous Goods, Sixth Revised Edition (1989)" the wording "Sixth Revised Edition (1989)" is revised to read "Eighth Revised Edition (1993)".

j. Under United Nations, for the entry "UN Recommendations on the Transport of Dangerous Goods, Tests and Criteria, Second Edition, 1990", in column 2, the references "173.124;" "173 128;" "173.166;" and "173.185" are added in appropriate numerical order.

4. In § 171.8, the following definitions are added or revised, as indicated, in appropriate alphabetical order to read as follows:

§ 171.8 Definitions and abbreviations.

[Add:]

* * * * *

Asphyxiant gas means a gas which dilutes or replaces oxygen normally in the atmosphere

* * * * *

Gas means a material which has a vapor pressure greater than 300 kPa (43.5 psi) at 50°C (122°F) or is completely gaseous at 20°C (68°F) at a standard pressure of 101.3 kPa (14.7 psi).

* * * * *

Oxidizing gas means a gas which may, generally by providing oxygen, cause or contribute to the combustion of other material more than air does.

* * * * *

Siftproof packaging means a packaging impermeable to dry contents, including fine solid material produced during transportation.

* * * * *

[Revise:]

* * * * *

Box means a packaging with complete rectangular or polygonal faces, made of metal, wood, plywood, reconstituted wood, fiberboard, plastic, or other suitable material. Holes appropriate to the size and use of the packaging, for purposes such as ease of handling or opening, or to meet classification requirements, are permitted as long as they do not compromise the integrity of the packaging during transportation, and are not otherwise prohibited in this subchapter.

* * * * *

Liquid means a material, other than an elevated temperature material, with a melting point or initial melting point of 20°C (68°F) or lower at a standard pressure of 101.3 kPa (14.7 psi). A viscous material for which a specific melting point cannot be determined must be subjected to the procedures specified in ASTM D 4359 "Standard Test Method for Determining Whether a Material is Liquid or Solid".

* * * * *

Overpack, except as provided in subpart K of part 178 of this subchapter, means an enclosure that is used by a single consignor to provide protection or convenience in handling of a package or to consolidate two or more packages. *Overpack* does not include a transport vehicle, freight container, or aircraft unit load device. Examples of overpacks are one or more packages:

(1) Placed or stacked onto a load board such as a pallet and secured by strapping, shrink wrapping, stretch wrapping, or other suitable means; or

(2) Placed in a protective outer packaging such as a box or crate.

* * * * *

Solid means a material which is not a gas or a liquid.

* * * * *

UN standard packaging means a packaging conforming to standards in the UN Recommendations on the Transport of Dangerous Goods.

* * * * *

§ 171.11 [Amended]

5. In § 171.11, in the last sentence of paragraph (d)(5), the wording "Poison" is revised to read "Poison or Toxic".

§ 171.12 [Amended]

6. In § 171.12, in paragraph (b) introductory text, in the second sentence, the wording "stowed and segregated, and certified in accordance with the IMDG Code" is revised to read "stowed and segregated, and certified (including a container packing certification, if applicable) in accordance with the IMDG Code".

7. Section 171 14 is revised to read as follows.

§ 171.14 Transitional provisions for implementing requirements based on the UN Recommendations.

General. The purpose of the provisions of this section is to provide an orderly transition to new requirements based on the UN Recommendations, so as to minimize any burdens associated with them. Subsequent final rules may implement different time requirements than the transitional provisions in this section. When the effective date section or regulatory text of a final rule imposes a compliance date earlier or later than that which would be required under this section, the transition date in this section does not apply.

(a) A rule published in the Federal Register on December 21, 1990, effective October 1, 1991, resulted in a comprehensive revision of this subchapter based on the UN Recommendations. Final rules published in the Federal Register on December 20, 1991 effective October 1, 1991, October 1, 1992 effective October 1, 1992, September 24, 1993 effective October 1, 1993, and September 22, 1994 effective September 22, 1994, further revised the December 21, 1990 final rule. Prior to an applicable transition date in paragraph (a)(1) of this section, a person may elect to comply with either the applicable requirements of this subchapter in effect on September 30, 1991, or the requirements of this subchapter appearing in the December 20, 1990 rule, as revised in final rules published in the Federal Register on December 20, 1991, October 1, 1992, September 24, 1993, and September 22, 1994.

(1) *Transition dates.* The following transition dates apply only to requirements in the December 21, 1990 rule, as revised in the December 20, 1991, October 1, 1992, September 24, 1993, and September 22, 1994 final rules.

(i) *January 1, 1995.* On January 1, 1995, all applicable regulatory requirements, including those pertaining to classification (see § 173 134 of this subchapter), hazard communication, and packaging, are effective for Division 6.2 materials (infectious substances) other than regulated medical waste and infectious substances affecting animals only.

(ii) *October 1, 1995.* On October 1, 1995, all applicable regulatory requirements, including those pertaining to classification (see § 173.134 of this subchapter), hazard communication, and packaging are

effective for regulated medical waste (Division 6 2) and infectious substances affecting animals only (Division 6.2).

(iii) *October 1, 1996* On October 1, 1996, requirements in Parts 172 and 173 of this subchapter for maintenance and use of packagings that were not previously in effect are effective. (DOT specification packagings removed from Part 178 of this subchapter by the December 21, 1990 final rule and packaging authorizations removed from Part 173 of this subchapter by the December 21, 1990 final rule may no longer be used in place of new packaging requirements.)

(2) *Other transitional provisions*—(i) *Packages filled prior to October 1, 1991* Notwithstanding the marking and labeling provisions of Subparts D and E, respectively, of Part 172, and the packaging provisions of Part 173 and Subpart B of Part 172 of this subchapter, a package may be offered for transportation and transported prior to October 1, 2001, if it—

(A) Conforms to the old requirements of this subchapter in effect on September 30, 1991;

(B) Is filled with hazardous materials prior to October 1, 1991;

(C) Is marked "Inhalation Hazard", if appropriate, in accordance with § 172 313 of this subchapter or Special Provision 13, as assigned in the § 172 101 Table; and

(D) Is not emptied and refilled on or after October 1, 1991.

(ii) *Transitional placarding provisions.* Until October 1, 2001, placards which conform to specifications for placards in effect on September 30, 1991, may be used in place of the placards specified in Subpart F of Part 172 of this subchapter, in accordance with the following table

PLACARD SUBSTITUTION TABLE

Hazard class or division number	Current placard name	Old (Sept. 30, 1991) placard name
Division 1 1	Explosives 1.1	Explosives A.
Division 1.2	Explosives 1.2	Explosives A.
Division 1 3	Explosives 1.3	Explosives B.
Division 1 4	Explosives 1.4	Dangerous.
Division 1 5	Explosives 1.5	Blasting agents.
Division 1.6	Explosives 1 6	Dangerous.
Division 2 1	Flammable gas	Flammable gas.
Division 2.2	Nonflammable gas	Nonflammable gas.
Division 2.3	Poison gas	Poison gas.
Class 3	Flammable	Flammable.
Combustible liquid	Combustible	Combustible.
Division 4 1	Flammable solid	Flammable solid.
Division 4.2	Spontaneously combustible	Flammable solid.
Division 4.3	Dangerous when wet	Flammable solid W.
Division 5.1	Oxidizer	Oxidizer.
Division 5.2	Organic peroxide	Organic peroxide.
Division 6.1, PG I and II	Poison	Poison.
Division 6 1, PG III	Keep away from food	(none required).
Class 7	Radioactive	Radioactive.
Class 8	Corrosive	Corrosive.
Class 9	Class 9	(none required).

(b) A rule published in the **Federal Register** on December 29, 1994, effective October 1, 1995, resulted in further revisions to this subchapter based on the UN Recommendations. During the transition period provided in paragraph (b)(1) of this section, a person may elect to comply with either the applicable requirements of this subchapter in effect on September 30, 1995, the applicable requirements based on the transition dates provided in paragraph (a)(1) of this section, or the requirements of this subchapter appearing in the December 29, 1994, final rule.

(1) *Transition date* On October 1, 1996, all applicable regulatory requirements adopted in the December 29, 1994, final rule must be met.

(2) *Intermixing old and new requirements* Prior to the transition date in paragraph (b)(1) of this section, it is recommended that hazard communication requirements be consistent where practicable, i.e., marking, labeling, placarding, and shipping paper descriptions should conform to either the old requirements of this subchapter in effect on September 30, 1995, or new requirements of this subchapter added or revised by the December 29, 1994, rule, without intermixing of communication elements. However, intermixing is permitted, during the applicable transition period, for packaging, hazard communication, and handling provisions, as follows:

(i) If either shipping names or identification numbers are identical, a shipping paper may display the old shipping description even if the package is marked and labeled under the new shipping description;

(ii) If either shipping names or identification numbers are identical, a shipping paper may display the new shipping description even if the package is marked and labeled under the old shipping description; and

(iii) Either old or new placards may be used regardless of whether old or new shipping descriptions and package markings are used.

PART 172—HAZARDOUS MATERIALS TABLE, SPECIAL PROVISIONS, HAZARDOUS MATERIALS COMMUNICATIONS, EMERGENCY RESPONSE INFORMATION, AND TRAINING REQUIREMENTS

8. The authority citation for part 172 continues to read as follows:

Authority: 49 U S C 5101–5127, 49 CFR 1 53.

9. In § 172.101, paragraphs (c)(3), (c)(13) and (k)(1) through (k)(5) are revised and, in paragraph (g), a new sentence is added as the last sentence to read as follows:

§ 172.101 Purpose and use of hazardous materials table.

* * * * *

(c) * * *

(3) The word "poison" or "poisonous" may be used interchangeably with the word "toxic" when only domestic transportation is involved The abbreviation "n o s." or

"n.o.i.b.n." may be used interchangeably with "n.o.s.".

* * * * *

(13) *Self-reactive materials and organic peroxides.* A generic proper shipping name for a self-reactive material or an organic peroxide, as listed in Column 2 of the Table, must be selected based on the material's technical name and concentration, in accordance with the provisions of §§ 173.224 or 173.225 of this subchapter, respectively.

* * * * *

(g) * * * No label is required for a material classed as a combustible liquid or for a Class 3 material that is reclassed as a combustible liquid.

* * * * *

(k) * * *

(1) Stowage category "A" means the material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

(2) Stowage category "B" means—

(i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each three meters of overall vessel length; and

(ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.

(3) Stowage category "C" means the material must be stowed "on deck only" on a cargo vessel and on a passenger vessel.

(4) Stowage category "D" means the material must be stowed "on deck only" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers or one passenger per each three meters of overall vessel length, but the material is prohibited on passenger vessels in which the limiting number of passengers is exceeded.

(5) Stowage category "E" means the material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each three meters of overall vessel length, but is prohibited from carriage on passenger vessels in which the limiting number of passengers is exceeded.

* * * * *

§ 172.101 [Amended]

10. In addition, in § 172.101, the following changes are made:

a. In paragraph (c)(11) introductory text, the wording "§§ 173.21, 173.51, 173.56(d), or 173.56(e)(1)" is revised to read "§§ 173.21, 173.51, 173.56(d), 173.56(e)(1), 173.124(a)(2)(iii) or 173.128(c)"; and the wording "hazard class and identification number," is revised to read "hazard class, identification number, and packing group,".

b. In paragraph (c)(12)(iii), the last sentence is removed.

11. In § 172.101, the Hazardous Materials Table is revised to read as follows:

§ 172.101 Purpose and use of hazardous materials table.

* * * * *

BILLING CODE 4910-60-P

§172.101 HAZARDOUS MATERIALS TABLE

Symbols (1)	Hazardous materials descriptions and proper shipping names (2)	Hazard class or Division (3)	Identification Numbers (4)	Packing group (5)	Label(s) required (if not excepted) (6)	Special provisions (7)	(8) Packaging authorizations (§173 ***) Exceptions (8A)	Non-bulk packaging (8B)	Bulk packaging (8C)	(9) Quantity limitations Passenger aircraft or railcar (9A)	Cargo aircraft only (9B)	(10) Vessel stowage requirements Vessel stowage (10A)	Other stowage provisions (10B)
	Accelerane, see p-Nitrosodimethylaniline												
	Accumulators electric, see Batteries, wet etc.												
D	Accumulators, pressurized, pneumatic or hydraulic *(containing non-flammable gas)*	2.2	NA1956		NONFLAMMABLE GAS		306	306	None	No limit	No limit	A	
	Acetal	3	UN1088	II	FLAMMABLE LIQUID	T7	150	202	242	5 L	60 L	E	
	Acetaldehyde	3	UN1089	I	FLAMMABLE LIQUID	A3, B15, T20, T26, T29	None	201	243	Forbidden	30 L	E	
A	Acetaldehyde ammonia	9	UN1841	III	CLASS 9		156	204	240	200 kg	200 kg	A	34
	Acetaldehyde oxime	3	UN2332	III	FLAMMABLE LIQUID	B1, T8	150	203	242	60 L	220 L	A	
	Acetic acid, glacial or Acetic acid solution, *with more than 80 percent acid, by mass*	8	UN2789	II	CORROSIVE FLAMMABLE LIQUID	A3, A6, A7, A10 B2, T8.	154	202	243	1 L	30 L	A	
	Acetic acid solution, *with more than 10 percent but not more than 80 percent acid, by mass*	8	UN2790	II	CORROSIVE	A3, A6, A7, A10 B2, T8	154	202	242	1 L	30 L	A	
	Acetic anhydride	8	UN1715	II	CORROSIVE, FLAMMABLE LIQUID	A3, A6, A7, A10, B2, T8.	154	202	243	1 L	30 L	A	40
	Acetone	3	UN1090	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	B	
	Acetone cyanohydrin, stabilized	6.1	UN1541	I	POISON	2, A3, B9, B14, B32 B76 B77, N34, T38, T43, T45.	None	227	244	Forbidden	30 L	D	25, 40, 49
	Acetone oils	3	UN1091	II	FLAMMABLE LIQUID	T7, T30	150	202	242	5 L	60 L	B	
	Acetonitrile	3	UN1648	II	FLAMMABLE LIQUID	T14	150	202	242	1 L	60 L	B	40
	Acetyl acetone peroxide with more than 9 percent by mass active oxygen	Forbidden											
	Acetyl benzoyl peroxide, solid or with more than 40 percent in solution	Forbidden											
	Acetyl bromide	8	UN1716	II	CORROSIVE	B2, T12, T26	154	202	242	1 L	30 L	C	40
	Acetyl chloride	3	UN1717	II	FLAMMABLE LIQUID, CORROSIVE	A3, A6, A7, B100, N34, T18, T26.	None	202	243	1 L	5 L	B	40
	Acetyl cyclohexanesulfonyl peroxide, with more than 82 percent wetted with less than 12 percent water	Forbidden											
	Acetyl iodide	8	UN1898	II	CORROSIVE	B2, B101, T9	154	202	242	1 L	30 L	C	40
	Acetyl methyl carbinol	3	UN2621	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Acetyl peroxide, solid, or with more than 25 percent in solution	Forbidden											
	Acetylene dissolved	2.1	UN1001		FLAMMABLE GAS		None	303	None	Forbidden	15 kg	D	25, 40, 57
	Acetylene (liquefied)	Forbidden											
	Acetylene silver nitrate	Forbidden											
	Acetylene tetrabromide, see Tetrabromoethane												
	Acid butyl phosphate see Butyl acid phosphate												
	Acid, sludge, *see* Sludge acid												
	Acridine	6.1	UN2713	III	KEEP AWAY FROM FOOD		153	213	240	100 kg	200 kg	A	
	Acrolein dimer, stabilized	3	UN2607	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	40
	Acrolein inhibited	6.1	UN1092	I	POISON, FLAMMABLE LIQUID.	1, B9, B12, B14, B30, B42, B72, B77, T38, T43, T44.	None	226	244	Forbidden	Forbidden	D	40
	Acrylamide	6.1	UN2074	III	KEEP AWAY FROM FOOD.	T8	153	213	240	100 kg	200 kg	A	12
	Acrylic acid, inhibited	8	UN2218	II	CORROSIVE, FLAMMABLE LIQUID	B2, T8	154	202	243	1 L	30 L	C	25, 40
	Acrylonitrile, inhibited	3	UN1093	I	FLAMMABLE LIQUID, POISON	B9, T18, T26	None	201	243	Forbidden	30 L	E	40
	Actuating cartridge explosive see Cartridges, power device												
	Adhesives, *containing a flammable liquid*	3	UN1133	II	FLAMMABLE LIQUID	B52 T7, T30	150	173	242	5 L	60 L	B	
				III	FLAMMABLE LIQUID	B1, B52, T7, T30	150	173	242	60 L	220 L	A	
	Adiponitrile	6.1	UN2205	III	KEEP AWAY FROM FOOD.	T1	153	203	241	60 L	220 L	A	
	Aerosols, *corrosive, Packing Group II or III, (each not exceeding 1 L capacity)*	2.2	UN1950		NONFLAMMABLE GAS, CORROSIVE	A34	306	None	None	75 kg	150 kg	A	40, 48, 55
	Aerosols *flammable (each not exceeding 1 L capacity)*	2.1	UN1950		FLAMMABLE GAS	N82	306	None	None	75 kg	150 kg	A	40, 48, 55
	Aerosols, *non-flammable, (each not exceeding 1 L capacity)*	2.2	UN1950		NONFLAMMABLE GAS		306, 307	None	None	75 kg	150 kg	A	48, 55

§172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols (1)	Hazardous materials descriptions and proper shipping names (2)	Hazard class or Division (3)	Identification Numbers (4)	Packing group (5)	Label(s) required (if not excepted) (6)	Special provisions (7)	(8) Packaging authorizations (§173 ***) Exceptions (8A)	Non-bulk packaging (8B)	Bulk packaging (8C)	(9) Quantity limitations Passenger aircraft or railcar (9A)	Cargo aircraft only (9B)	(10) Vessel stowage requirements Vessel stowage (10A)	Other stowage provisions (10B)
	Aerosols, poison, each not exceeding 1 L capacity	2.2	UN1950		NONFLAMMABLE GAS		306	None	None	Forbidden	Forbidden	A	40, 48, 65
	Air bag inflators or Air bag modules or Seat-belt pre-tensioners or Seat-belt modules	9	UN3268	III	CLASS 9		168	168	168	25 kg	100 kg	A	
	Air, compressed	2.2	UN1002		NONFLAMMABLE GAS		306	302	302	75 kg	150 kg	A	
	Air, refrigerated liquid, (cryogenic liquid)	2.2	UN1003		NONFLAMMABLE GAS, OXIDIZER.		320	316	318, 319	Forbidden	150 kg	D	51
	Air, refrigerated liquid, (cryogenic liquid) non-pressurized	2.2	UN1003		NONFLAMMABLE GAS, OXIDIZER.		320	316	318, 319	Forbidden	Forbidden	D	51
	Aircraft evacuation slides, see Life saving appliances etc.												
	Aircraft hydraulic power unit fuel tank (containing a mixture of anhydrous hydrazine and monomethyl hydrazine) (M86 fuel)	3	UN3165	I	FLAMMABLE LIQUID, POISON, CORROSIVE		None	172	None	Forbidden	42 L	E	
	Aircraft survival kits see Life saving appliances etc												
	Alcoholates solution, n.o.s., in alcohol	3	UN3274	II	FLAMMABLE LIQUID, CORROSIVE		None	202	243	1 L	5 L	B	
	Alcoholic beverages	3	UN3065	II	FLAMMABLE LIQUID	24, B1, T1	150	202	242	5 L	60 L	A	
				III	FLAMMABLE LIQUID	24, B1, N11, T1	150	203	242	60 L	220 L	A	
	Alcohols, n.o.s.	3	UN1987	I	FLAMMABLE LIQUID	T8, T31	None	201	243	1 L	30 L	E	
				II	FLAMMABLE LIQUID	T8, T31	150	202	242	5 L	60 L	B	
				III	FLAMMABLE LIQUID	B1, T7, T30	150	203	242	60 L	220 L	A	
	Alcohols, toxic, n.o.s.	3	UN1986	I	FLAMMABLE LIQUID, POISON	T8, T31	None	201	243	Forbidden	30 L	E	40
				II	FLAMMABLE LIQUID, POISON.	T8, T31	None	202	243	1 L	60 L	B	40
				III	FLAMMABLE LIQUID, KEEP AWAY FROM FOOD.	B1, T8, T31	None	203	242	60 L	220 L	A	
	Aldehydes, n.o.s.	3	UN1989	I	FLAMMABLE LIQUID	T8, T31	None	201	243	1 L	30 L	E	
				II	FLAMMABLE LIQUID	T8, T31	150	202	242	5 L	60 L	B	
				III	FLAMMABLE LIQUID	B1, T7, T30	150	203	242	60 L	220 L	A	
	Aldehydes, toxic, n.o.s.	3	UN1988	I	FLAMMABLE LIQUID, POISON	T8, T31	None	201	243	Forbidden	30 L	E	40
				II	FLAMMABLE LIQUID, POISON	T8, T31	None	202	243	1 L	60 L	B	40
				III	FLAMMABLE LIQUID, KEEP AWAY FROM FOOD	B1, T8, T31	150	203	242	60 L	220 L	A	
	Aldol	6.1	UN2839	II	POISON	T8	None	202	243	5 L	60 L	A	12
D	Aldrin, liquid	6.1	NA2762	II	POISON		None	202	243	5 L	60 L	B	
D	Aldrin, solid	6.1	NA2761	II	POISON		None	212	242	25 kg	100 kg	A	40
	Alkali metal alcoholates, self-heating, corrosive, n.o.s.	4.2	UN3206	II	SPONTANEOUSLY COMBUSTIBLE, CORROSIVE		None	212	242	15 kg	50 kg	B	
				III	SPONTANEOUSLY COMBUSTIBLE, CORROSIVE.		None	213	242	25 kg	100 kg	B	
	Alkali metal alloys, liquid, n.o.s.	4.3	UN1421	I	DANGEROUS WHEN WET.	A2, A3, B48, N34	None	201	244	Forbidden	1 L	D	
	Alkali metal amalgams	4.3	UN1389	I	DANGEROUS WHEN WET	A2, A3, N34	None	201	244	Forbidden	1 L	D	
	Alkali metal amides	4.3	UN1390	II	DANGEROUS WHEN WET	A6, A7, A8, A19, A20, B101	None	212	241	15 kg	50 kg	E	40
	Alkali metal dispersions or Alkaline earth metal dispersions	4.3	UN1391	I	DANGEROUS WHEN WET	A2, A3	None	201	244	Forbidden	1 L	D	
	Alkaline corrosive liquids, n.o.s. see Caustic alkali liquids, n.o.s.												
	Alkaline earth metal alcoholates, n.o.s.	4.2	UN3205	II	SPONTANEOUSLY COMBUSTIBLE		None	212	241	15 kg	50 kg	B	
				III	SPONTANEOUSLY COMBUSTIBLE.		None	213	241	15 kg	100 kg	B	
	Alkaline earth metal alloys, n.o.s.	4.3	UN1393	II	DANGEROUS WHEN WET	A19, B100	None	212	241	15 kg	50 kg	E	
	Alkaline earth metal amalgams	4.3	UN1392	I	DANGEROUS WHEN	A19, N34, N40	None	211	242	Forbidden	15 kg	D	

Alkaloids liquid n.o.s. or Alkaloid salts liquid, n.o.s.	6.1	UN3140	I	POISON	A4, T42	None	201	243	1 L	30 L	A		
			II	POISON	T14	None	202	243	5 L	60 L	A		
			III	KEEP AWAY FROM FOOD	T7	153	203	241	60 L	220 L	A		
Alkaloids solid n.o.s. or Alkaloid salts solid n.o.s. poisonous	6.1	UN1544	I	POISON		None	211	242	5 kg	50 kg	A		
			II	POISON		None	212	242	25 kg	100 kg	A		
			III	KEEP AWAY FROM FOOD		153	213	240	100 kg	200 kg	A		
Alkyl sulfonic acids liquid or Aryl sulfonic acids, liquid with more than 5 percent free sulfuric acid	8	UN2584	II	CORROSIVE	B2 T8, T27	154	202	242	1 L	30 L	B		
Alkyl sulfonic acids liquid or Aryl sulfonic acids, liquid with not more than 5 percent free sulfuric acid	8	UN2586	III	CORROSIVE	T8	154	203	241	5 L	60 L	B		
Alkyl sulfonic acids solid or Aryl sulfonic acids, solid, with more than 5 percent free sulfuric acid	8	UN2583	II	CORROSIVE		154	212	240	15 kg	50 kg	A		
Alkyl sulfonic acids, solid or Aryl sulfonic acids, solid with not more than 5 percent free sulfuric acid	8	UN2585	III	CORROSIVE		154	213	240	25 kg	100 kg	A		
Alkylphenols liquid n.o.s. (including C2-C12 homologues)	8	UN3145	I	CORROSIVE	T8	None	201	243	0.5 L	2.5 L	B		
			II	CORROSIVE	T8	154	202	242	1 L	30 L	B		
			III	CORROSIVE	T7	154	203	241	5 L	60 L	A		
Alkylphenols, solid n.o.s. (including C2-C12 homologues)	8	UN2430	I	CORROSIVE	T8	None	211	242	1 kg	25 kg	B		
			II	CORROSIVE	T8	154	212	240	15 kg	50 kg	B		
			III	CORROSIVE	T8	154	213	240	25 kg	100 kg	A		
Alkylsulfuric acids	8	UN2571	II	CORROSIVE	B2, T9, T27	154	202	242	1 L	30 L	C		14
Allethrin, see Pesticides, liquid, toxic n.o.s.													
Allyl acetate	3	UN2333	II	FLAMMABLE LIQUID, POISON.	T8	None	202	243	1 L	60 L	E		40
Allyl alcohol	6.1	UN1098	I	POISON, FLAMMABLE LIQUID.	2, B9, B14, B32, B74, B77, T38, T43, T45	None	227	244	Forbidden	Forbidden	D		40
Allyl bromide	3	UN1099	I	FLAMMABLE LIQUID, POISON.	T18	None	201	243	Forbidden	30 L	B		40
Allyl chloride	3	UN1100	I	FLAMMABLE LIQUID, POISON.	T18, T26	None	201	243	Forbidden	30 L	E		40
Allyl chlorocarbonate, See Allyl chloroformate													
Allyl chloroformate	6.1	UN1722	I	POISON, FLAMMABLE LIQUID, CORROSIVE	2, A3, B9, B14, B32, B74, N41, T38, T43, T45.	None	227	244	Forbidden	Forbidden	D		40
Allyl ethyl ether	3	UN2335	II	FLAMMABLE LIQUID, POISON	T8	None	202	243	1 L	60 L	E		40
Allyl formate	3	UN2336	I	FLAMMABLE LIQUID, POISON	T18, T26	None	201	243	Forbidden	30 L	E		40
Allyl glycidyl ether	3	UN2219	III	FLAMMABLE LIQUID	B1, T7	150	203	242	60 L	220 L	A		
Allyl iodide	3	UN1723	II	FLAMMABLE LIQUID, CORROSIVE	A3, A6, B100, N34 T18	None	202	243	1 L	5 L	B		40
Allyl isothiocyanate, stabilized	6.1	UN1545	II	POISON	A3, A7	None	202	243	Forbidden	60 L	D		40
Allylamine	6.1	UN2334	I	POISON, FLAMMABLE LIQUID	2, B9, B14, B32, B74 T38 T43, T45	None	227	244	Forbidden	Forbidden	D		40
Allyltrichlorosilane, stabilized	8	UN1724	II	CORROSIVE, FLAMMABLE LIQUID.	A7, B2, B6, N34, T8, T26.	None	202	243	Forbidden	30 L	C		40
Aluminum alkyl halides	4.2	UN3052	I	SPONTANEOUSLY COMBUSTIBLE.	B9 B11, T28, T29 T40	None	181	244	Forbidden	Forbidden	D		
Aluminum alkyl hydrides	4.2	UN3076	I	SPONTANEOUSLY COMBUSTIBLE	B9, B11, T28, T29, T40	None	181	244	Forbidden	Forbidden	D		
Aluminum alkyls	4.2	UN3051	I	SPONTANEOUSLY COMBUSTIBLE	B9 B11, T28, T29, T40.	None	181	244	Forbidden	Forbidden	D		
Aluminum borohydride or Aluminum borohydride in devices	4.2	UN2870	I	SPONTANEOUSLY COMBUSTIBLE, DANGEROUS WHEN WET	B11	None	181	244	Forbidden	Forbidden	D		
Aluminum bromide anhydrous	8	UN1725	II	CORROSIVE	B106	154	212	240	15 kg	50 kg	A		40
Aluminum bromide solution	8	UN2580	III	CORROSIVE	T8	154	203	241	5 L	60 L	A		
Aluminum carbide	4.3	UN1394	II	DANGEROUS WHEN WET.	A20, B101, B106, N41	None	212	242	15 kg	50 kg	A		
Aluminum chloride, anhydrous	8	UN1726	II	CORROSIVE	B106	154	212	240	15 kg	50 kg	A		40
Aluminum chloride, solution	8	UN2581	III	CORROSIVE	T8	154	203	241	5 L	60 L	A		
Aluminum dross, wet or hot	Forbidden												
Aluminum ferrosilicon powder	4.3	UN1395	II	DANGEROUS WHEN WET, POISON	A19, B106	None	212	242	15 kg	50 kg	A		40, 85, 103
			III	DANGEROUS WHEN WET, KEEP AWAY FROM FOOD	A19, A20	None	213	241	25 kg	100 kg	A		40, 85, 103
Aluminum hydride	4.3	UN2463	I	DANGEROUS WHEN WET	A19, B100, N40	None	211	242	Forbidden	15 kg	E		
D Aluminum molten	9	NA9260	III	CLASS 9		None	None	247	Forbidden	Forbidden	D		
Aluminum nitrate	5.1	UN1438	III	OXIDIZER	A1, A29	152	213	240	25 kg	100 kg	A		

§172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols (1)	Hazardous materials descriptions and proper shipping names (2)	Hazard class or Division (3)	Identification Numbers (4)	Packing group (5)	Label(s) required (if not excepted) (6)	Special provisions (7)	(8) Packaging authorizations (§173 ***) Exceptions (8A)	Non-bulk packaging (8B)	Bulk packaging (8C)	(9) Quantity limitations Passenger aircraft or railcar (9A)	Cargo aircraft only (9B)	(10) Vessel stowage requirements Vessel stowage (10A)	Other stowage provisions (10B)
	Aluminum phosphate solution see Corrosive liquids, etc.												
	Aluminum phosphide	4.3	UN1397	I	DANGEROUS WHEN WET, POISON.	A8, A19, B100, N40	None	211	242	Forbidden	15 kg	E	40, 85
	Aluminum phosphide pesticides	6.1	UN3048	I	POISON	A8	None	211	242	Forbidden	15 kg	E	40, 85
	Aluminum powder, coated	4.1	UN1309	II	FLAMMABLE SOLID		151	212	240	15 kg	50 kg	A	13, 39, 101
				III	FLAMMABLE SOLID		151	213	240	25 kg	100 kg	A	13, 39, 101
	Aluminum powder, uncoated	4.3	UN1396	II	DANGEROUS WHEN WET	A19, A20, B108	None	212	242	15 kg	50 kg	A	39
				III	DANGEROUS WHEN WET	A19, A20	None	213	241	25 kg	100 kg	A	39
	Aluminum processing by-products	4.3	UN3170	II	DANGEROUS WHEN WET		None	212	242	15 kg	50 kg	B	85, 103
				III	DANGEROUS WHEN WET		None	213	241	25 kg	100 kg	B	85, 103
	Aluminum resinate	4.1	UN2715	III	FLAMMABLE SOLID		151	213	240	25 kg	100 kg	A	
	Aluminum silicon powder, uncoated	4.3	UN1398	III	DANGEROUS WHEN WET	A1, A19	None	213	241	25 kg	100 kg	A	40, 85, 103
	Amatols, see Explosives, blasting type B												
	Amines, flammable, corrosive, n.o.s. *or* Polyamines, flammable, corrosive, n.o.s.	3	UN2733	I	FLAMMABLE LIQUID, CORROSIVE	T42	None	201	243	0.5 L	2.5 L	D	40
				II	FLAMMABLE LIQUID, CORROSIVE	T8, T31	None	202	243	1 L	5 L	B	40
				III	FLAMMABLE LIQUID, CORROSIVE	B1, T8, T31	150	203	242	5 L	60 L	A	40
	Amines, liquid, corrosive, flammable, n.o.s. *or* Polyamines, liquid, corrosive, flammable, n.o.s.	8	UN2734	I	CORROSIVE, FLAMMABLE LIQUID	A3, A6, N34, T8, T31	None	201	243	0.5 L	2.5 L	A	
				II	CORROSIVE, FLAMMABLE LIQUID	T8, T31	None	202	243	1 L	30 L	A	
	Amines, liquid, corrosive, n.o.s. *or* Polyamines, liquid, corrosive, n.o.s.	8	UN2735	I	CORROSIVE	A3, A6, B10, N34, T42	None	201	243	0.5 L	2.5 L	A	
				II	CORROSIVE	B2, T8	154	202	242	1 L	30 L	A	
				III	CORROSIVE	T8	154	203	241	5 L	60 L	A	
	Amines, solid, corrosive, n.o.s., *or* Polyamines, solid, corrosive, n.o.s.	8	UN3259	I	CORROSIVE		None	211	242	1 kg	25 kg	A	
				II	CORROSIVE		154	212	240	15 kg	50 kg	A	
				III	CORROSIVE		154	213	240	25 kg	100 kg	A	
	2-Amino-4-chlorophenol	6.1	UN2673	II	POISON		None	212	242	25 kg	100 kg	A	
	2-Amino-5-diethylaminopentane	6.1	UN2946	III	KEEP AWAY FROM FOOD	T1	153	203	241	60 L	220 L	A	
	2-(2-Aminoethoxy) ethanol	8	UN3055	III	CORROSIVE	T2	154	203	241	5 L	60 L	A	
	N-Aminoethylpiperazine	8	UN2815	III	CORROSIVE	T7	154	203	241	5 L	60 L	A	12
	Aminophenols (*o-, m-, p-*)	6.1	UN2512	III	KEEP AWAY FROM FOOD	T1	153	213	240	100 kg	200 kg	A	
	Aminopropyldiethanolamine see Amines, etc.												
	n-Aminopropylmorpholine see Amines, etc.												
	Aminopyridines (*o-, m-, p-*)	6.1	UN2671	II	POISON	T7	None	212	242	25 kg	100 kg	B	12, 40
I	Ammonia, anhydrous, liquefied *or* Ammonia solutions, *relative density less than 0.880 at 15 degrees C in water, with more than 50 percent ammonia*	2.3	UN1005		POISON GAS, CORROSIVE	4	None	304	314, 315	Forbidden	25 kg	D	40, 57
D	Ammonia, anhydrous, liquefied *or* Ammonia solutions *relative density less than 0.880 at 15 degrees C in water, with more than 50 percent ammonia*	2.2	UN1005		NONFLAMMABLE GAS	T3	None	304	314, 315	Forbidden	25 kg	D	40, 57
	Ammonia solutions, *relative density between 0.880 and 0.957 at 15 degrees C in water, with more than 10 percent but not more than 35 percent ammonia*	8	UN2672	III	CORROSIVE	T14	154	203	241	5 L	60 L	A	40, 85
	Ammonia solutions, *relative density less than 0.880 at 15 degrees C in water, with more than 35 percent but not more than 50 percent ammonia*	2.2	UN2073		NONFLAMMABLE GAS		306	304	314, 315	Forbidden	150 kg	E	40, 57
	Ammonium arsenate	6.1	UN1546	II	POISON		None	212	242	25 kg	100 kg	A	
	Ammonium azide	Forbidden											
	Ammonium bifluoride solid see Ammonium hydrogen difluoride, solid												

	Ammonium bifluoride solution see Ammonium hydrogen difluoride solution												
	Ammonium bromate	Forbidden											
	Ammonium chlorate	Forbidden											
	Ammonium dichromate	5.1	UN1439	II	OXIDIZER		152	212	242	5 kg	25 kg	A	
	Ammonium dinitro-o-cresolate	6.1	UN1843	II	POISON	T8	None	212	242	25 kg	100 kg	B	36, 65, 66, 77,
	Ammonium fluoride	6.1	UN2505	III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A	26
	Ammonium fluorosilicate	6.1	UN2854	III	KEEP AWAY FROM FOOD		153	213	240	100 kg	200 kg	A	26
	Ammonium fulminate	Forbidden											
	Ammonium hydrogen sulfate	8	UN2506	II	CORROSIVE		154	212	240	15 kg	50 kg	A	40
	Ammonium hydrogendifluoride, solid	8	UN1727	II	CORROSIVE	B106, N34	154	212	240	15 kg	50 kg	A	25, 26, 40
	Ammonium hydrogendifluoride solution	8	UN2817	II	CORROSIVE, POISON	N34, T15	None	202	243	1 L	30 L	B	40
				III	CORROSIVE, KEEP AWAY FROM FOOD	T8	154	203	241	5 L	60 L	B	40 95
	Ammonium hydrosulfide solution see Ammonium sulfide solution												
D	Ammonium hydroxide, *see* Ammonia solutions *etc*												
	Ammonium metavanadate	6.1	UN2859	II	POISON		None	212	242	25 kg	100 kg	A	
D	Ammonium nitrate fertilizers	5.1	NA2072	III	OXIDIZER	7	152	213	240	25 kg	100 kg	B	48 59 60, 117
	Ammonium nitrate fertilizers, *uniform non-segregating mixtures of ammonium nitrate with added matter which is inorganic and chemically inert towards ammonium nitrate, with not less than 90 percent ammonium nitrate and not more than 0.2 percent combustible material (including organic material calculated as carbon), or with more than 70 percent but less than 90 percent ammonium nitrate and not more than 0.4 percent total combustible material*	5.1	UN2067	III	OXIDIZER	52	152	213	240	25 kg	100 kg	B	48 59, 60, 117
AW	Ammonium nitrate fertilizers *uniform non-segregating mixtures of nitrogen/phosphate or nitrogen/potash types or complete fertilizers of nitrogen/phosphate/potash type with not more than 70 percent ammonium nitrate and not more than 0.4 percent total added combustible material or with not more than 45 percent ammonium nitrate with unrestricted combustible material*	9	UN2071	III	CLASS 9		155	213	240	200 kg	200 kg	A	
D	Ammonium nitrate-fuel oil mixture *containing only prilled ammonium nitrate and fuel oil*	1.5D	NA0331	II	EXPLOSIVE 1.5D		None	62	None	Forbidden	Forbidden	B	1E 5E
	Ammonium nitrate, liquid *(hot concentrated solution)*	5.1	UN2426		OXIDIZER	B5, B100, T25	None	None	243	Forbidden	Forbidden	D	59 60
D	Ammonium nitrate mixed fertilizers	5.1	NA2069	III	OXIDIZER	16	152	213	240	25 kg	100 kg	B	48 59, 60, 117
	Ammonium nitrate, *with more than 0.2 percent combustible substances, including any organic substance calculated as carbon to the exclusion of any other added substance*	1.1D	UN0222	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E, 19E
	Ammonium nitrate, *with not more than 0.2 percent of combustible substances including any organic substance calculated as carbon, to the exclusion of any other added substance*	5.1	UN1942	III	OXIDIZER	A1, A29	152	213	240	25 kg	100 kg	A	48, 59 60, 116
	Ammonium nitrite	Forbidden											
	Ammonium perchlorate	1.1D	UN0402	II	EXPLOSIVE 1.1D	107	None	62	None	Forbidden	Forbidden	B	1E, 5E, 19E
	Ammonium perchlorate	5.1	UN1442	II	OXIDIZER	107, A9	152	212	242	5 kg	25 kg	E	58, 69 106
	Ammonium permanganate	Forbidden											
	Ammonium persulfate	5.1	UN1444	III	OXIDIZER	A1, A29	152	213	240	25 kg	100 kg	A	
	Ammonium picrate *dry or wetted with less than 10 percent water, by mass*	1.1D	UN0004	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E 5E, 19E
	Ammonium picrate *wetted with not less than 10 percent water, by mass*	4.1	UN1310	I	FLAMMABLE SOLID	23 A2, N41	None	211	None	0.5 kg	0.5 kg	D	26 36
	Ammonium polysulfide solution	8	UN2818	II	CORROSIVE, POISON	T14	None	202	243	1 L	30 L	B	12 26 40
				III	CORROSIVE, KEEP AWAY FROM FOOD	T7	154	203	241	5 L	60 L	B	12 26 40
	Ammonium polyvanadate	6.1	UN2861	II	POISON		None	212	242	25 kg	100 kg	A	
	Ammonium silicofluoride see Ammonium fluorosilicate												
	Ammonium sulfide solution	8	UN2683	II	CORROSIVE, POISON, FLAMMABLE LIQUID	T14	None	202	243	1 L	30 L	B	12, 22, 26, 100
	Ammunition, blank see Cartridges for weapons, blank												
	Ammunition illuminating *with or without burster expelling charge or propelling charge*	1.2G	UN0171	II	EXPLOSIVE 1.2G			62	None	Forbidden	Forbidden	B	
	Ammunition illuminating *with or without burster, expelling charge or propelling charge*	1.3G	UN0254	II	EXPLOSIVE 1.3G			62	None	Forbidden	Forbidden	B	
	Ammunition illuminating *with or without burster, expelling charge or propelling charge*	1.4G	UN0297	II	EXPLOSIVE 1.4G			62	None	Forbidden	75 kg	A	24E
	Ammunition, incendiary *liquid or gel, with burster expelling charge or propelling charge*	1.3J	UN0247	II	EXPLOSIVE 1.3J			62	None	Forbidden	Forbidden	E	7E, 13E, 23E
	Ammunition incendiary (water activated contrivances) with burster expelling charge or propelling charge, see Contrivances water activated etc												

§172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	Packing group	Label(s) required (if not excepted)	Special provisions	(8) Packaging authorizations (§173 ***)			(9) Quantity limitations		(10) Vessel stowage requirements	
							Exceptions	Non-bulk packaging	Bulk packaging	Passenger aircraft or railcar	Cargo aircraft only	Vessel stowage	Other stowage provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Ammunition incendiary, white phosphorus, with burster expelling charge or propelling charge	1.2H	UN0243	II	EXPLOSIVE 1.2H			62	None	Forbidden	Forbidden	E	8E, 14E 15E 17E
	Ammunition incendiary, white phosphorus with burster expelling charge or propelling charge	1.3H	UN0244	II	EXPLOSIVE 1.3H			62	None	Forbidden	Forbidden	E	8E, 14E 15E, 17E
	Ammunition incendiary with or without burster, expelling charge, or propelling charge	1.2G	UN0009	II	EXPLOSIVE 1.2G			62	None	Forbidden	Forbidden	B	
	Ammunition incendiary with or without burster, expelling charge, or propelling charge	1.3G	UN0010	II	EXPLOSIVE 1.3G			62	None	Forbidden	Forbidden	B	
	Ammunition, incendiary with or without burster, expelling charge or propelling charge	1.4G	UN0399	II	EXPLOSIVE 1.4G			62	None	Forbidden	75 kg	A	24F
	Ammunition practice	1.4G	UN0362	II	EXPLOSIVE 1.4G			62	None	Forbidden	75 kg	A	24E
	Ammunition, practice	1.3G	UN0488	II	EXPLOSIVE 1.3G			62	None	Forbidden	Forbidden	B	
	Ammunition, proof	1.4G	UN0363	II	EXPLOSIVE 1.4G			62	None	Forbidden	75 kg	A	24E
	Ammunition, rocket, see Warheads, rocket etc.												
	Ammunition, SA (small arms), see Cartridges for weapons, etc.												
	Ammunition smoke (water-activated contrivances) white phosphorus, with burster, expelling charge or propelling charge, see Contrivances, water-activated, etc. (UN 0248)												
	Ammunition, smoke (water-activated contrivances), without white phosphorus or phosphides, with burster expelling charge or propelling charge see Contrivances, water-activated, etc (UN 0249)												
	Ammunition smoke, white phosphorus with burster,expelling charge, or propelling charge	1.2H	UN0245	II	EXPLOSIVE 1.2H			62	None	Forbidden	Forbidden	E	8E 14E 15E 17E
	Ammunition, smoke, white phosphorus with burster, expelling charge, or propelling charge	1.3H	UN0246	II	EXPLOSIVE 1.3H			62	None	Forbidden	Forbidden	E	8E 14E 15E, 17E
	Ammunition, smoke with or without burster, expelling charge or propelling charge	1.2G	UN0015	II	EXPLOSIVE 1.2G, CORROSIVE			62	None	Forbidden	Forbidden	E	17E 20E
	Ammunition, smoke with or without burster, expelling charge or propelling charge	1.3G	UN0016	II	EXPLOSIVE 1.3G, CORROSIVE.			62	None	Forbidden	Forbidden	E	17E 20E
	Ammunition smoke with or without burster, expelling charge or propelling charge	1.4G	UN0303	II	EXPLOSIVE 1.4G, CORROSIVE.			62	None	Forbidden	75 kg	E	17E, 20E
	Ammunition sporting, see Cartridges for weapons etc (UN 0012; UN 0328, UN 0339)												
	Ammunition tear-producing non-explosive, without burster or expelling charge, non-fuzed	6.1	UN2017	II	POISON, CORROSIVE		None	212	None	Forbidden	50 kg	E	13, 40
	Ammunition, tear-producing with burster, expelling charge or propelling charge	1.2G	UN0018	II	EXPLOSIVE 1.2G, CORROSIVE, POISON			62	None	Forbidden	Forbidden	E	20E
	Ammunition tear-producing with burster, expelling charge or propelling charge	1.3G	UN0019	II	EXPLOSIVE 1.3G, CORROSIVE, POISON.			62	None	Forbidden	Forbidden	E	17E, 20E
	Ammunition, tear-producing with burster, expelling charge or propelling charge	1.4G	UN0301	II	EXPLOSIVE 1.4G, CORROSIVE, POISON.			62	None	Forbidden	75 kg	E	17E, 20E
	Ammunition, toxic non-explosive, without burster or expelling charge non fuzed	6.1	UN2016	II	POISON		None	212	None	Forbidden	100 kg	E	13 40
	Ammunition toxic (water activated contrivances) with burster, expelling charge or propelling charge see Contrivances water-activated etc.												
	Ammunition, toxic with burster, expelling charge or propelling charge	1.2K	UN0020	II	EXPLOSIVE 1.2K, POISON			62	None	Forbidden	Forbidden	E	2E 6E, 11E 17E
	Ammunition, toxic with burster, expelling charge, or propelling charge	1.3K	UN0021	II	EXPLOSIVE 1.3K, POISON.			62	None	Forbidden	Forbidden	E	2E, 6E, 11E, 17E
	Amyl acetates	3	UN1104	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Amyl acid phosphate	8	UN2819	III	CORROSIVE	T7	154	203	241	5 L	60 L	A	
	Amyl alcohols	3	UN1105	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
	[illegible]			III	[illegible]MABLE LIQUID	B1, B3, T1	150	203	242	60 L	220 L	A	

Amyl butyrates	3	UN2620	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A		
Amyl chlorides	3	UN1107	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B		
Amyl formates	3	UN1109	III	FLAMMABLE LIQUID	B1 T1	150	203	242	60 L	220 L	A		
Amyl mercaptans	3	UN1111	II	FLAMMABLE LIQUID	A3, T8	None	202	242	5 L	60 L	B	B5, 102	
Amyl methyl ketone	3	UN1110	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A		
Amyl nitrate	3	UN1112	III	FLAMMABLE LIQUID	B1 T1	150	203	242	60 L	220 L	A	40	
Amyl nitrites	3	UN1113	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	E	40	
Amylamines	3	UN1106	II	FLAMMABLE LIQUID, CORROSIVE	T1	None	202	243	1 L	5 L	B		
			III	FLAMMABLE LIQUID, CORROSIVE	B1	150	203	242	5 L	60 L	A		
n Amylene	3	UN1108	I	FLAMMABLE LIQUID	T14	150	201	243	1 L	30 L	E		
Amyltrichlorosilane	8	UN1728	II	CORROSIVE	A7, B2, B6 N34, T8, T26	None	202	242	Forbidden	30 L	C	40	
Anhydrous ammonia *see Ammonia, anhydrous liquefied*													
Anhydrous hydrofluoric acid see Hydrogen fluoride, anhydrous													
Aniline	6.1	UN1547	II	POISON	T8	None	202	243	5 L	60 L	A	40	
Aniline hydrochloride	6.1	UN1548	III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A		
Aniline oil see Aniline													
Anisidines	6.1	UN2431	III	KEEP AWAY FROM FOOD.	T1	153	203	241	60 L	220 L	A		
Anisole	3	UN2222	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A		
Anisoyl chloride	8	UN1729	II	CORROSIVE	B2, T8	154	202	242	1 L	30 L	C	40	
Anti-freeze, liquid, see Flammable liquids, n.o.s.													
Antimonous chloride, see Antimony trichloride													
Antimony compounds, inorganic, liquid, n.o.s	6.1	UN3141	III	KEEP AWAY FROM FOOD	35, T7	153	203	241	60 L	220 L	A		
Antimony compounds, inorganic, solid, n.o.s.	6.1	UN1549	III	KEEP AWAY FROM FOOD	35	153	213	240	100 kg	200 kg	A		
Antimony lactate	6.1	UN1550	III	KEEP AWAY FROM FOOD		153	213	240	100 kg	200 kg	A		
Antimony pentachloride, liquid	8	UN1730	II	CORROSIVE	B2, T8 T26	None	202	242	1 L	30 L	C	40	
Antimony pentachloride solutions	8	UN1731	II	CORROSIVE	B2, T8, T27	154	202	242	1 L	30 L	C	40	
			III	CORROSIVE	T7, T26	154	203	241	5 L	60 L	C	40	
Antimony pentafluoride	8	UN1732	II	CORROSIVE, POISON	A3, A8, A7, A10, N3, T12, T26	None	202	243	Forbidden	30 L	D	40	
Antimony potassium tartrate	6.1	UN1551	III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A		
Antimony powder	6.1	UN2871	III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A		
Antimony sulfide and a chlorate, mixtures of	Forbidden												
Antimony sulfide, solid, see Antimony compounds inorganic, n.o.s.													
D Antimony tribromide, solid	8	NA1549	II	CORROSIVE		154	212	240	25 kg	100 kg	A	13	
D Antimony tribromide, solution	8	NA1549	II	CORROSIVE	B2	154	202	242	1 L	30 L	C	13	
Antimony trichloride, liquid	8	UN1733	II	CORROSIVE	B2	154	202	242	1 L	30 L	C	40	
Antimony trichloride, solid	8	UN1733	II	CORROSIVE	B106	154	212	240	15 kg	50 kg	A	40	
D Antimony trifluoride, solid	8	NA1549	II	CORROSIVE		154	212	240	25 kg	25 kg	A	13	
D Antimony trifluoride solution	8	NA1549	II	CORROSIVE	B2	154	202	242	1 L	30 L	C	13	
Aqua ammonia, see Ammonia solution, *etc.*													
Argon, compressed	2.2	UN1006		NONFLAMMABLE GAS		306	302	314, 315	75 kg	150 kg	A		
Argon, refrigerated liquid *(cryogenic liquid)*	2.2	UN1951		NONFLAMMABLE GAS		320	316	318	50 kg	500 kg	B		
Arsenic	6.1	UN1558	II	POISON		None	212	242	25 kg	100 kg	A		
Arsenic acid, liquid	6.1	UN1553	I	POISON	T18, T27	None	201	243	1 L	30 L	B	46	
Arsenic acid solid	6.1	UN1554	II	POISON		None	212	242	25 kg	100 kg	A		
Arsenic bromide	6.1	UN1555	II	POISON		None	212	242	25 kg	100 kg	A	12, 40	
Arsenic chloride, see Arsenic trichloride													
Arsenic compounds, liquid, n.o.s *including arsenates n.o.s., arsenites, n.o.s., arsenic sulfides, n.o.s., and organic compounds of arsenic, n.o.s*	6.1	UN1556	I	POISON		None	201	243	1 L	30 L	B	40	
			II	POISON		None	202	243	5 L	60 L	B	40	
			III	KEEP AWAY FROM FOOD.		153	203	241	60 L	220 L	B	40	
Arsenic compounds, solid, n.o.s *including arsenates, n.o.s., arsenites, n.o.s., arsenic sulfides, n.o.s. and organic compounds of arsenic, n.o.s*	6.1	UN1557	I	POISON		None	211	242	5 kg	50 kg	A		
			II	POISON		None	212	242	25 kg	100 kg	A		
			III	KEEP AWAY FROM FOOD		153	213	240	100 kg	200 kg	A		
Arsenic pentoxide	6.1	UN1559	II	POISON		None	212	242	25 kg	100 kg	A		
D Arsenic sulfide	6.1	NA1557	II	POISON		None	212	242	25 kg	100 kg	A		
Arsenic sulfide and a chlorate, mixtures of	Forbidden												
Arsenic trichloride	6.1	UN1560	I	POISON	2 B9, B14 B32, B74, T38, T43, T45	None	227	244	Forbidden	Forbidden	B	40	
Arsenic trioxide	6.1	UN1561	II	POISON		None	212	242	25 kg	100 kg	A		

§172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	Packing group	Label(s) required (if not excepted)	Special provisions	(8) Packaging authorizations (§173 ***) Exceptions	Non-bulk packaging	Bulk packaging	(9) Quantity limitations Passenger aircraft or rail car	Cargo aircraft only	(10) Vessel stowage requirements Vessel stowage	Other stowage provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
D	Arsenic trisulfide	6.1	NA1557	II	POISON		None	212	242	25 kg	100 kg	A	
	Arsenic white solid, see Arsenic trioxide												
	Arsenical dust	6.1	UN1562	II	POISON		None	212	242	25 kg	100 kg	A	
	Arsenical pesticides, liquid, flammable, toxic, flash point less than 23 degrees C	3	UN2760	I	FLAMMABLE LIQUID, POISON		None	201	243	Forbidden	30 L	B	40
				II	FLAMMABLE LIQUID, POISON		None	202	243	1 L	60 L	B	40
				III	FLAMMABLE LIQUID, KEEP AWAY FROM FOOD	81	150	203	242	60 L	220 L	B	40
	Arsenical pesticides, liquid toxic	6.1	UN2994	I	POISON	T42	None	201	243	1 L	30 L	B	40
				II	POISON	T14	None	202	243	5 L	60 L	B	40
				III	KEEP AWAY FROM FOOD.	T14	153	203	241	60 L	220 L	A	40
	Arsenical pesticides, liquid, toxic, flammable flashpoint not less than 23 degrees C	6.1	UN2993	I	POISON, FLAMMABLE LIQUID	T42	None	201	243	1 L	30 L	B	40
				II	POISON, FLAMMABLE LIQUID.	T14	None	202	243	5 L	60 L	B	40
				III	KEEP AWAY FROM FOOD, FLAMMABLE LIQUID	81, T14	153	203	242	60 L	220 L	A	40
	Arsenical pesticides, solid, toxic	6.1	UN2759	I	POISON		None	211	242	5 kg	50 kg	A	40
				II	POISON		None	212	242	25 kg	100 kg	A	40
				III	KEEP AWAY FROM FOOD		153	213	240	100 kg	200 kg	A	40
	Arsenious acid, solid, see Arsenic trioxide												
	Arsenious and mercuric iodide solution, see Arsenic compounds, liquid, n.o.s.												
	Arsine	2.3	UN2188		POISON GAS, FLAMMABLE GAS		None	192	245	Forbidden	Forbidden	D	40
	Articles, explosive, extremely insensitive or Articles, EEI	1.6N	UN0486	II	EXPLOSIVE 1.6N	101	None	62	None	Forbidden	Forbidden	B	
	Articles explosive n.o.s.	1.4S	UN0349	II	EXPLOSIVE 1.4S	101	None	62	None	25 kg	100 kg	A	
	Articles, explosive, n.o.s.	1.4B	UN0360	II	EXPLOSIVE 1.4B	101	None	62	None	Forbidden	Forbidden	A	24E
	Articles explosive, n.o.s.	1.4C	UN0351	II	EXPLOSIVE 1.4C	101	None	62	None	Forbidden	Forbidden	A	24E
	Articles, explosive, n.o.s.	1.4D	UN0352	II	EXPLOSIVE 1.4D	101	None	62	None	Forbidden	Forbidden	A	24E
	Articles, explosive, n.o.s.	1.4G	UN0353	II	EXPLOSIVE 1.4G	101	None	62	None	Forbidden	Forbidden	A	24E
	Articles, explosive n.o.s.	1.1L	UN0354	II	EXPLOSIVE 1.1L	101	None	62	None	Forbidden	Forbidden	E	2E 6E, 11E 17E
	Articles, explosive, n.o.s.	1.2L	UN0355	II	EXPLOSIVE 1.2L	101	None	62	None	Forbidden	Forbidden	E	2E 6E 11E, 17E
	Articles, explosive, n.o.s.	1.3L	UN0356	II	EXPLOSIVE 1.3L	101	None	62	None	Forbidden	Forbidden	E	2E 6E 11E 17E
	Articles explosive n.o.s.	1.1C	UN0462	II	EXPLOSIVE 1.1C	101	None	62	None	Forbidden	Forbidden	B	
	Articles, explosive, n.o.s.	1.1D	UN0463	II	EXPLOSIVE 1.1D	101	None	62	None	Forbidden	Forbidden	B	
	Articles explosive, n.o.s.	1.1E	UN0464	II	EXPLOSIVE 1.1E	101	None	62	None	Forbidden	Forbidden	B	
	Articles, explosive, n.o.s.	1.1F	UN0465	II	EXPLOSIVE 1.1F	101	None	62	None	Forbidden	Forbidden	E	
	Articles explosive, n.o.s.	1.2C	UN0466	II	EXPLOSIVE 1.2C	101	None	62	None	Forbidden	Forbidden	B	
	Articles, explosive, n.o.s.	1.2D	UN0467	II	EXPLOSIVE 1.2D	101	None	62	None	Forbidden	Forbidden	B	
	Articles explosive n.o.s.	1.2E	UN0468	II	EXPLOSIVE 1.2E	101	None	62	None	Forbidden	Forbidden	B	
	Articles, explosive, n.o.s.	1.2F	UN0469	II	EXPLOSIVE 1.2F	101	None	62	None	Forbidden	Forbidden	E	
	Articles explosive, n.o.s.	1.3C	UN0470	II	EXPLOSIVE 1.3C	101	None	62	None	Forbidden	Forbidden	B	
	Articles, explosive, n.o.s.	1.4E	UN0471	II	EXPLOSIVE 1.4E	101	None	62	None	Forbidden	75 kg	A	24E
	Articles explosive, n.o.s.	1.4F	UN0472	II	EXPLOSIVE 1.4F	101	None	62	None	Forbidden	Forbidden	E	
	Articles, pressurized pneumatic or Hydraulic containing non-flammable gas	2.2	UN3164		NONFLAMMABLE GAS		306	302, 304	None	No limit	No limit	A	
	Articles, pyrophoric	1.2L	UN0380	II	EXPLOSIVE 1.2L		None	62	None	Forbidden	Forbidden	E	2E 6E 11E 17E
	Articles, pyrotechnic for technical purposes	1.1G	UN0428	II	EXPLOSIVE 1.1G		None	62	None	Forbidden	Forbidden	B	
	Articles pyrotechnic for technical purposes	1.2G	UN0429	II	EXPLOSIVE 1.2G		None	62	None	Forbidden	Forbidden	B	
	Articles, pyrotechnic for technical purposes	1.3G	UN0430	II	EXPLOSIVE 1.3G		None	62	None	Forbidden	Forbidden	B	
	Articles pyrotechnic for technical purposes	1.4G	UN0431	II	EXPLOSIVE 1.4G		None	62	None	Forbidden	75 kg	A	24E

	Articles pyrotechnic for technical purposes	1.4G	UN0432	II	EXPLOSIVE 1.4S		None	62	None	25 kg	100 kg	A		
D	Asbestos	9	NA2212	III	CLASS 9		156	216	240	200 kg	200 kg	A	34, 40	
	Ascandole (organic peroxide)	Forbidden												
D	Asphalt, at or above its flashpoint	3	NA1999	III	FLAMMABLE LIQUID		150	203	247	Forbidden	Forbidden	D		
D	Asphalt, cut back, see Tars liquid etc													
	Automobile motorcycle tractor, or other self-propelled vehicle engine or other mechanical apparatus, see Engines or Battery etc													
	Azaurolic acid (salt of) (dry)	Forbidden												
	Azido guanidine picrate (dry)	Forbidden												
	6-Azido-1-hydroxy tetrazole	Forbidden												
	Azido hydroxy tetrazole (mercury and silver salts)	Forbidden												
	3-Azido-1,2-Propylene glycol dinitrate	Forbidden												
	Azidodithiocarbonic acid	Forbidden												
	Azidoethyl nitrate	Forbidden												
	1-Aziridinylphosphine oxide-(tris), see Tris (1-aziridinyl) phosphine oxide, solution													
	Azotetrazole (dry)	Forbidden												
	Barium	4.3	UN1400	II	DANGEROUS WHEN WET	A19, B100	None	212	241	16 kg	50 kg	B		
	Barium alloys, pyrophoric	4.2	UN1854	I	SPONTANEOUSLY COMBUSTIBLE.		None	181	None	Forbidden	Forbidden	D		
	Barium azide, dry or wetted with less than 50 percent water, by mass	1.1A	UN0224	II	EXPLOSIVE 1.1A, POISON.	111, 117	None	62	None	Forbidden	Forbidden	E		2E 6E
	Barium azide, wetted with not less than 50 percent water by mass	4.1	UN1571	I	FLAMMABLE SOLID, POISON	A2	None	182	None	Forbidden	0.5 kg	D	28	
	Barium bromate	5.1	UN2719	II	OXIDIZER, POISON		None	212	242	5 kg	25 kg	A		56 58 106
	Barium chlorate	5.1	UN1445	II	OXIDIZER, POISON	A9, N34, T8	None	212	242	5 kg	25 kg	A		56, 58 106
	Barium compounds, n.o.s	6.1	UN1564	II	POISON		None	212	242	25 kg	100 kg	A		
				III	KEEP AWAY FROM FOOD		153	213	240	100 kg	200 kg	A		
	Barium cyanide	6.1	UN1884	I	POISON	N74, N76	None	211	242	5 kg	50 kg	A		26, 40
	Barium hypochlorite with more than 22 percent available chlorine	5.1	UN2741	II	OXIDIZER, POISON	A7, A9, N34	152	212	None	5 kg	25 kg	B		56, 58, 106
	Barium nitrate	5.1	UN1446	II	OXIDIZER, POISON		None	212	242	5 kg	25 kg	A		
	Barium oxide	6.1	UN1884	III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A		
	Barium perchlorate	5.1	UN1447	II	OXIDIZER, POISON	T8	None	212	242	5 kg	25 kg	A		56 58 106
	Barium permanganate	5.1	UN1448	II	OXIDIZER, POISON		None	212	242	5 kg	25 kg	D		56 58, 69
	Barium peroxide	5.1	UN1449	II	OXIDIZER, POISON		None	212	242	5 kg	25 kg	A		106, 107 13 75, 106
	Barium selenate, see Selenates or Selenites													
	Barium selenite see Selenates or Selenites													
D	Barium styphnate	1.1A	NA0473	II	EXPLOSIVE 1.1A	111, 117	None	62	None	Forbidden	Forbidden	E		2E 6E
	Batteries, containing sodium	4.3	UN3292	II	DANGEROUS WHEN WET.		189	189	189	Forbidden	No limit	A		
	Batteries dry, containing potassium hydroxide solid, electric storage	8	UN3028	III	CORROSIVE		None	213	None	25 kg gross	230 kg gross	A		
	Batteries, wet, filled with acid, electric storage	8	UN2794	III	CORROSIVE		159	159	159	25 kg gross	No limit	A		
	Batteries, wet, filled with alkali electric storage	8	UN2795	III	CORROSIVE		159	159	159	25 kg gross	No limit	A		
	Batteries, wet, non-spillable electric storage	8	UN2800	III	CORROSIVE		159	159	159	No Limit	No Limit	A		
	Battery, dry, not subject to the requirements of this subchapter													
	Battery fluid, acid	8	UN2796	II	CORROSIVE	A3, A7, B2, B15 N6, N34, T9, T27	154	202	242	1 L	30 L	B		
	Battery fluid alkali	8	UN2797	II	CORROSIVE	B2, N6, T8	154	202	242	1 L	30 L	A		
	Battery lithium type, see Lithium batteries etc													
	Battery-powered vehicle or Battery-powered equipment wet battery	9	UN3171		CLASS 9		220	220	None	No limit	No limit	A		
	Battery, wet, filled with acid or alkali with automobile (or named self-propelled vehicle or mechanical equipment containing internal combustion engine) see Vehicles self propelled etc													
	Battery wet, with wheelchair, see Wheelchair, electric													
	Benzaldehyde	9	UN1990	III	CLASS 9		155	203	241	100 L	220 L	A		
	Benzene	3	UN1114	II	FLAMMABLE LIQUID	B101, T8	150	202	242	5 L	60 L	B	40	
	Benzene diazonium chloride (dry)	Forbidden												
	Benzene diazonium nitrate (dry)	Forbidden												
	Benzene phosphorus dichloride see Phenyl phosphorus dichloride													
	Benzene phosphorus thiodichloride see Phenyl phosphorus thiodichloride													
	Benzene sulfonyl chloride	8	UN2225	III	CORROSIVE	T8	154	203	241	5 L	60 L	A	40	
	Benzene trisonide	Forbidden												
	Benzenethiol see Phenyl mercaptan													
	Benzidine	6.1	UN1885	II	POISON		None	212	242	25 kg	100 kg	A		
	Benzoic derivative pesticides liquid, flammable toxic flash point less than 23 degrees C	3	UN2770	I	FLAMMABLE LIQUID, POISON		None	201	243	Forbidden	30 L	E		
				II	FLAMMABLE LIQUID, POISON		None	202	243	1 L	60 L	B	40	
				III	FLAMMABLE LIQUID, KEEP AWAY FROM FOOD	B1	150	203	242	60 L	220 L	B	40	

§172 101 HAZARDOUS MATERIALS TABLE—Continued

Symbols (1)	Hazardous materials descriptions and proper shipping names (2)	Hazard class or Division (3)	Identification Numbers (4)	Packing group (5)	Label(s) required (if not excepted) (6)	Special provisions (7)	(8) Packaging authorizations (§173) Exceptions (8A)	Non bulk packaging (8B)	Bulk packaging (8C)	(9) Quantity limitations Passenger aircraft or railcar (9A)	Cargo aircraft only (9B)	(10) Vessel stowage requirements Vessel stowage (10A)	Other stowage provisions (10B)
	Benzoic derivative pesticides liquid toxic	6 1	UN3004	I	POISON	T42	None	201	243	1 L	30 L	B	40
				II	POISON	T14	None	202	243	5 L	60 L	B	40
				III	KEEP AWAY FROM FOOD.	T14	153	203	241	60 L	220 L	A	40
	Benzoic derivative pesticides liquid toxic flammable *flashpoint not less than 23 degrees C*	6 1	UN3003	I	POISON, FLAMMABLE LIQUID	T42	None	201	243	1 L	30 L	B	40
				II	POISON, FLAMMABLE LIQUID	T14	None	202	243	5 L	60 L	B	40
				III	KEEP AWAY FROM FOOD, FLAMMABLE LIQUID	T14	153	203	242	60 L	220 L	A	40
	Benzoic derivative pesticides solid toxic	6 1	UN2769	I	POISON		None	211	242	5 kg	50 kg	A	40
				II	POISON		None	212	242	25 kg	100 kg	A	40
				III	KEEP AWAY FROM FOOD		153	213	240	100 kg	200 kg	A	40
	Benzol see Benzene												
	Benzonitrile	6 1	UN2224	II	POISON	T14	None	202	243	5 L	60 L	A	26 40
	Benzoquinone	6 1	UN2587	II	POISON		None	212	242	25 kg	100 kg	A	
	Benzotrichloride	8	UN2226	II	CORROSIVE	B2, B101, T15	154	202	242	1 L	30 L	A	40
	Benzotrifluoride	3	UN2338	II	FLAMMABLE LIQUID	T2	150	202	242	5 L	60 L	B	40
	Benzotrichlorides (dry)	Forbidden											
	Benzoyl azide	Forbidden											
	Benzoyl chloride	8	UN1736	II	CORROSIVE	B2 T9 T26	154	202	242	1 L	30 L	C	40
	Benzyl bromide	6 1	UN1737	II	POISON, CORROSIVE	A3, A7, N33, N34, T12 T26	None	202	243	1 L	30 L	D	13 40
	Benzyl chloride	6 1	UN1738	II	POISON, CORROSIVE	A3 A7 B41 B70, N33, N43, T12, T26	None	202	243	1 L	30 L	D	13 40
	Benzyl chloride *unstabilized*	6 1	UN1738	II	POISON, CORROSIVE	A3 A7 B8 B11, N33, N34, N43, T12, T26	None	202	243	1 L	30 L	D	13, 40
	Benzyl chlorofomate	8	UN1739	I	CORROSIVE	A3, A8 B4 N41, T18, T26.	None	201	243	Forbidden	2 5 L	D	40
	Benzyl iodide	6 1	UN2653	II	POISON	T8	None	202	243	5 L	60 L	B	12 40
	Benzyldimethylamine	8	UN2619	II	CORROSIVE, FLAMMABLE LIQUID	B2, T8	154	202	243	1 L	30 L	A	40 48
	Benzylidene chloride	6 1	UN1886	II	POISON	T8	None	202	243	5 L	60 L	D	40
	Beryllium compounds n o s	6 1	UN1566	II	POISON		None	212	242	25 kg	100 kg	A	
				III	KEEP AWAY FROM FOOD		153	213	240	100 kg	200 kg	A	
	Beryllium nitrate	5 1	UN2464	II	OXIDIZER, POISON		None	212	242	5 kg	25 kg	A	
	Beryllium powder	6 1	UN1567	II	POISON, FLAMMABLE SOLID		None	212	242	15 kg	50 kg	A	
	Biphenyl mazonide	Forbidden											
	Bipyridium pesticides liquid flammable toxic *flash point less than 23 degrees C*	3	UN2782	I	FLAMMABLE LIQUID, POISON		None	201	243	Forbidden	30 L	E	
				II	FLAMMABLE LIQUID, POISON		None	202	243	1 L	60 L	B	40
				III	FLAMMABLE LIQUID, KEEP AWAY FROM FOOD	B1	150	203	242	60 L	220 L	B	40
	Bipyridium pesticides liquid toxic	6.1	UN3016	I	POISON	T42	None	201	243	1 L	30 L	B	40
				II	POISON	T14	None	202	243	5 L	60 L	B	40
				III	KEEP AWAY FROM FOOD	T14	153	203	241	60 L	220 L	A	40
	Bipyridium pesticides liquid toxic flammable *flashpoint not less than 23 degrees C*	6 1	UN3015	I	POISON, FLAMMABLE LIQUID	T42	None	201	243	1 L	30 L	B	21, 40
				II	POISON FLAMMABLE LIQUID	T14	None	202	243	5 L	60 L	B	21, 40

			III	KEEP AWAY FROM FOOD, FLAMMABLE LIQUID.	B1, T14	153	203	242	60 L	220 L	A	21 40
Bipyridilium pesticides, solid, toxic	6.1	UN2781	I	POISON		None	211	242	5 kg	50 kg	A	40
			II	POISON		None	212	242	25 kg	100 kg	A	40
			III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A	40
Bis (Aminopropyl) piperazine, see Corrosive liquid, n o s												
Bisulfate, aqueous solution	8	UN2837	II	CORROSIVE	A7, B2, N34, T8, T28.	154	202	242	1 L	30 L	A	
			III	CORROSIVE	A7, N34, T7, T26	154	203	241	5 L	60 L	A	
Bisulfites aqueous solutions, n o.s	8	UN2693	III	CORROSIVE	T8	154	203	241	1 L	30 L	A	86, 40
Black powder, compressed *or* Gunpowder, compressed *or* Black powder, in pellets *or* Gunpowder in pellets	1 1D	UN0026	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E
Black powder or Gunpowder, *granular or as a meal*	1 1D	UN0027	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	10E, 26E
Blasting agent n o.s , see Explosives, blasting *etc.*												
Blasting cap assemblies, see Detonator assemblies, non-electric, *for blasting*												
Blasting caps, electric, see Detonators, electric *for blasting*												
Blasting caps, non-electric, see Detonators, non-electric, *for blasting*												
Bleaching powder, see Calcium hypochlorite mixtures, *etc.*												
Blue asbestos *(Crocidolite)* or Brown asbestos *(amosite, mysorite)*	9	UN2212	II	CLASS 9		155	216	240	Forbidden	Forbidden	A	34, 40
Bombs, photo-flash	1 1F	UN0037	II	EXPLOSIVE 1.1F			62	None	Forbidden	Forbidden	E	
Bombs, photo-flash	1.1D	UN0038	II	EXPLOSIVE 1.1D			62	None	Forbidden	Forbidden	B	
Bombs, photo-flash	1.2G	UN0039	II	EXPLOSIVE 1.2G			62	None	Forbidden	Forbidden	B	
Bombs, photo-flash	1 3G	UN0299	II	EXPLOSIVE 1.3G			62	None	Forbidden	Forbidden	B	
Bombs, smoke, non-explosive, *with corrosive liquid, without initiating device*	8	UN2028	II	CORROSIVE		None	160	None	Forbidden	50 kg	E	40
Bombs, *with bursting charge*	1 1F	UN0033	II	EXPLOSIVE 1 1F			62	None	Forbidden	Forbidden	E	
Bombs, *with bursting charge*	1.1D	UN0034	II	EXPLOSIVE 1.1D			62	None	Forbidden	Forbidden	B	3E 7E
Bombs, *with bursting charge*	1.2D	UN0035	II	EXPLOSIVE 1.2D			62	None	Forbidden	Forbidden	B	3E, 7E
Bombs *with bursting charge*	1.2F	UN0291	II	EXPLOSIVE 1.2F			62	None	Forbidden	Forbidden	E	
Bombs with flammable liquid, *with bursting charge*	1 1J	UN0399	II	EXPLOSIVE 1.1J			62	None	Forbidden	Forbidden	E	7E 16E, 23E
Bombs with flammable liquid, *with bursting charge*	1.2J	UN0400	II	EXPLOSIVE 1.2J			62	None	Forbidden	Forbidden	E	7E 16E, 23E
D Boosters with detonator	1.4B	NA0350	II	EXPLOSIVE 1.4B	115	None	62	None	Forbidden	75 kg	A	24E
Boosters with detonator	1 1B	UN0225	II	EXPLOSIVE 1.1B		None	62	None	Forbidden	Forbidden	B	2E, 6E
Boosters with detonator	1.2B	UN0268	II	EXPLOSIVE 1.2B		None	62	None	Forbidden	Forbidden	E	1E, 7E
Boosters without detonator	1.1D	UN0042	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	
Boosters, without detonator	1.2D	UN0283	II	EXPLOSIVE 1.2D		None	62	None	Forbidden	Forbidden	B	
Borate and chlorate mixtures see Chlorate and borate mixtures												
Borneol	4 1	UN1312	III	FLAMMABLE SOLID	A1	None	213	240	25 kg	100 kg	A	
+ Boron tribromide	8	UN2692	I	CORROSIVE, POISON	2, A3, A7, B9, B14, B32, B74, N34 T38, T43 T45	None	227	244	Forbidden	2.5 L	C	12
Boron trichloride	2.3	UN1741		POISON GAS, CORROSIVE	3, 25, B9, B14	None	304	314	Forbidden	Forbidden	D	25 40
Boron trifluoride	2.3	UN1008		POISON GAS	2, B9, B14	None	302	314, 315	Forbidden	Forbidden	D	40
Boron trifluoride acetic acid complex	8	UN1742	II	CORROSIVE	B4, B6, T9, T27	154	202	242	1 L	30 L	A	
Boron trifluoride diethyl etherate	8	UN2604	I	CORROSIVE, FLAMMABLE LIQUID.	A19, T8, T26	None	201	243	0.5 L	2 5 L	D	40
Boron trifluoride dihydrate	8	UN2851	II	CORROSIVE	T9, T27	154	212	240	15 kg	50 kg	B	12 40
Boron trifluoride dimethyl etherate	4 3	UN2965	I	DANGEROUS WHEN WET, CORROSIVE, FLAMMABLE LIQUID.	A19, T12, T26	None	201	243	Forbidden	1 L	D	21 28 40 49, 100
Boron trifluoride propionic acid complex	8	UN1743	II	CORROSIVE	B4, T9, T27	154	202	242	1 L	30 L	A	
Box ice gum, see Nitrocellulose *etc.*												
Bromates inorganic, aqueous solution, n.o s	5 1	UN3213	II	OXIDIZER	T8	152	202	242	1 L	5 L	B	58, 58, 106
Bromates, inorganic, n o.s	5.1	UN1450	II	OXIDIZER		152	212	242	5 kg	25 kg	A	58, 58 106
Bromine azide	Forbidden											
+ Bromine or Bromine solutions	8	UN1744	I	CORROSIVE, POISON	1, A3, A6, B9, B12, B64, B85, N34, N43, T18, T41.	None	226	249	Forbidden	2 5 L	D	12, 40 58 74 89 90
Bromine chloride	2 3	UN2901		POISON GAS, CORROSIVE, OXIDIZER	2, B9, B12, B14	None	304	314 315	Forbidden	Forbidden	D	40, 69, 90
+ Bromine pentafluoride	5.1	UN1745	I	OXIDIZER, POISON, CORROSIVE,	1, B9, B14, B30, B72, T38, T43, T44	None	229	244	Forbidden	Forbidden	D	85 40, 66 90
Bromine trifluoride	5 1	UN1746	I	OXIDIZER, POISON, CORROSIVE	2, B9, B14, B32, B74 T38, T43, T45, T46.	None	229	244	Forbidden	Forbidden	D	25, 40, 66, 90

§172 101 HAZARDOUS MATERIALS TABLE—Continued

Symbols (1)	Hazardous materials descriptions and proper shipping names (2)	Hazard class or Division (3)	Identification Numbers (4)	Packing group (5)	Label(s) required (if not excepted) (6)	Special provisions (7)	(8) Packaging authorizations (§173 ***) Exceptions (8A)	Non bulk packaging (8B)	Bulk packaging (8C)	(9) Quantity limitations Passenger aircraft or railcar (9A)	Cargo aircraft only (9B)	(10) Vessel stowage requirements Vessel stowage (10A)	Other stowage provisions (10B)
	4-Bromo-1 2-dinitrobenzene	Forbidden											
	4 Bromo-1 2-dinitrobenzene (unstable at 59 degrees C)	Forbidden											
	1-Bromo-3-methylbutane	3	UN2341	III	FLAMMABLE LIQUID	B1 T7, T30	150	203	242	60 L	220 L	A	
	1-Bromo-3-nitrobenzene (unstable at 55 degrees C)	Forbidden											
	2-Bromo-2-nitropropane-1,3-diol	6 1	UN3241	III	KEEP AWAY FROM FOOD	48	153	213	240	50 kg	50 kg	C	12 25 40
	Bromoacetic acid *solid*	8	UN1938	II	CORROSIVE	A7 N34, T9	154	212	240	15 kg	50 kg	A	
	Bromoacetic acid *solution*	8	UN1938	II	CORROSIVE	B2, T9	154	202	242	1 L	30 L	A	40
+	Bromoacetone	6.1	UN1569	II	POISON	2	None	193	245	Forbidden	Forbidden	D	40
	Bromoacetyl bromide	8	UN2513	II	CORROSIVE	B2, T9, T26	154	202	242	1 L	30 L	C	40
	Bromobenzene	3	UN2514	III	FLAMMABLE LIQUID	B1 T1	150	203	242	60 L	220 L	A	
	Bromobenzyl cyanides *liquid*	6.1	UN1694	I	POISON	T18	None	201	243	Forbidden	30 L	D	12 40
	Bromobenzyl cyanides, *solid*	6.1	UN1694	I	POISON	T18	None	211	242	Forbidden	50 kg	D	12 40
	2-Bromobutane	3	UN2339	II	FLAMMABLE LIQUID	B1, T1	150	202	242	5 L	60 L	B	40
	Bromochloromethane	6 1	UN1887	III	KEEP AWAY FROM FOOD.	T7	153	203	241	60 L	220 L	A	
	2-Bromoethyl ethyl ether	3	UN2340	II	FLAMMABLE LIQUID	T7	150	202	242	5 L	60 L	B	40
	Bromoform	6 1	UN2515	III	KEEP AWAY FROM FOOD	T7	153	203	241	60 L	220 L	A	12, 40
	Bromomethylpropanes	3	UN2342	II	FLAMMABLE LIQUID	T7, T30	150	202	242	5 L	60 L	B	
	2-Bromopentane	3	UN2343	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
	2-Bromopropanes	3	UN2344	II	FLAMMABLE LIQUID	T7	150	202	242	5 L	60 L	B	40
	3-Bromopropyne	3	UN2345	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	D	40
	Bromosilane	Forbidden											
	Bromotoluene-alpha, see Benzyl bromide												
	Bromotrifluoroethylene	2 1	UN2419		FLAMMABLE GAS		None	304	314, 315	Forbidden	150 kg	B	40
	Bromotrifluoromethane *R13B1*	2 2	UN1009		NONFLAMMABLE GAS		306	304	314, 315	75 kg	150 kg	A	
	Brucine	6 1	UN1570	I	POISON		None	211	242	5 kg	50 kg	A	
	Bursters *explosive*	1 1D	UN0043	II	EXPLOSIVE 1 1D		None	62	None	Forbidden	Forbidden	B	
	Butadienes *inhibited*	2 1	UN1010		FLAMMABLE GAS		306	304	314, 315	Forbidden	150 kg	B	40
	Butane or Butane mixtures *see also* Petroleum gases liquefied	2 1	UN1011		FLAMMABLE GAS	19	306	304	314, 315	Forbidden	150 kg	E	40
	Butane butane mixtures and mixtures having similar properties in cartridges each not exceeding 500 grams see Receptacles, etc												
	Butanedione	3	UN2346	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
	1,2 4-Butanetriol trinitrate	Forbidden											
	Butanols	3	UN1120	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
				III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	tert-Butoxycarbonyl azide	Forbidden											
	Butoxyl	3	UN2708	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Butyl acetates	3	UN1123	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
				III	FLAMMABLE LIQUID	B1 T1	150	203	242	60 L	220 L	A	
	Butyl acid phosphate	8	UN1718	III	CORROSIVE	T7	154	203	241	5 L	60 L	A	
	Butyl alcohols see Butanols												
	Butyl benzenes	3	UN2709	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	n-Butyl bromide	3	UN1126	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	40
	n-Butyl chloride see Chlorobutanes												
D	sec-Butyl chloroformate	6 1	NA2742	I	POISON FLAMMABLE LIQUID, CORROSIVE	2 B9 B14, B32, B74, T38, T43, T45.	None	227	244	1 L	30 L	A	12, 13 22 25 40, 48 100
	n-Butyl chloroformate	6 1	UN2743	I	POISON CORROSIVE	2 B9, B14 B32, B74, T38 T43, T45	None	227	244	1 L	30 L	A	12 13 21 25 40, 100
	Butyl ethers see Dibutyl ethers												
	Butyl ethyl ether see Ethyl butyl ether												
	n Butyl formate												
	tert-Butyl hydroperoxide with more than 90 percent with water	3	UN1128	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
	tert Butyl hypochlorite	Forbidden											
		4 2	UN3255		SPONTANEOUSLY COMBUSTIBLE, CORROSIVE		None	211	243	Forbidden	Forbidden	D	

N-n Butyl imidazole	6.1	UN2690	II	POISON	T8	None	202	243	5 L	60 L	A		
tert-Butyl isocyanate	6.1	UN2484	I	POISON, FLAMMABLE LIQUID	1, A7, B9, B14, B30 B72, T38, T43 T44	None	226	244	Forbidden	Forbidden	D	40	
n-Butyl isocyanate	6.1	UN2485	I	POISON, FLAMMABLE LIQUID	1 A7, B9 B14, B30, B72, B77, T38, T43, T44	None	226	244	Forbidden	30 L	D	40	
Butyl mercaptans	3	UN2347	II	FLAMMABLE LIQUID	A3, T8	150	202	242	5 L	60 L	D	26, 95	
n-Butyl methacrylate	3	UN2227	III	FLAMMABLE LIQUID	B1 T1	150	203	242	60 L	220 L	A		
Butyl methyl ether	3	UN2350	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	B		
Butyl nitrites	3	UN2351	I	FLAMMABLE LIQUID	T8	150	201	243	1 L	30 L	E	40	
			II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	B	40	
			III	FLAMMABLE LIQUID	B1, T8	150	203	242	60 L	220 L	A	40	
tert-Butyl peroxyacetate with more than 76 percent in solution	Forbidden												
n-Butyl peroxydicarbonate, with more than 52 percent in solution	Forbidden												
tert-Butyl peroxyisobutyrate, with more than 77 percent in solution	Forbidden												
Butyl phosphonic acid see Butyl acid phosphate													
5-tert-Butyl-2 4,6-trinitro-m-xylene or Musk xylene	4.1	UN2956	III	FLAMMABLE SOLID		None	214	None	Forbidden	Forbidden	D	12	
Butyl vinyl ether, inhibited	3	UN2352	II	FLAMMABLE LIQUID	B101, T7	150	202	242	5 L	60 L	B	40	
Butylacrylate	3	UN2348	III	FLAMMABLE LIQUID	B1, T8, T31	150	203	242	60 L	220 L	A		
n-Butylamine	3	UN1125	II	FLAMMABLE LIQUID, CORROSIVE	B101, T8	None	202	242	1 L	5 L	B	40	
N-Butylaniline	6.1	UN2738	II	POISON	T8	None	202	243	5 L	60 L	A		
tert-Butylcyclohexylchloroformate	6.1	UN2747	III	KEEP AWAY FROM FOOD	T8	153	203	241	60 L	220 L	A	12, 13, 25	
Butylene see also Petroleum gases, liquefied	2.1	UN1012		FLAMMABLE GAS	19	None	304	314, 315	Forbidden	150 kg	E	40	
1,2-Butylene oxide, stabilized	3	UN3022	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	B	49	
Butylpropionate	3	UN1914	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A		
Butyltoluenes	6.1	UN2667	III	KEEP AWAY FROM FOOD	T2	153	203	241	60 L	220 L	A		
Butyltrichlorosilane	8	UN1747	II	CORROSIVE, FLAMMABLE LIQUID	A7, B2 B6, N34, T6, T26.	None	202	243	Forbidden	30 L	C	40	
1,4-Butynediol	6.1	UN2716	III	KEEP AWAY FROM FOOD	A1	None	213	240	100 kg	200 kg	A	61, 70	
Butyraldehyde	3	UN1129	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	B		
Butyraldoxime	3	UN2840	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A		
Butyric acid	8	UN2820	III	CORROSIVE	T1	154	203	241	5 L	60 L	A	12	
Butyric anhydride	8	UN2739	III	CORROSIVE	T2	154	203	241	5 L	60 L	A		
Butyronitrile	3	UN2411	II	FLAMMABLE LIQUID, POISON	T14	None	202	243	1 L	60 L	E	40	
Butyryl chloride	3	UN2353	II	FLAMMABLE LIQUID, CORROSIVE	B100, T9, T26	None	202	243	1 L	5 L	C	40	
Cacodylic acid	6.1	UN1572	II	POISON		None	212	242	25 kg	100 kg	E	26	
Cadmium compounds	6.1	UN2570	I	POISON		None	211	242	5 kg	50 kg	A		
			II	POISON		None	212	242	25 kg	100 kg	A		
			III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A		
Caesium hydroxide	8	UN2682	II	CORROSIVE		154	212	240	15 kg	50 kg	A		
Caesium hydroxide solution	8	UN2681	II	CORROSIVE	B2, T8	154	202	242	1 L	30 L	A		
			III	CORROSIVE	T7	154	203	241	5 L	60 L	A		
Calcium	4.3	UN1401	II	DANGEROUS WHEN WET	B100	None	212	241	15 kg	50 kg	E		
Calcium arsenate	6.1	UN1573	II	POISON		None	212	242	25 kg	100 kg	A		
Calcium arsenate and calcium arsenite, mixtures, solid	6.1	UN1574	II	POISON		None	212	242	25 kg	100 kg	A		
D Calcium arsenite, solid	6.1	NA1574	II	POISON		None	212	242	25 kg	100 kg	A		
Calcium bisulfite solution, see Bisulfites, inorganic, aqueous solutions n.o.s.													
Calcium carbide	4.3	UN1402	I	DANGEROUS WHEN WET	A1, A6, B55, N34	None	211	242	Forbidden	15 kg	B		
			II	DANGEROUS WHEN WET	A1, A6, B55, B101, B104, N34	None	212	241	15 kg	50 kg	B		
Calcium chlorate	5.1	UN1452	II	OXIDIZER	N34	152	212	242	5 kg	25 kg	A	56, 58, 106	
Calcium chlorate aqueous solution	5.1	UN2429	II	OXIDIZER	A2, N41, T8	152	202	242	1 L	5 L	B	56, 58, 106	
Calcium chlorite	5.1	UN1453	II	OXIDIZER	A9, N34	152	212	242	5 kg	25 kg	A	56, 58, 106	
Calcium cyanamide *with more than 0.1 percent of calcium carbide*	4.3	UN1403	III	DANGEROUS WHEN WET	A1, A19, B105	None	213	241	25 kg	100 kg	A		
Calcium cyanide	6.1	UN1575	I	POISON	N79, N80	None	211	242	5 kg	50 kg	A	26, 40	
Calcium dithionite or Calcium hydrosulfite	4.2	UN1923	II	SPONTANEOUSLY COMBUSTIBLE	A19, A20	None	212	241	15 kg	50 kg	E	13	
Calcium hydride	4.3	UN1404	I	DANGEROUS WHEN WET	A19, B100, N40	None	211	242	Forbidden	15 kg	E		
Calcium hydrosulfite, *see* Calcium dithionite													
Calcium hypochlorite dry or Calcium hypochlorite mixtures dry *with more than 39 percent available chlorine (8.8 percent available oxygen)*	5.1	UN1748	II	OXIDIZER	A7, A9 N34	152	212	None	5 kg	25 kg	D	48 56 58 69 106 118	

§172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	Packing group	Label(s) required (if not excepted)	Special provisions	(8) Packaging authorizations (§173 ***)			(9) Quantity limitations		(10) Vessel stowage requirements	
							Exceptions	Non bulk packaging	Bulk packaging	Passenger aircraft or railcar	Cargo aircraft only	Vessel stowage	Other stowage provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Calcium hypochlorite, hydrated or Calcium hypochlorite, hydrated mixtures, *with not less than 5.5 percent but not more than 16 percent water*	5.1	UN2880	II	OXIDIZER		152	212	240	5 kg	25 kg	A	50, 56, 58, 59, 106
	Calcium hypochlorite mixtures, dry *with more than 10 percent but not more than 39 percent available chlorine*	5.1	UN2208	III	OXIDIZER	A1, A29, B103, N34	152	213	240	25 kg	100 kg	A	56, 58, 59, 106
	Calcium manganese silicon	4.3	UN2844	III	DANGEROUS WHEN WET	A1, A19, B106, B108	None	213	241	25 kg	100 kg	A	85, 103
	Calcium nitrate	5.1	UN1454	III	OXIDIZER	34	152	213	240	25 kg	100 kg	A	
A	Calcium oxide	8	UN1910	III	CORROSIVE		154	213	240	25 kg	100 kg	A	
	Calcium perchlorate	5.1	UN1455	II	OXIDIZER		152	212	242	5 kg	25 kg	A	56, 58, 106
	Calcium permanganate	5.1	UN1456	II	OXIDIZER		152	212	242	5 kg	25 kg	D	56, 58, 59, 106, 107
	Calcium peroxide	5.1	UN1457	II	OXIDIZER		152	212	242	5 kg	25 kg	A	13, 75, 106
	Calcium phosphide	4.3	UN1360	I	DANGEROUS WHEN WET, POISON.	A8, A19, B100, N40	None	211	242	Forbidden	15 kg	E	40, 85
	Calcium, pyrophoric or Calcium alloys pyrophoric	4.2	UN1855	I	SPONTANEOUSLY COMBUSTIBLE.		None	187	None	Forbidden	Forbidden	D	
	Calcium resinate	4.1	UN1313	III	FLAMMABLE SOLID	A1, A19	None	213	240	25 kg	100 kg	A	
	Calcium resinate, fused	4.1	UN1314	III	FLAMMABLE SOLID	A1, A19	None	213	240	25 kg	100 kg	A	
	Calcium selenate, *see* Selenates or Selenites												
	Calcium silicide	4.3	UN1405	II	DANGEROUS WHEN WET	A19, B106, B108	None	212	241	15 kg	50 kg	B	85, 103
				III	DANGEROUS WHEN WET.	A1, A19	None	213	241	25 kg	100 kg	B	85, 103
	Camphor oil	3	UN1130	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Camphor, synthetic	4.1	UN2717	III	FLAMMABLE SOLID	A1	None	213	240	25 kg	100 kg	A	
	Cannon primers, see Primers, tubular												
	Caproic acid	8	UN2829	III	CORROSIVE	T1	154	203	241	5 L	60 L	A	
	Caps blasting see Detonators, etc												
	Carbamate pesticides liquid flammable, toxic, *flash point less than 23 degrees C*	3	UN2758	I	FLAMMABLE LIQUID, POISON.		None	201	243	Forbidden	30 L	B	40
				II	FLAMMABLE LIQUID, POISON		None	202	243	1 L	60 L	B	40
				III	FLAMMABLE LIQUID, KEEP AWAY FROM FOOD	B1	150	203	242	60 L	220 L	B	40
	Carbamate pesticides, liquid, toxic	6.1	UN2992	I	POISON	T42	None	201	243	1 L	30 L	B	40
				II	POISON	T14	None	202	243	5 L	60 L	B	40
				III	KEEP AWAY FROM FOOD	T14	153	203	241	60 L	220 L	A	40
	Carbamate pesticides liquid, toxic, flammable, *flash point not less than 23 degrees C*	6.1	UN2991	I	POISON, FLAMMABLE LIQUID.	T42	None	201	243	1 L	30 L	B	40
				II	POISON, FLAMMABLE LIQUID	T14	None	202	243	5 L	60 L	B	40
				III	KEEP AWAY FROM FOOD, FLAMMABLE LIQUID.	B1, T14	153	203	242	60 L	220 L	A	40
	Carbamate pesticides, solid, toxic	6.1	UN2757	I	POISON		None	211	242	5 kg	50 kg	A	40
				II	POISON		None	212	242	25 kg	100 kg	A	40
				III	KEEP AWAY FROM FOOD		153	213	240	100 kg	200 kg	A	40
	Carbolic acid see Phenol solid or Phenol molten												
	Carbolic acid solutions, see Phenol solutions												
I	Carbon activated	4.2	UN1362	III	SPONTANEOUSLY COMBUSTIBLE		None	213	241	0.5 kg	0.5 kg	A	12
I	Carbon, *animal or vegetable origin*	4.2	UN1361	II	SPONTANEOUSLY COMBUSTIBLE		None	212	242	Forbidden	Forbidden	A	12
				III	SPONTANEOUSLY COMBUSTIBLE.		None	213	241	Forbidden	Forbidden	A	12
	Carbon bisulfide see Carbon disulfide												

	Carbon dioxide	2.2	UN1013		NONFLAMMABLE GAS		306	302 304	302 314, 315	75 kg	150 kg	A		
	Carbon dioxide and nitrous oxide mixtures	2.2	UN1015		NONFLAMMABLE GAS		306	None	314 315	75 kg	150 kg	A		
	Carbon dioxide and oxygen mixtures	2.2	UN1014		NONFLAMMABLE GAS		306	304	314, 315	75 kg	150 kg	A		
	Carbon dioxide, refrigerated liquid	2.2	UN2187		NONFLAMMABLE GAS	B43	306	304	314 315	50 kg	500 kg	B		
AW	Carbon dioxide, solid or Dry ice	9	UN1845	III	None	B12	217	217	240	200 kg	200 kg	C	40	
	Carbon disulfide	3	UN1131	I	FLAMMABLE LIQUID, POISON	B16, T18, T28, T29	None	201	243	Forbidden	Forbidden	D	18 40 115	
	Carbon monoxide	2.3	UN1016		POISON GAS, FLAMMABLE GAS	4	None	302	314, 315	Forbidden	25 kg	D	40	
	Carbon monoxide and hydrogen mixture	2.3	UN2600		POISON GAS, FLAMMABLE GAS	6	None	302	302	Forbidden	Forbidden	D	40	
D	Carbon monoxide, refrigerated liquid *(cryogenic liquid)*	2.3	NA9202		POISON GAS, FLAMMABLE GAS.	4	None	318	318	Forbidden	Forbidden	D		
	Carbon tetrabromide	6.1	UN2516	III	KEEP AWAY FROM FOOD		153	213	240	100 kg	200 kg	A	25	
	Carbon tetrachloride	6.1	UN1846	II	POISON	N36, T8	None	202	243	5 L	60 L	A	40	
	Carbonyl chloride, see Phosgene													
	Carbonyl fluoride	2.3	UN2417		POISON GAS, CORROSIVE	2	None	302	None	Forbidden	Forbidden	D	40	
	Carbonyl sulfide	2.3	UN2204		POISON GAS, FLAMMABLE GAS.	3, 25, B14	None	304	314, 315	Forbidden	25 kg	D	40	
	Cartridge cases, empty primed, see Cases, cartridge, empty, with primer													
	Cartridges, actuating, for aircraft ejector seat catapult, fire extinguisher, canopy removal or apparatus, see Cartridges, power device													
	Cartridges, explosive, see Charges, demolition													
	Cartridges, flash	1.1G	UN0049	II	EXPLOSIVE 1.1G		None	62	None	Forbidden	Forbidden	B		
	Cartridges, flash	1.3G	UN0050	II	EXPLOSIVE 1.3G		None	62	None	Forbidden	75 kg	B		
	Cartridges for weapons, blank	1.1C	UN0326	II	EXPLOSIVE 1.1C		None	62	None	Forbidden	Forbidden	B		
	Cartridges for weapons, blank	1.2C	UN0413	II	EXPLOSIVE 1.2C		None	62	None	Forbidden	Forbidden	B		
	Cartridges for weapons, blank or Cartridges, small arms blank	1.4S	UN0014	II	None	112	None	62	None	25 kg	100 kg	A		
	Cartridges for weapons, blank or Cartridges small arms blank	1.3C	UN0327	II	EXPLOSIVE 1.3C		None	62	None	Forbidden	Forbidden	B		
	Cartridges for weapons, blank or Cartridges, small arms, blank	1.4C	UN0338	II	EXPLOSIVE 1.4C		None	62	None	Forbidden	75 kg	A	24E	
	Cartridges for weapons, inert projectile	1.2C	UN0328	II	EXPLOSIVE 1.2C		None	62	None	Forbidden	Forbidden	B		
	Cartridges for weapons, inert projectile or Cartridges, small arms	1.4S	UN0012	II	None	112	None	62	None	25 kg	100 kg	A		
	Cartridges for weapons, inert projectile or Cartridges, small arms	1.4C	UN0339	II	EXPLOSIVE 1.4C		None	62	None	Forbidden	75 kg	B		
	Cartridges for weapons inert projectile or Cartridges, small arms	1.3C	UN0417	II	EXPLOSIVE 1.3C		None	62	None	Forbidden	Forbidden	B		
	Cartridges for weapons, *with bursting charge*	1.1F	UN0005	II	EXPLOSIVE 1.1F		None	62	None	Forbidden	Forbidden	E		
	Cartridges for weapons, *with bursting charge*	1.1E	UN0006	II	EXPLOSIVE 1.1E		None	62	None	Forbidden	Forbidden	B		
	Cartridges for weapons, *with bursting charge*	1.2F	UN0007	II	EXPLOSIVE 1.2F		None	62	None	Forbidden	Forbidden	E		
	Cartridges for weapons, *with bursting charge*	1.2E	UN0321	II	EXPLOSIVE 1.2E		None	62	None	Forbidden	Forbidden	B		
	Cartridges for weapons, *with bursting charge*	1.4F	UN0348	II	EXPLOSIVE 1.4F		None	62	None	Forbidden	Forbidden	E		
	Cartridges for weapons, *with bursting charge*	1.4E	UN0412	II	EXPLOSIVE 1.4E		None	62	None	Forbidden	75 kg	A	24E	
	Cartridges, oil well	1.3C	UN0277	II	EXPLOSIVE 1.3C		None	62	None	Forbidden	Forbidden	B		
	Cartridges, oil well	1.4C	UN0278	II	EXPLOSIVE 1.4C		None	62	None	Forbidden	75 kg	A	24E	
	Cartridges, power device	1.3C	UN0275	II	EXPLOSIVE 1.3C		None	62	None	Forbidden	75 kg	B		
	Cartridges, power device	1.4C	UN0276	II	EXPLOSIVE 1.4C	110	None	62	None	Forbidden	75 kg	A	24E	
	Cartridges, power device	1.4S	UN0323	II	EXPLOSIVE 1.4S	110, 113	None	62	None	25 kg	100 kg	A		
	Cartridges, power device	1.2C	UN0381	II	EXPLOSIVE 1.2C		None	62	None	Forbidden	Forbidden	B		
	Cartridges, safety, blank *see* Cartridges for weapons, blank *(UN 0014)*													
	Cartridges, safety, *see* Cartridges for weapons, *other than blank or* Cartridges power device *(UN 0323)*													
	Cartridges, signal	1.3G	UN0054	II	EXPLOSIVE 1.3G		None	62	None	Forbidden	75 kg	B		
	Cartridges, signal	1.4G	UN0312	II	EXPLOSIVE 1.4G		None	62	None	Forbidden	75 kg	A	24E	
	Cartridges, signal	1.4S	UN0405	II	EXPLOSIVE 1.4S		None	62	None	25 kg	100 kg	A		
D	Cartridges, small arms	ORM-D			None	112	230	None	None	30 kg gross	30 kg gross	A		
	Cartridges sporting, see Cartridges for weapons, *other than blank*													
	Cartridges, starter, jet engine, see Cartridges, power device													
	Cases, cartridge, empty with primer	1.4S	UN0055	II	EXPLOSIVE 1.4S	50	None	62	None	25 kg	100 kg	A		
	Cases, cartridges, empty with primer	1.4C	UN0379	II	EXPLOSIVE 1.4C	50	None	62	None	Forbidden	75 kg	A	24E	
	Cases combustible, empty, without primer	1.4C	UN0446	II	EXPLOSIVE 1.4C		None	62	None	Forbidden	75 kg	A	24E	
	Cases, combustible, empty, without primer	1.3C	UN0447	II	EXPLOSIVE 1.3C		None	62	None	Forbidden	Forbidden	B		
	Casinghead gasoline see Gasoline													
AW	Castor beans or Castor meal or Castor pomace or Castor flake	9	UN2969	II	None		155	204	240	No limit	No limit	E	34, 40	
	Caustic alkali liquids, n.o.s.	8	UN1719	II	CORROSIVE	B2, T14	154	202	242	1 L	60 L	A		
				III	CORROSIVE	T7	154	203	241	5 L	60 L	A		
	Caustic potash, see Potassium hydroxide *etc*													
	Caustic soda, (etc.) see Sodium hydroxide *etc*													
	Cells, containing sodium	4.3	UN3292	II	DANGEROUS WHEN WET		189	189	189	25 kg	No limit	A		
	Celluloid *in block rods rolls sheets tubes etc except scrap*	4.1	UN2000	III	FLAMMABLE SOLID		None	213	240	25 kg	100 kg	A		

§172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	Packing group	Label(s) required (if not excepted)	Special provisions	(8) Packaging authorizations (§173 ***) Exceptions	Non-bulk packaging	Bulk packaging	(9) Quantity limitations Passenger aircraft or railcar	Cargo aircraft only	(10) Vessel stowage requirements Vessel stowage	Other stowage provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Celluloid scrap	4.2	UN2002	III	SPONTANEOUSLY COMBUSTIBLE		None	213	241	Forbidden	Forbidden	D	
	Cement see Adhesives *containing flammable liquid*												
	Cerium *slabs, ingots, or rods*	4.1	UN1333	II	FLAMMABLE SOLID	N34	None	212	240	15 kg	50 kg	A	74, 91
	Cerium, *turnings or gritty powder*	4.3	UN3078	II	DANGEROUS WHEN WET	A1, B108, B109, B109	None	212	242	15 kg	50 kg	E	
	Cesium *or* Caesium	4.3	UN1407	I	DANGEROUS WHEN WET.	A19, B100, N34, N40	None	211	242	Forbidden	15 kg	D	
	Cesium nitrate *or* Caesium nitrate	5.1	UN1451	III	OXIDIZER	A1, A29	152	213	240	25 kg	100 kg	A	
D	Charcoal briquettes, *shell, screenings, wood, etc.*	4.2	NA1361	III	SPONTANEOUSLY COMBUSTIBLE.		151	213	240	25 kg	100 kg	A	12
	Charges bursting, plastics bonded	1.1D	UN0457	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	
	Charges, bursting plastics bonded	1.2D	UN0458	II	EXPLOSIVE 1.2D		None	62	None	Forbidden	Forbidden	B	
	Charges bursting plastics bonded	1.4D	UN0459	II	EXPLOSIVE 1.4D		None	62	None	Forbidden	75 kg	A	24E
	Charges, bursting, plastics bonded	1.4S	UN0460	II	EXPLOSIVE 1.4S		None	62	None	25 kg	100 kg	A	
	Charges demolition	1.1D	UN0048	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	
	Charges, depth	1.1D	UN0056	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	3E, 7E
	Charges, expelling, explosive, for fire extinguishers, see Cartridges, power device												
	Charges, explosive, commercial *without detonator*	1.1D	UN0442	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	
	Charges, explosive, commercial *without detonator*	1.2D	UN0443	II	EXPLOSIVE 1.2D		None	62	None	Forbidden	Forbidden	B	
	Charges, explosive, commercial *without detonator*	1.4D	UN0444	II	EXPLOSIVE 1.4D		None	62	None	Forbidden	75 kg	A	24E
	Charges explosive, commercial *without detonator*	1.4S	UN0445	II	EXPLOSIVE 1.4S		None	62	None	25 kg	100 kg	A	
	Charges, propelling	1.1C	UN0271	II	EXPLOSIVE 1.1C		None	62	None	Forbidden	Forbidden	B	
	Charges propelling	1.3C	UN0272	II	EXPLOSIVE 1.3C		None	62	None	Forbidden	Forbidden	B	
	Charges, propelling	1.2C	UN0415	II	EXPLOSIVE 1.2C		None	62	None	Forbidden	Forbidden	B	
	Charges, propelling	1.4C	UN0491	II	EXPLOSIVE 1.4C		None	62	None	Forbidden	75 kg	A	1E 5E
	Charges, propelling, for cannon	1.3C	UN0242	II	EXPLOSIVE 1.3C		None	62	None	Forbidden	Forbidden	B	1E, 5E
	Charges, propelling, for cannon	1.1C	UN0279	II	EXPLOSIVE 1.1C		None	62	None	Forbidden	Forbidden	B	1E 5E
	Charges, propelling, for cannon	1.2C	UN0414	II	EXPLOSIVE 1.2C		None	62	None	Forbidden	Forbidden	B	1E 5E
	Charges, shaped, commercial, *without detonator*	1.1D	UN0059	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	
	Charges, shaped commercial *without detonator*	1.2D	UN0439	II	EXPLOSIVE 1.2D		None	62	None	Forbidden	Forbidden	B	
	Charges shaped commercial *without detonator*	1.4D	UN0440	II	EXPLOSIVE 1.4D		None	62	None	Forbidden	75 kg	A	24E
	Charges, shaped, commercial *without detonator*	1.4S	UN0441	II	EXPLOSIVE 1.4S		None	62	None	25 kg	100 kg	A	
	Charges shaped flexible, linear	1.4D	UN0237	II	EXPLOSIVE 1.4D		None	62	None	Forbidden	75 kg	A	24E
	Charges shaped flexible linear	1.1D	UN0288	II	EXPLOSIVE 1.1D	101	None	62	None	Forbidden	Forbidden	B	
	Charges, supplementary explosive	1.1D	UN0060	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E 5E
D	Chemical kit	8	NA1760	II	CORROSIVE		154	161	None	1 L	30 L	B	40
	Chemical kits *(must be classified and labelled according to the hazard class of the constituent(s) and must meet the requirements of special provision 15 in 172.102(c)(1))*												
	Chloral, anhydrous inhibited	6.1	UN2075	II	POISON	B101, T14	None	202	243	5 L	60 L	D	40
	Chlorate and borate mixtures	5.1	UN1458	II	OXIDIZER	A9, N34	152	212	240	5 kg	25 kg	A	56 58, 106
				III	OXIDIZER	A9, N34	152	213	240	25 kg	100 kg	A	56, 58 106
	Chlorate and magnesium chloride mixtures	5.1	UN1459	II	OXIDIZER	A9, N34, T8	152	212	240	5 kg	25 kg	A	56 58 106
				III	OXIDIZER	A9, N34, T8	152	213	240	25 kg	100 kg	A	56 58, 106
	Chlorate of potash see Potassium chlorate												
	Chlorate of soda, see Sodium chlorate												
	Chlorates, inorganic, aqueous solution *n.o.s*	5.1	UN3210	II	OXIDIZER	T8	152	202	242	1 L	5 L	B	56, 58 106
	Chlorates inorganic *n.o.s*	5.1	UN1461	II	OXIDIZER	A9, N34	152	212	242	5 kg	25 kg	A	56, 58, 106
	Chloric acid aqueous solution, *with not more than 10 percent chloric acid*	5.1	UN2626	II	OXIDIZER	T28	None	229	None	Forbidden	Forbidden	D	56, 58, 106
	Chloride of phosphorus see Phosphorus trichloride												
	Chloride of sulfur see Sulfur chloride												
	Chlorinated lime, see Calcium hypochlorite mixtures *etc.*												
	Chlorine	2.3	UN1017		POISON GAS, CORROSIVE	2, B9, B14	None	304	314 315	Forbidden	Forbidden	D	40 51, 55 62 68 89 90
	Chlorine azide	Forbidden											
D	Chlorine dioxide hydrate frozen	5.1	NA9191	II	OXIDIZER, POISON		None	229	None	Forbidden	Forbidden	E	
	Chlorine dioxide (not hydrate)	Forbidden											
	Chlorine pentafluoride	2.3	UN2548		POISON GAS, OXIDIZER, CORROSIVE	1, B7, B9, B14	None	304	314	Forbidden	Forbidden	D	40, 89, 90

Chlorine trifluoride	2.3	UN1749		POISON GAS, OXIDIZER, CORROSIVE.	2, 25, B7, B9, B14	None	304	314	Forbidden	Forbidden	D	40, 69, 90
Chlorite solution with more than 5 percent but less than 16 percent available chlorine	8	UN1908	III	CORROSIVE	A3, A6, A7, B2, N34, T8	154	203	241	5 L	60 L	B	26
Chlorite solution with not less than 16 percent available chlorine	8	UN1908	II	CORROSIVE	A3, A6, A7, B2, N34, T8	154	202	242	1 L	30 L	B	26
Chlorites, inorganic n o s	5.1	UN1462	II	OXIDIZER	A7, N34	152	212	242	5 kg	25 kg	A'	58, 58, 106
1-Chloro-3-bromopropane	6.1	UN2688	III	KEEP AWAY FROM FOOD	T2	153	203	241	60 L	220 L	A	
1-Chloro-1,1-difluoroethane, see Chlorodifluoroethanes												
1-Chloro-1,1-difluoroethanes, R142b	2.1	UN2517		FLAMMABLE GAS		306	304	314, 315	Forbidden	150 kg	B	40
3-Chloro-4-methylphenyl isocyanate	6.1	UN2236	II	POISON		None	202	243	5 L	60 L	B	40
1-Chloro-1,2,2,2-tetrafluoroethane, R124	2.2	UN1021		NONFLAMMABLE GAS		306	304	314, 315	75 kg	150 kg	A	
4-Chloro-o-toluidine hydrochloride	6.1	UN1579	III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A	
1-Chloro-2,2,2-trifluoroethane, R133a	2.2	UN1983		NONFLAMMABLE GAS		306	304	314, 315	75 kg	150 kg	A	
Chloroacetic acid, molten	6.1	UN3250	II	POISON, CORROSIVE	T9	None	202	243	Forbidden	Forbidden	C	40
Chloroacetic acid solid	6.1	UN1751	II	POISON, CORROSIVE	A3, A7, N34	None	212	242	15 kg	50 kg	A	40
Chloroacetic acid, solution	6.1	UN1750	II	POISON, CORROSIVE	A7, N34, T8, T27	None	202	243	1 L	30 L	C	40
+ Chloroacetone, stabilized	6.1	UN1695	II	POISON	2, B9, B14, B32, B74, N12, N32, N34, T38, T43, T45	None	227	244	Forbidden	Forbidden	D	40
Chloroacetone (unstabilized)	Forbidden											
+ Chloroacetonitrile	6.1	UN2668	II	POISON, FLAMMABLE LIQUID.	2, B9, B14, B32, B74, T38, T43, T45	None	227	244	Forbidden	60 L	A	12, 26 40
Chloroacetophenone (CN), liquid	6.1	UN1697	II	POISON	A3, N12, N32, N33.	None	202	243	Forbidden	60 L	D	12, 40.
Chloroacetophenone (CN) solid	6.1	UN1697	II	POISON	A3, N12, N32, N33, N34,	None	212	None	Forbidden	100 kg	D	12 40
Chloroacetyl chloride	6.1	UN1752	I	POISON, CORROSIVE	2, A3, A6, A7, B3, B8, B9, B14, B32, B74, B77, N34, N43, T38, T43, T45	None	227	244	Forbidden	Forbidden	D	40
Chloroanilines liquid	6.1	UN2019	II	POISON	T14	None	202	243	5 L	60 L	A	
Chloroanilines solid	6.1	UN2018	II	POISON	T14, T38	None	212	242	25 kg	100 kg	A	
Chloroanisidines	6.1	UN2233	III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A	
Chlorobenzene	3	UN1134	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
Chlorobenzol, see Chlorobenzene												
Chlorobenzotrifluorides	3	UN2234	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	40
Chlorobenzyl chlorides	6.1	UN2235	III	KEEP AWAY FROM FOOD	T8	153	203	241	60 L	220 L	A	
Chlorobutanes	3	UN1127	II	FLAMMABLE LIQUID	B101, T8	150	202	242	5 L	60 L	B	
Chlorocresols, liquid	6.1	UN2669	II	POISON	T8	None	202	243	5 L	60 L	A	12
Chlorocresols, solid	6.1	UN2669	II	POISON		None	212	242	25 kg	100 kg	A	12
Chlorodifluorobromomethane, R12B1	2.2	UN1974		NONFLAMMABLE GAS		306	304	314, 315	75 kg	150 kg	A	
Chlorodifluoromethane and chloropentafluoroethane mixture with fixed boiling point, with approximately 49 percent chlorodifluoromethane R502	2.2	UN1973		NONFLAMMABLE GAS		306	304	314, 315	75 kg	150 kg	A	
Chlorodifluoromethane, R22	2.2	UN1018		NONFLAMMABLE GAS		306	304	314, 315	75 kg	150 kg	A	
Chlorodinitrobenzenes	6.1	UN1577	II	POISON	T14	None	212	242	25 kg	100 kg	A	91
2-Chloroethanol	6.1	UN2232	I	POISON	2, B9, B14, B32, B74, T38, T43, T45	None	227	244	Forbidden	Forbidden	D	40
Chloroform	6.1	UN1888	III	KEEP AWAY FROM FOOD.	N36, T14	153	203	241	5 L	60 L	A	40
Chloroformates, toxic, corrosive, flammable, n o.s.	6.1	UN2742	II	POISON, CORROSIVE, FLAMMABLE LIQUID.	5	None	202	243	1 L	30 L	A	12, 13 21, 25, 40, 100
Chloroformates toxic, corrosive n o.s	6.1	UN3277	II	POISON, CORROSIVE	T12, T26	None	202	243	1 L	30 L	A	12, 13, 25, 40
Chloromethyl chloroformate	6.1	UN2745	II	POISON, CORROSIVE	T18	None	202	243	1 L	30 L	A	12, 13, 21, 25, 40, 100
Chloromethyl ethyl ether	3	UN2354	II	FLAMMABLE LIQUID, POISON.	T8	None	202	243	1 L	60 L	E	40
Chloronitroanilines	6.1	UN2237	III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A	

§172 101 HAZARDOUS MATERIALS TABLE—Continued

Symbols (1)	Hazardous materials descriptions and proper shipping names (2)	Hazard class or Division (3)	Identification Numbers (4)	Packing group (5)	Label(s) required (if not excepted) (6)	Special provisions (7)	(8) Packaging authorizations (§173 ***): Exceptions (8A)	Non-bulk packaging (8B)	Bulk packaging (8C)	(9) Quantity limitations: Passenger aircraft or railcar (9A)	Cargo aircraft only (9B)	(10) Vessel stowage requirements: Vessel stowage (10A)	Other stowage provisions (10B)
*	Chloronitrobenzene *ortho liquid*	6 1	UN1578	II	POISON	T14	None	202	243	5 L	60 L	A	
*	Chloronitrobenzenes *meta or para, solid*	6 1	UN1578	II	POISON	T14	None	212	242	25 kg	100 kg	A	
	Chloronitrotoluenes *liquid*	6 1	UN2433	III	KEEP AWAY FROM FOOD.		153	203	241	60 L	220 L	A	
	Chloronitrotoluenes *solid*	6.1	UN2433	III	KEEP AWAY FROM FOOD		153	213	240	100 kg	200 kg	A	
	Chloropentafluoroethane, *R115*	2 2	UN1020		NONFLAMMABLE GAS		306	304	314, 315	75 kg	150 kg	A	
	Chlorophenolates, liquid *or* Phenolates, liquid	8	UN2904	III	CORROSIVE		154	203	241	5 L	60 L	A	
	Chlorophenolates solid *or* Phenolates, solid	8	UN2905	III	CORROSIVE		154	213	240	25 kg	100 kg	A	
	Chlorophenols liquid	6 1	UN2021	III	KEEP AWAY FROM FOOD	T7	153	203	241	60 L	220 L	A	
	Chlorophenols, solid	6 1	UN2020	III	KEEP AWAY FROM FOOD	T7	153	213	240	100 kg	200 kg	A	
	Chlorophenyltrichlorosilane	8	UN1753	II	CORROSIVE	A7, B2, B6 N34, T8, T26	None	202	242	Forbidden	30 L	C	40
+	Chloropicrin	6 1	UN1580	I	POISON	2, B7 B9, B14, B32, B46, B74, T38 T43, T45	None	227	244	Forbidden	Forbidden	D	40
	Chloropicrin and methyl bromide mixtures	2 3	UN1581		POISON GAS	2, B9, B14	None	193	314 315	Forbidden	Forbidden	D	25, 40
	Chloropicrin and methyl chloride mixtures	2 3	UN1582		POISON GAS	2	None	193	245	Forbidden	Forbidden	D	25 40
	Chloropicrin mixture flammable (pressure not exceeding 14 7 psia at 115 degrees F flash point below 100 degrees F) see Toxic liquids, flammable *etc.*												
	Chloropicrin mixtures n.o s.	6 1	UN1583	I	POISON	6	None	201	243	Forbidden	Forbidden	C	40
				II	POISON		None	202	243	Forbidden	Forbidden	C	40
				III	KEEP AWAY FROM FOOD		153	203	241	Forbidden	Forbidden	C	40
D	Chloropivaloyl chloride	6.1	NA9263	I	POISON, CORROSIVE	2 B9 B14 B32 B74, T38 T43 T45	None	227	244	Forbidden	Forbidden	B	40
	Chloroplatinic acid solid	8	UN2507	III	CORROSIVE		154	213	240	25 kg	100 kg	A	
	Chloroprene inhibited	3	UN1991	I	FLAMMABLE LIQUID, POISON	B57, T15	None	201	243	Forbidden	30 L	D	40
	Chloroprene uninhibited	Forbidden											
	2-Chloropropane	3	UN2356	I	FLAMMABLE LIQUID	N36, T14	150	201	243	1 L	30 L	E	
	3-Chloropropanol 1	6 1	UN2849	III	KEEP AWAY FROM FOOD	T8	153	203	241	60 L	220 L	A	
	2-Chloropropene	3	UN2456	I	FLAMMABLE LIQUID	A3, N36, T20	150	201	243	1 L	30 L	E	
	2-Chloropropionic acid	8	UN2511	III	CORROSIVE	T8	154	203	241	5 L	60 L	A	8
	2-Chloropyridine	6 1	UN2822	II	POISON	T14	None	202	243	5 L	60 L	A	40
	Chlorosilanes corrosive flammable n o s	8	UN2986	II	CORROSIVE FLAMMABLE LIQUID.	B100	None	202	243	1 L	30 L	C	40
	Chlorosilanes corrosive n o s	8	UN2987	II	CORROSIVE	B2	154	202	242	1 L	30 L	C	40
	Chlorosilanes, flammable corrosive n o s	3	UN2985	II	FLAMMABLE LIQUID, CORROSIVE	B100, T18, T26	None	201	243	1 L	5 L	B	40
	Chlorosilanes water-reactive, flammable, corrosive, n o.s	4 3	UN2988	I	DANGEROUS WHEN WET, FLAMMABLE LIQUID, CORROSIVE	A2	None	201	244	Forbidden	1 L	D	21, 28, 40 49, 100
*	Chlorosulfonic acid *(with or without sulfur trioxide)*	8	UN1754	I	CORROSIVE, POISON	2 A3, A6, A10, B9, B10 B14, B32, B74 T38, T43 T45	None	227	244	Forbidden	Forbidden	C	40
	Chlorotoluenes	3	UN2238	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Chlorotoluidines *liquid*	6 1	UN2239	III	KEEP AWAY FROM FOOD	T7	153	203	241	60 L	220 L	A	
	Chlorotoluidines *solid*	6 1	UN2239	III	KEEP AWAY FROM FOOD		153	213	240	100 kg	200 kg	A	
	Chlorotrifluoromethane and trifluoromethane azeotropic mixture *with approximately 60 percent chlorotrifluoromethane R503*	2 2	UN2599		NONFLAMMABLE GAS		306	304	314 315	75 kg	150 kg	A	

	Chlorotrifluoromethane, R13	2.2	UN1022		NONFLAMMABLE GAS		306	304	314, 315	75 kg	150 kg	A	
D	Chromic acid solid	5.1	NA1463	II	OXIDIZER, CORROSIVE		None	212	242	5 kg	25 kg	A	
	Chromic acid solution	8	UN1755	II	CORROSIVE	B2, T9, T27	154	202	242	1 L	30 L	C	48
				III	CORROSIVE	T8, T26	154	203	241	5 L	60 L	C	40
	Chromic anhydride, see Chromium trioxide, anhydrous												
	Chromic fluoride, solid	8	UN1756	II	CORROSIVE		154	212	240	15 kg	50 kg	A	26
	Chromic fluoride, solution	8	UN1757	II	CORROSIVE	B2, T8	154	202	242	1 L	30 L	A	
				III	CORROSIVE	T7	154	203	241	5 L	60 L	A	
	Chromium nitrate	5.1	UN2720	III	OXIDIZER	A1, A29	152	213	240	25 kg	100 kg	A	
	Chromium oxychloride	8	UN1758	I	CORROSIVE	A3, A8, A7, B10, N34, T12, T26	None	201	243	0.5 L	2.5 L	C	40, 66, 74, 89, 90
	Chromium trioxide anhydrous	5.1	UN1463	II	OXIDIZER, CORROSIVE	B106	None	212	242	5 kg	25 kg	A	
	Chromosulfuric acid	8	UN2240	I	CORROSIVE	A3, A8, A7, B4, B6, N34, T11, T27	None	201	243	0.5 L	2.5 L	B	40, 66 74 89, 90
	Chromyl chloride, see Chromium oxychloride												
	Cigar and cigarette lighters, charged with fuel, see Lighters for cigars, cigarettes, etc												
	Coal briquettes, hot	Forbidden											
	Coal gas	2.3	UN1023		POISON GAS, FLAMMABLE GAS.	3	None	302	314, 315	Forbidden	25 kg	D	40
	Coal tar distillates, flammable	3	UN1136	II	FLAMMABLE LIQUID	T8, T31	150	202	242	5 L	60 L	B	
				III	FLAMMABLE LIQUID	B1, T7, T30	150	203	242	60 L	220 L	A	
	Coal tar dye, corrosive, liquid, n.o.s., see Dyes, liquid or solid, n.o.s. or Dye intermediates, liquid or solid, n.o.s., corrosive												
	Coating solution	3	UN1139	II	FLAMMABLE LIQUID	T7, T30	150	202	242	5 L	60 L	B	
				III	FLAMMABLE LIQUID	B1, T7, T30	150	203	242	60 L	220 L	A	
	Cobalt naphthenates, powder	4.1	UN2001	III	FLAMMABLE SOLID	A19	151	213	240	25 kg	100 kg	A	
	Cobalt resinate, precipitated	4.1	UN1318	III	FLAMMABLE SOLID	A1, A19	151	213	240	25 kg	100 kg	A	
	Coke, hot	Forbidden											
	Collodion, see Nitrocellulose *etc*												
D	Combustible liquid, n.o.s.	Combustible liquid	NA1993	III	None	T1	150	203	241	60 L	220 L	A	
	Components, explosive train, n.o.s	1.2B	UN0382	II	EXPLOSIVE 1.2B	101	None	62	None	Forbidden	Forbidden	B	1E 6E
	Components, explosive train, n.o.s.	1.4B	UN0383	II	EXPLOSIVE 1.4B	101	None	62	None	Forbidden	75 kg	A	24E
	Components, explosive train, n.o.s	1.4S	UN0384	II	EXPLOSIVE 1.4B	101	None	62	None	25 kg	100 kg	A	
	Components, explosive train, n.o.s.	1.1B	UN0461	II	EXPLOSIVE 1.1B	101	None	62	None	Forbidden	Forbidden	B	1E, 6E
	Composition B, see Hexolite, *etc*												
D	Compounds, cleaning liquid	8	NA1760	I	CORROSIVE	A7, B10, T42	None	201	243	0.5 L	2.5 L	B	40
				II	CORROSIVE	B2, N37, T14	154	202	242	1 L	30 L	B	40
				III	CORROSIVE	N37, T7	154	203	241	5 L	60 L	A	40
D	Compounds, cleaning liquid	3	NA1993	I	FLAMMABLE LIQUID	T42	150	201	243	1 L	30 L	E	
				II	FLAMMABLE LIQUID	T8, T31	150	202	242	5 L	60 L	B	
				III	FLAMMABLE LIQUID	B1, B52, T7, T30	150	203	242	60 L	220 L	A	
D	Compounds, tree killing, liquid *or* Compounds, weed killing, liquid	8	NA1760	I	CORROSIVE	A7, B10, T42	None	201	243	0.5 L	2.5 L	B	40
				II	CORROSIVE	B2, N37, T14	154	202	242	1 L	30 L	B	40
				III	CORROSIVE	N37, T7	154	203	241	5 L	60 L	A	40
D	Compounds, tree killing, liquid *or* Compounds, weed killing, liquid	3	NA1993	I	FLAMMABLE LIQUID	T42	150	201	243	1 L	30 L	E	
				II	FLAMMABLE LIQUID	T8, T31	150	202	242	5 L	60 L	B	
				III	FLAMMABLE LIQUID	B1, B52, T7, T30	150	203	242	60 L	220 L	A	
D	Compounds, tree killing, liquid *or* Compounds, weed killing, liquid	6.1	NA2810	I	POISON		None	201	243	1 L	30 L	B	40
				II	POISON		None	202	243	5 L	60 L	B	40
				III	KEEP AWAY FROM FOOD.		153	203	241	60 L	220 L	A	40
	Compressed gas, oxidizing, n.o.s	2.2	UN3156		NONFLAMMABLE GAS, OXIDIZER.		306	302	314, 315	75 kg	150 kg	D	
	Compressed gases, flammable, n.o.s.	2.1	UN1954		FLAMMABLE GAS		306	302, 305	314, 315	Forbidden	150 kg	D	40
	Compressed gases, n.o.s.	2.2	UN1956		NONFLAMMABLE GAS		306, 307	302, 305	314, 315	75 kg	150 kg	A	
	Compressed gases, toxic, flammable, n.o.s. *Inhalation hazard Zone A*	2.3	UN1953		POISON GAS, FLAMMABLE GAS.	1	None	192	245	Forbidden	Forbidden	D	40, 95
	Compressed gases, toxic, flammable, n.o.s. *Inhalation hazard Zone B*	2.3	UN1953		POISON GAS, FLAMMABLE GAS.	2, B9, B14	None	302, 305	314, 315	Forbidden	Forbidden	D	40
	Compressed gases, toxic, flammable, n.o.s *Inhalation Hazard Zone C*	2.3	UN1953		POISON GAS, FLAMMABLE GAS.	3, B14	None	302, 305	314, 315	Forbidden	Forbidden	D	40
	Compressed gases, toxic, flammable, n.o.s *Inhalation Hazard Zone D*	2.3	UN1953		POISON GAS, FLAMMABLE GAS	4	None	302, 305	314, 315	Forbidden	Forbidden	D	40
	Compressed gases, toxic, n.o.s. *Inhalation Hazard Zone A*	2.3	UN1955		POISON GAS	1	None	192	245	Forbidden	Forbidden	D	40
	Compressed gases, toxic, n.o.s *Inhalation Hazard Zone B*	2.3	UN1955		POISON GAS	2, B9, B14	None	302, 305	314, 315	Forbidden	Forbidden	D	40
	Compressed gases, toxic, n.o.s *Inhalation Hazard Zone C*	2.3	UN1955		POISON GAS	3, B14	None	302, 305	314, 315	Forbidden	Forbidden	D	40
	Compressed gases, toxic, n.o.s *Inhalation Hazard Zone D*	2.3	UN1955		POISON GAS	4	None	302, 305	314 315	Forbidden	Forbidden	D	40

§172 101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	Packing group	Label(s) required (if not excepted)	Special provisions	(8) Packaging authorizations (§173 ***) Exceptions	Non-bulk packaging	Bulk packaging	(9) Quantity limitations Passenger aircraft or railcar	Cargo aircraft only	(10) Vessel stowage requirements Vessel stowage	Other stowage provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
D	Consumer commodity	ORM-D			None		156 308	156, 306	None	30 kg gross	30 kg gross	A	
	Contrivances water-activated, with burster, expelling charge or propelling charge	1.2L	UN0248	II	EXPLOSIVE 1.2L	101	None	62	None	Forbidden	Forbidden	E	2E, 8E, 11E, 17E
	Contrivances, water-activated, with burster, expelling charge or propelling charge	1.3L	UN0249	II	EXPLOSIVE 1.3L	101	None	62	None	Forbidden	Forbidden	E	2E, 8E, 11E, 17E
	Copper acetoarsenite	6.1	UN1585	II	POISON		None	212	242	25 kg	100 kg	A	
	Copper acetylide	Forbidden											
	Copper amine azide	Forbidden											
	Copper arsenite	6.1	UN1586	II	POISON		None	212	242	25 kg	100 kg	A	
	Copper based pesticides, liquid, flammable, toxic, *flash point less than 23 degrees C*	3	UN2776	I	FLAMMABLE LIQUID POISON		None	201	243	Forbidden	30 L	B	40
				II	FLAMMABLE LIQUID, POISON		None	202	243	1 L	60 L	B	40
				III	FLAMMABLE LIQUID, KEEP AWAY FROM FOOD.	B1	150	203	242	60 L	220 L	B	40
	Copper based pesticides, liquid, toxic	6.1	UN3010	I	POISON	T42	None	201	243	1 L	30 L	B	40
				II	POISON	T14	None	202	243	5 L	60 L	B	40
				III	KEEP AWAY FROM FOOD.	T14	153	203	241	60 L	220 L	A	40
	Copper based pesticides, liquid, toxic, flammable *flashpoint not less than 23 degrees C*	6.1	UN3009	I	POISON, FLAMMABLE LIQUID	T42	None	201	243	1 L	30 L	B	40
				II	POISON, FLAMMABLE LIQUID	T14	None	202	243	5 L	60 L	B	40
				III	KEEP AWAY FROM FOOD, FLAMMABLE LIQUID	B1, T14	153	203	242	60 L	220 L	A	40
	Copper based pesticides solid, toxic	6.1	UN2775	I	POISON		None	211	242	5 kg	50 kg	A	40
				II	POISON		None	212	242	25 kg	100 kg	A	40
				III	KEEP AWAY FROM FOOD		153	213	240	100 kg	200 kg	A	40
	Copper chlorate	5.1	UN2721	II	OXIDIZER	A1	152	212	242	5 kg	25 kg	A	56, 58 106
	Copper chloride	8	UN2802	III	CORROSIVE		154	213	240	25 kg	100 kg	A	
	Copper cyanide	6.1	UN1587	II	POISON		None	204	242	25 kg	100 kg	A	26
	Copper selenate, *see* Selenates *or* Selenites												
	Copper selenite, *see* Selenates *or* Selenites												
	Copper tetramine nitrate	Forbidden											
AW	Copra	4 2	UN1363	III	SPONTANEOUSLY COMBUSTIBLE		None	213	241	Forbidden	Forbidden	A	13 19, 46 119
	Cord detonating, *flexible*	1 1D	UN0065	II	EXPLOSIVE 1 1D	102	63(a)	62	None	Forbidden	Forbidden	B	
	Cord detonating, *flexible*	1 4D	UN0289	II	EXPLOSIVE 1 4D		None	62	None	Forbidden	75 kg	A	24E
	Cord detonating *or* Fuse detonating *metal clad*	1 2D	UN0102	II	EXPLOSIVE 1.2D		None	62	None	Forbidden	Forbidden	B	
	Cord, detonating *or* Fuse, detonating *metal clad*	1 1D	UN0290	II	EXPLOSIVE 1 1D		None	62	None	Forbidden	Forbidden	B	
	Cord, detonating, mild effect *or* Fuse, detonating, mild effect *metal clad*	1 4D	UN0104	II	EXPLOSIVE 1 4D		None	62	None	Forbidden	75 kg	A	24E
	Cord igniter	1 4G	UN0066	II	EXPLOSIVE 1 4G		None	62	None	Forbidden	75 kg	A	24E
	Cordeau detonant fuse see Cord, detonating, etc., Cord detonating *flexible*												
	Cordite, see Powder smokeless												
	Corrosive liquid, acidic inorganic, n o s	8	UN3264	I	CORROSIVE	B10	None	201	243	0.5 L	2 5 L	B	40
				II	CORROSIVE	B2, T14	154	202	242	1 L	30 L	B	40
				III	CORROSIVE	T7	154	203	241	5 L	60 L	A	40
	Corrosive liquid, acidic, organic, n o s	8	UN3265	I	CORROSIVE	B10	None	201	243	0 5 L	2 5 L	B	40
				II	CORROSIVE	B2, T14	154	202	242	1 L	30 L	B	40
				III	CORROSIVE	T7	154	203	241	5 L	60 L	A	40
	Corrosive liquid basic inorganic, n o s.	8	UN3266	I	CORROSIVE	B10	None	201	243	0 5 L	2 5 L	B	40
				II	CORROSIVE	B2 T14	154	202	242	1 L	30 L	B	40
				III	CORROSIVE	T7	154	203	241	5 L	60 L	A	40
	Corrosive liquid, basic, organic, n o s	8	UN3267	I	CORROSIVE	B10	None	201	243	0.5 L	2 5 L	B	40

				II	CORROSIVE	B2, T14	154	202	242	1 L	30 L	B	40
				III	CORROSIVE	T7	154	203	241	5 L	60 L	A	40
	Corrosive liquid self-heating n o s	8	UN3301	I	CORROSIVE, SPONTANEOUSLY COMBUSTIBLE	B10	None	201	243	0.5 L	2.5 L	D	
				II	CORROSIVE, SPONTANEOUSLY COMBUSTIBLE	B2	154	202	242	1 L	30 L	D	
	Corrosive liquids flammable n o s	8	UN2920	I	CORROSIVE, FLAMMABLE LIQUID	B10, T42	None	201	243	0.5 L	2.5 L	C	25, 40
				II	CORROSIVE, FLAMMABLE LIQUID.	B2, T15, T26	None	202	243	1 L	30 L	C	25, 40
	Corrosive liquids, n.o s	8	UN1760	I	CORROSIVE	A7, B10, T42	None	201	243	0.5 L	2.5 L	B	40
				II	CORROSIVE	B2, T14	154	202	242	1 L	30 L	B	40
				III	CORROSIVE	T7	154	203	241	5 L	60 L	A	40
	Corrosive liquids, oxidizing, n o.s	8	UN3093	I	CORROSIVE, OXIDIZER		None	201	243	Forbidden	2.5 L	C	89
				II	CORROSIVE, OXIDIZER		None	202	243	1 L	30 L	C	89
	Corrosive liquids, toxic, n.o.s.	8	UN2922	I	CORROSIVE, POISON	A7, B10	None	201	243	0.5 L	2.5 L	B	40
				II	CORROSIVE, POISON	B3	None	202	243	1 L	30 L	B	40
				III	CORROSIVE, KEEP AWAY FROM FOOD		154	203	241	5 L	60 L	B	40
	Corrosive liquids, water-reactive n o.s	8	UN3094	I	CORROSIVE DANGEROUS WHEN WET.		None	201	243	Forbidden	1 L	E	
				II	CORROSIVE, DANGEROUS WHEN WET		None	202	243	1 L	5 L	E	
	Corrosive solid, acidic, inorganic, n.o s.	8	UN3260	I	CORROSIVE		None	211	242	1 kg	25 kg	B	
				II	CORROSIVE		154	212	240	15 kg	50 kg	B	
				III	CORROSIVE		154	213	240	25 kg	100 kg	A	
	Corrosive solid, acidic, organic, n o s.	8	UN3261	I	CORROSIVE		None	211	242	1 kg	25 kg	B	
				II	CORROSIVE		154	212	240	15 kg	50 kg	B	
				III	CORROSIVE		154	213	240	25 kg	100 kg	A	
	Corrosive solid, basic, inorganic, n o s.	8	UN3262	I	CORROSIVE		None	211	242	1 kg	25 kg	B	
				II	CORROSIVE		154	212	240	15 kg	50 kg	B	
				III	CORROSIVE		154	213	240	25 kg	100 kg	A	
	Corrosive solid, basic, organic, n.o.s.	8	UN3263	I	CORROSIVE		None	211	242	1 kg	25 kg	B	
				II	CORROSIVE		154	212	240	15 kg	50 kg	B	
				III	CORROSIVE		154	213	240	25 kg	100 kg	A	
	Corrosive solids, flammable, n o.s	8	UN2921	I	CORROSIVE, FLAMMABLE SOLID	B106	None	211	242	1 kg	25 kg	B	12, 25
				II	CORROSIVE FLAMMABLE SOLID		None	212	242	15 kg	50 kg	B	12, 25
	Corrosive solids, n.o.s.	8	UN1759	I	CORROSIVE		None	211	242	1 kg	25 kg	B	
				II	CORROSIVE		154	212	240	15 kg	50 kg	A	
				III	CORROSIVE		154	213	240	25 kg	100 kg	A	
	Corrosive solids, oxidizing, n o.s	8	UN3084	I	CORROSIVE, OXIDIZER	B100	None	211	242	1 kg	25 kg	C	
				II	CORROSIVE, OXIDIZER	B100	None	212	242	15 kg	50 kg	C	
	Corrosive solids, self-heating, n.o s.	8	UN3095	I	CORROSIVE, SPONTANEOUSLY COMBUSTIBLE	B100	None	211	243	1 kg	25 kg	C	
				II	CORROSIVE, SPONTANEOUSLY COMBUSTIBLE		None	212	242	15 kg	50 kg	C	
	Corrosive solids, toxic, n.o s.	8	UN2923	I	CORROSIVE, POISON		None	211	242	1 kg	25 kg	B	40
				II	CORROSIVE, POISON		None	212	240	15 kg	50 kg	B	40
				III	CORROSIVE KEEP AWAY FROM FOOD		154	213	240	25 kg	100 kg	B	40 95
	Corrosive solids, water-reactive, n o s.	8	UN3096	I	CORROSIVE, DANGEROUS WHEN WET	B105	None	211	243	1 kg	25 kg	D	
				II	CORROSIVE, DANGEROUS WHEN WET	B105	None	212	242	15 kg	50 kg	D	
DW	Cotton	9			CLASS 9	W41	None	None	None	No limit	No limit	A	
AtW	Cotton waste oily	4 2	UN1364	III	SPONTANEOUSLY COMBUSTIBLE	N9	None	213	None	Forbidden	Forbidden	A	54
AtW	Cotton, wet	4 2		III	SPONTANEOUSLY COMBUSTIBLE		None	204	241	Forbidden	Forbidden	A	
	Coumarin derivative pesticides liquid, flammable, toxic, *flashpoint less than 23 degrees C*	3	UN3024	I	FLAMMABLE LIQUID, POISON		None	201	243	Forbidden	30 L	B	40
				II	FLAMMABLE LIQUID, POISON		None	202	243	1 L	60 L	B	40
	Coumarin derivative pesticides, liquid, toxic	6 1	UN3026	I	POISON		None	201	243	1 L	30 L	B	40
				II	POISON		None	202	243	5 L	60 L	B	40
				III	KEEP AWAY FROM FOOD		153	203	241	60 L	220 L	A	40

§172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	Packing group	Label(s) required (if not excepted)	Special provisions	(8) Packaging authorizations (§173 ***)			(9) Quantity limitations		(10) Vessel stowage requirements	
							Exceptions	Non-bulk packaging	Bulk packaging	Passenger aircraft or railcar	Cargo aircraft only	Vessel stowage	Other stowage provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Coumarin derivative pesticides, liquid, toxic, flammable *flashpoint less than 23 degrees C*	6.1	UN3025	I	POISON, FLAMMABLE LIQUID		None	201	243	1 L	30 L	B	40
				II	POISON, FLAMMABLE LIQUID		None	202	243	5 L	60 L	B	40
				III	KEEP AWAY FROM FOOD, FLAMMABLE LIQUID.	B1	153	203	242	60 L	220 L	A	40
	Coumarin derivative pesticides, solid, toxic	6.1	UN3027	I	POISON		None	211	242	5 kg	50 kg	A	40
				II	POISON		None	212	242	25 kg	100 kg	A	40
				III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A	40
	Cresols	6.1	UN2076	II	POISON, CORROSIVE	B110, T8	None	202	243	1 L	30 L	B	
	Cresylic acid	6.1	UN2022	II	POISON, CORROSIVE	T8	None	202	243	1 L	30 L	B	
	Crotonaldehyde, stabilized	6.1	UN1143	I	POISON, FLAMMABLE LIQUID.	2, B9, B14, B32, B74, B77, T38, T43, T45.	None	227	244	Forbidden	30 L	B	40
	Crotonic acid *liquid*	8	UN2823	III	CORROSIVE		164	203	241	5 L	60 L	A	12
	Crotonic acid, *solid*	8	UN2823	III	CORROSIVE		164	213	240	25 kg	100 kg	A	12
	Crotonylene	3	UN1144	I	FLAMMABLE LIQUID	T20	150	201	243	1 L	30 L	E	
	Cuprietheylenediamine solution	8	UN1761	II	CORROSIVE, POISON	T8, T26	None	202	243	1 L	30 L	A	95
				III	CORROSIVE, KEEP AWAY FROM FOOD.	T7	154	203	242	5 L	60 L	A	95
	Cutters, cable, explosive	1.4S	UN0070	II	EXPLOSIVE 1.4S		None	62	None	25 kg	100 kg	A	
	Cyanide or cyanide mixtures, dry see Cyanides, inorganic, solid, n.o.s.												
	Cyanide solutions, n.o.s.	6.1	UN1935	I	POISON	B37, T18, T26	None	201	243	1 L	30 L	B	40 52
				II	POISON	T18, T26	None	202	243	5 L	60 L	A	40 52
				III	KEEP AWAY FROM FOOD	T18, T26	153	203	241	60 L	220 L	A	40 52
	Cyanides, inorganic, solid, n.o.s.	6.1	UN1588	I	POISON	N74, N75	None	211	242	5 kg	50 kg	A	52
				II	POISON	N74, N75	None	212	242	25 kg	100 kg	A	52
				III	KEEP AWAY FROM FOOD.	N74, N75	153	213	240	100 kg	200 kg	A	52
	Cyanogen bromide	6.1	UN1889	I	POISON, CORROSIVE	A8, A8	None	211	242	Forbidden	Forbidden	D	40
	Cyanogen chloride, inhibited	2.3	UN1589		POISON GAS, CORROSIVE	1	None	192	245	Forbidden	Forbidden	D	40
	Cyanogen, liquefied	2.3	UN1026		POISON GAS, FLAMMABLE GAS	2	None	192	245	Forbidden	Forbidden	D	40
	Cyanuric chloride	8	UN2670	II	CORROSIVE		None	212	240	15 kg	50 kg	A	12, 40
	Cyanuric fluoride	Forbidden											
	Cyclobutane	2.1	UN2601		FLAMMABLE GAS		306	304	314, 315	Forbidden	150 kg	B	40
	Cyclobutyl chloroformate	6.1	UN2744	II	POISON, CORROSIVE	T18	None	202	243	1 L	30 L	A	12, 13, 21, 26 40, 100
	1,5,9-Cyclododecatriene	6.1	UN2518	III	KEEP AWAY FROM FOOD.	T7	153	203	241	60 L	220 L	A	40
	Cycloheptane	3	UN2241	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	40
	Cycloheptatriene	3	UN2603	II	FLAMMABLE LIQUID, POISON.	T14	None	202	243	1 L	60 L	E	40
	Cycloheptene	3	UN2242	II	FLAMMABLE LIQUID	B1, T7	150	202	242	5 L	60 L	B	
	Cyclohexane	3	UN1145	II	FLAMMABLE LIQUID	B101, T8	150	202	242	5 L	60 L	E	
	Cyclohexanone	3	UN1915	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Cyclohexene	3	UN2256	II	FLAMMABLE LIQUID	B101, T7	150	202	242	5 L	60 L	E	
	Cyclohexenyltrichlorosilane	8	UN1762	II	CORROSIVE	A7, B2, N34, T8, T26.	None	202	242	Forbidden	30 L	C	40
	Cyclohexyl acetate	3	UN2243	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Cyclohexyl isocyanate	6.1	UN2488	II	POISON	2, B9, B14, B32, B74, B77, T38, T43, T45	None	227	244	5 L	60 L	D	40
	Cyclohexyl mercaptan	3	UN3054	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	40, 95
	Cyclohexylamine	8	UN2387	II	CORROSIVE, FLAMMABLE LIQUID	B100, T8, T26	None	202	243	1 L	30 L	A	40

	Cyclohexyltrichlorosilane	8	UN1763	II	CORROSIVE	A7, B2, N34, T8, T26	None	202	242	Forbidden	30 L	C	40
	Cyclonite and cyclotetramethylenetetranitramine mixtures, wetted or desensitized *see* RDX and HMX mixtures wetted or desensitized *etc* ed												
	Cyclonite and HMX mixtures, wetted or desensitized *see* RDX and HMX mixtures wetted or desensitized *etc*												
	Cyclonite and octogen mixtures, wetted or desensitized *see* RDX and HMX mixtures, wetted or desensitized *etc*												
	Cyclonite *see* Cyclotrimethylenetrinitramine, *etc.*												
	Cyclooctadiene phosphines, *see* 9-Phosphabicyclononanes												
	Cyclooctadienes	3	UN2520	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Cyclooctatetraene	3	UN2358	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	B	
	Cyclopentane	3	UN1146	II	FLAMMABLE LIQUID	B101, T14	150	202	242	5 L	60 L	E	
	Cyclopentane, methyl see Methylcyclopentane												
	Cyclopentanol	3	UN2244	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Cyclopentanone	3	UN2245	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Cyclopentene	3	UN2246	II	FLAMMABLE LIQUID	B101, T13	150	202	242	5 L	60 L	E	
	Cyclopropane, liquefied	2.1	UN1027		FLAMMABLE GAS		306	304	314, 315	Forbidden	150 kg	E	40
	Cyclotetramethylene tetranitramine (dry or unphlegmatized) (HMX)	Forbidden											
	Cyclotetramethylenetetranitramine, desensitized or Octogen, desensitized or HMX desensitized	1.1D	UN0484	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E
	Cyclotetramethylenetetranitramine, wetted or HMX wetted or Octogen, wetted *with not less than 15 percent water, by mass*	1.1D	UN0226	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E
	Cyclotrimethylenetrinitramine and octogen, mixtures, wetted or desensitized *see* RDX and HMX mixtures, wetted or desensitized *etc.*												
	Cyclotrimethylenetrinitramine and cyclotetramethylenetetranitramine mixtures wetted or desensitized *see* RDX and HMX mixtures, wetted or desensitized *etc.*												
	Cyclotrimethylenetrinitramine and HMX mixtures, wetted or desensitized *see* RDX and HMX mixtures wetted or desensitized *etc.*												
	Cyclotrimethylenetrinitramine, desensitized or Cyclonite, desensitized or Hexogen, desensitized or RDX, desensitized	1.1D	UN0483	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E
	Cyclotrimethylenetrinitramine, wetted or Cyclonite, wetted or Hexogen, wetted or RDX, wetted *with not less than 15 percent water by mass*	1.1D	UN0072	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E
	Cymenes	3	UN2046	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Decaborane	4.1	UN1868	II	FLAMMABLE SOLID, POISON.	A19, A20	None	212	None	Forbidden	50 kg	A	
	Decahydronaphthalene	3	UN1147	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	n Decane	3	UN2247	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Deflagrating metal salts of aromatic nitroderivatives, n o s	1.3C	UN0132	II	EXPLOSIVE 1.3C		None	62	None	Forbidden	Forbidden	B	1E, 5E
	Delay electric igniter, see Igniters												
D	Denatured alcohol	3	NA1986	I	FLAMMABLE LIQUID, POISON	T8, T31	None	201	243	Forbidden	30 L	E	40
				II	FLAMMABLE LIQUID, POISON.	T8, T31	None	202	243	1 L	60 L	E	40
				III	FLAMMABLE LIQUID, KEEP AWAY FROM FOOD.	B1, T8, T31	150	203	242	60 L	220 L	E	40
D	Denatured alcohol	3	NA1987	II	FLAMMABLE LIQUID	T8, T31	150	202	242	5 L	60 L	B	
				III	FLAMMABLE LIQUID	B1, T7, T30	150	203	242	60 L	220 L	A	
	Depth charges, see Charges, depth												
	Detonating relays see Detonators, *etc*												
	Detonator assemblies, non-electric *for blasting*	1.1B	UN0360	II	EXPLOSIVE 1.1B		None	62	None	Forbidden	Forbidden	B	2E, 6E
	Detonator assemblies, non-electric, *for blasting*	1.4B	UN0361	II	EXPLOSIVE 1.4B	103	63(f), 63(g)	62	None	Forbidden	75 kg	A	24E
	Detonators, electric, *for blasting*	1.1B	UN0030	II	EXPLOSIVE 1.1B		63(f) 63(g)	62	None	Forbidden	Forbidden	B	2E, 6E
	Detonators electric, *for blasting*	1.4B	UN0255	II	EXPLOSIVE 1.4B	103	63(f), 63(g)	62	None	Forbidden	75 kg	A	24E
	Detonators, electric *for blasting*	1.4S	UN0456	II	EXPLOSIVE 1.4S	104	63(f), 63(g)	62	None	25 kg	100 kg	A	
	Detonators for ammunition	1.1B	UN0073	II	EXPLOSIVE 1.1B		None	62	None	Forbidden	Forbidden	B	2E, 6E
	Detonators for ammunition	1.2B	UN0364	II	EXPLOSIVE 1.2B		None	62	None	Forbidden	Forbidden	B	2E, 6E
	Detonators for ammunition	1.4B	UN0365	II	EXPLOSIVE 1.4B	103	None	62	None	Forbidden	75 kg	A	24E
	Detonators for ammunition	1.4S	UN0366	II	EXPLOSIVE 1.4S	104	None	62	None	25 kg	100 kg	A	
	Detonators non-electric *for blasting*	1.1B	UN0029	II	EXPLOSIVE 1.1B		None	62	None	Forbidden	Forbidden	B	2E, 6E
	Detonators non-electric *for blasting*	1.4B	UN0267	II	EXPLOSIVE 1.4B	103	63(f), 63(g)	62	None	Forbidden	75 kg	A	24E
	Detonators non-electric *for blasting*	1.4S	UN0455	II	EXPLOSIVE 1.4S	104	None	62	None	25 kg	100 kg	A	
	Deuterium	2.1	UN1957		FLAMMABLE GAS		306	302	None	Forbidden	150 kg	E	40
	Devices small hydrocarbon gas powered or Hydrocarbon gas refills for small devices with *release device*	2.1	UN3150		FLAMMABLE GAS		306	304	None	Forbidden	150 kg	B	40
	Di-n-amylamine	3	UN2841	III	FLAMMABLE LIQUID, KEEP AWAY FROM FOOD	B1, T8	150	203	242	60 L	220 L	A	

§172 101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	Packing group	Label(s) required (if not excepted)	Special provisions	(8) Packaging authorizations (§173 ***) Exceptions	Non-bulk packaging	Bulk packaging	(9) Quantity limitations Passenger aircraft or railcar	Cargo aircraft only	(10) Vessel stowage requirements Vessel stowage	Other stowage provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Di-n-butyl peroxydicarbonate, with more than 52 percent in solution	Forbidden											
	Di-n-butylamine	8	UN2248	II	CORROSIVE, FLAMMABLE LIQUID.	T8	None	202	243	1 L	30 L	A	
	2,2-Di-(tert-butylperoxy) butane, with more than 55 percent in solution	Forbidden											
	Di-(tert-butylperoxy) phthalate, with more than 55 percent in solution	Forbidden											
	2,2-Di-(4 4-di-tert-butylperoxycyclohexyl) propane, with more than 42 percent with inert solid	Forbidden											
	Di-2 4-dichlorobenzoyl peroxide, with more than 75 percent with water	Forbidden											
	1,2-Di-(dimethylamino)ethane	3	UN2372	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	B	
	Di-2-ethylhexyl phosphoric acid, see Diisooctyl acid phosphate												
	Di-(1-hydroxytetrazole) (dry)	Forbidden											
	Di-(1-naphthoyl) peroxide	Forbidden											
	a,a'-Di-(nitroxy) methylether	Forbidden											
	Di-(beta-nitroxyethyl) ammonium nitrate	Forbidden											
	Diacetone alcohol	3	UN1148	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
				III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Diacetone alcohol peroxides, with more than 57 percent in solution with more than 9 percent hydrogen peroxide, less than 25 percent diacetone alcohol and less than 9 percent water, total active oxygen content more than 9 percent by mass	Forbidden											
	Diacetyl, see Butanedione												
	Diacetyl peroxide, solid, or with more than 25 percent in solution	Forbidden											
	Diallylamine	3	UN2359	II	FLAMMABLE LIQUID, POISON, CORROSIVE.	T8	None	202	243	1 L	5 L	B	21, 40, 100
	Diallylether	3	UN2360	II	FLAMMABLE LIQUID, POISON.	N12, T8	None	202	243	1 L	60 L	E	40
	4,4'-Diaminodiphenyl methane	6.1	UN2651	III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A	
	p-Diazidobenzene	Forbidden											
	1,2-Diazidoethane	Forbidden											
	1,1'-Diazoaminonaphthalene	Forbidden											
	Diazoaminotetrazole (dry)	Forbidden											
	Diazodinitrophenol (dry)	Forbidden											
	Diazodinitrophenol, wetted with not less than 40 percent water or mixture of alcohol and water by mass	1 1A	UN0074	II	EXPLOSIVE 1 1A	111, 117	None	62	None	Forbidden	Forbidden	E	2E 6E
	Diazodiphenylmethane	Forbidden											
	Diazonium nitrates (dry)	Forbidden											
	Diazonium perchlorates (dry)	Forbidden											
	1 3-Diazopropane	Forbidden											
	Dibenzyl peroxydicarbonate, with more than 87 percent with water	Forbidden											
	Dibenzyldichlorosilane	8	UN2434	II	CORROSIVE	B2, T8, T26	154	202	242	1 L	30 L	C	40
	Diborane	2.3	UN1911		POISON GAS, FLAMMABLE GAS.	1	None	302	None	Forbidden	Forbidden	D	40 57
	Diborane mixtures	2 1	NA1911		FLAMMABLE GAS	5	None	302	245	Forbidden	Forbidden	D	40, 57
	Dibromoacetylene	Forbidden											
	Dibromobenzene	3	UN2711	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	1,2-Dibromobutan-3-one	6 1	UN2648	II	POISON		None	202	243	5 L	60 L	B	40
	Dibromochloropropane	6.1	UN2872	III	KEEP AWAY FROM FOOD	T7	153	203	241	60 L	220 L	A	
A	Dibromodifluoromethane, *R12B2*	9	UN1941	III	None	T22	155	203	241	100 L	220 L	A	25
	1,2-Dibromoethane, see Ethylene dibromide												
	Dibromomethane	6 1	UN2664	III	KEEP AWAY FROM FOOD	T7	153	203	241	60 L	220 L	A	
	Dibutyl ethers	3	UN1149	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Dibutylaminoethanol	6.1	UN2873	III	KEEP AWAY FROM FOOD	T1	153	203	241	60 L	220 L	A	
	N,N'-Dichlorazodicarbonamidine (salts of) (dry)	Forbidden											
	1,1-Dichloro-1-nitroethane	6 1	UN2650	II	POISON	T8	None	202	243	5 L	60 L	A	12 40
D	3,5-Dichloro-2,4 6-trifluoropyridine	6 1	NA9264	I	POISON	2, B9, B14, B32, B74, T38, T43, TP5	None	227	244	Forbidden	Forbidden	A	40, 95
	Dichloroacetic acid	8	UN1764	II	CORROSIVE	A3, A6, A7, B2, N34, T9 T27	154	202	242	1 L	30 L	A	

chloroacetone	6.1	UN2649	II	POISON		None	212	242	25 kg	100 kg	B	18, 40
loroacetyl chloride	8	UN1765	II	CORROSIVE	A3, A6, A7, B2 B6, N34, T8, T26.	154	202	242	1 L	30 L	D	40
chloroacetylene	Forbidden											
ichloroanilines, liquid	6.1	UN1590	II	POISON	T14	None	202	243	5 L	60 L	A	40
ichloroanilines, solid	6.1	UN1590	III	POISON	T14	None	212	242	25 kg	100 kg	A	40
o-Dichlorobenzene	6.1	UN1591	III	KEEP AWAY FROM FOOD.	T7	153	203	241	60 L	220 L	A	
Dichlorobutene	8	NA2920	I	CORROSIVE, FLAMMABLE LIQUID.		None	201	243	0.5 L	2.5 L	C	12, 21, 25 40, 48
2,2'-Dichlorodiethyl ether	6.1	UN1916	II	POISON, FLAMMABLE LIQUID.	N33, N34, T8	None	202	243	5 L	60 L	A	
Dichlorodifluoromethane and difluoroethane azeotropic mixture with approximately 74 percent dichlorodifluoromethane, R500	2.2	UN2602		NONFLAMMABLE GAS		306	304	314, 315	75 kg	150 kg	A	
Dichlorodifluoromethane, R12	2.2	UN1028		NONFLAMMABLE GAS		306	304	314, 315	75 kg	150 kg	A	
Dichlorodimethyl ether, symmetrical	6.1	UN2249	I	POISON	T36	None	201	243	Forbidden	Forbidden	D	40
1,1-Dichloroethane	3	UN2362	II	FLAMMABLE LIQUID	B101, T7	150	202	242	5 L	60 L	B	40
1,2-Dichloroethane, see Ethylene dichloride												
Dichloroethyl sulfide	Forbidden											
Dichloroethylene	3	UN1150	II	FLAMMABLE LIQUID	T14	150	202	242	5 L	60 L	B	
Dichlorofluoromethane, R21	2.2	UN1029		NONFLAMMABLE GAS		306	304	314, 315	75 kg	150 kg	A	
Dichloroisocyanuric acid, dry or Dichlorohsocyanuric acid salts	5.1	UN2465	II	OXIDIZER	23	152	212	240	5 kg	25 kg	A	13
Dichloroisopropyl ether	6.1	UN2490	II	POISON	T8	None	202	243	5 L	60 L	B	
Dichloromethane	6.1	UN1593	III	KEEP AWAY FROM FOOD.	N36, T13	153	203	241	60 L	220 L	A	
Dichloropentanes	3	UN1152	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
Dichlorophenyl isocyanates	6.1	UN2250	II	POISON		None	212	242	25 kg	100 kg	A	25, 40 48
Dichlorophenyltrichlorosilane	8	UN1766	II	CORROSIVE	A7, B3, B6, N34, T8, T26.	None	202	242	Forbidden	30 L	C	40
Dichloropropane, see Propylene dichloride												
1,3-Dichloropropene-2	6.1	UN2750	II	POISON	T8	None	202	243	5 L	60 L	A	12 40
Dichloropropene and propylene dichloride mixture, see Propylene dichloride												
Dichloropropenes	3	UN2047	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	B	
			III	FLAMMABLE LIQUID	B1, T8	150	203	242	60 L	220 L	A	
Dichlorosilane	2.3	UN2189		POISON GAS, FLAMMABLE GAS, CORROSIVE.	2, B9, B14	None	304	314, 315	Forbidden	Forbidden	D	17, 40
Dichlorotetrafluoroethane, R114	2.2	UN1958		NONFLAMMABLE GAS		306	304	314, 315	75 kg	150 kg	A	
Dicidopentadiene, see Propylene dichloride	Forbidden											
Dicyclohepadiene, see 2,5-Norbornadiene												
Dicyclohexylamine	8	UN2565	III	CORROSIVE	T8	154	203	241	5 L	60 L	A	
Dicyclohexylammonium nitrite	4.1	UN2687	III	FLAMMABLE SOLID		153	213	240	25 kg	100 kg	A	48
Dicyclopentadiene	3	UN2048	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
Didymium nitrate	5.1	UN1465	III	OXIDIZER	A1	153	213	240	25 kg	100 kg	A	
D Dieldrin	6.1	NA2761	II	POISON		None	212	242	0.5 kg	5 kg	A	40
D Diesel fuel	3	NA1993	III	None	B1	150	203	242	60 L	220 L	A	
Diethanol nitrosamine dinitrate (dry)	Forbidden											
Diethoxymethane	3	UN2373	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	E	
3,3-Diethoxypropene	3	UN2374	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
Diethyl carbonate	3	UN2366	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
Diethyl cellosolve, see Ethylene glycol diethyl ether												
Diethyl ether or Ethyl ether	3	UN1155	I	FLAMMABLE LIQUID	T21	150	201	243	1 L	30 L	E	40
Diethyl ketone	3	UN1156	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
Diethyl peroxydicarbonate, with more than 27 percent in solution	Forbidden											
Diethyl sulfate	6.1	UN1594	II	POISON	B101, T14	None	202	243	5 L	60 L	C	
Diethyl sulfide	3	UN2375	II	FLAMMABLE LIQUID	B101, T14	None	202	243	1 L	60 L	E	
Diethylamine	3	UN1154	II	FLAMMABLE LIQUID, CORROSIVE.	B101, N34, T8	None	202	243	1 L	5 L	E	40
Diethylaminoethanol	3	UN2686	III	FLAMMABLE LIQUID	B1, T1	150	203	240	60 L	220 L	A	
Diethylaminopropylamine	3	UN2684	III	FLAMMABLE LIQUID, CORROSIVE	B1, T8	150	203	242	5 L	60 L	A	
N,N-Diethylaniline	6.1	UN2432	III	KEEP AWAY FROM FOOD	T2	153	203	241	60 L	220 L	A	
Diethylbenzene	3	UN2049	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
Diethylidichlorosilane	8	UN1767	II	CORROSIVE, FLAMMABLE LIQUID.	A7, B6, B100, N34, T8, T26.	None	202	243	Forbidden	30 L	C	40
Diethylene glycol dinitrate	Forbidden											
Diethyleneglycol dinitrate, desensitized with not less than 25 percent non volatile water-insoluble phlegmatizer, by mass	1.1D	UN0075	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E, 4E, 21E
Diethylenetriamine	8	UN2079	II	CORROSIVE	B6, T8	154	202	242	1 L	30 L	A	40

§172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	Packing group	Label(s) required (if not excepted)	Special provisions	(8) Packaging authorizations (§173.***) Exceptions	Non-bulk packaging	Bulk packaging	(9) Quantity limitations Passenger aircraft or railcar	Cargo aircraft only	(10) Vessel stowage requirements Vessel stowage	Other stowage provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	N,N-Diethylethylenediamine	8	UN2685	II	CORROSIVE, FLAMMABLE LIQUID	T8	None	202	243	1 L	30 L	A	
	Diethylgold bromide	Forbidden											
	Diethylthiophosphoryl chloride	6	UN2751	II	CORROSIVE	B2, T8	None	212	240	15 kg	50 kg	C	40
	Diethylzinc	4.2	UN1366	I	SPONTANEOUSLY COMBUSTIBLE.	B11, T28, T40	None	181	244	Forbidden	Forbidden	D	18
	Difluorochloroethanes see 1-Chloro-1,1-difluoroethanes												
	1,1-Difluoroethane, *R152a*	2.1	UN1030		FLAMMABLE GAS		306	304	314, 315	Forbidden	150 kg	B	40
	1,1-Difluoroethylene, *R1132a*	2.1	UN1959		FLAMMABLE GAS		306	304	None	Forbidden	150 kg	E	40
	Difluoromethane	2.1	UN3252		FLAMMABLE GAS		306	302	314, 315	Forbidden	150 kg	D	40
	Difluorophosphoric acid, anhydrous	8	UN1768	II	CORROSIVE	A6, A7, B2, N5, N34, T9, T27	None	202	242	1 L	30 L	A	40
	2,3-Dihydropyran	3	UN2376	II	FLAMMABLE LIQUID	T7	150	202	242	5 L	60 L	B	
	1,8-Dihydroxy-2,4,5,7-tetranitroanthraquinone (chrysamminic acid)	Forbidden											
	Diiodoacetylene	Forbidden											
	Diisobutyl ketone	3	UN1157	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Diisobutylamine	3	UN2361	III	FLAMMABLE LIQUID, CORROSIVE	B1, T1	150	203	242	5 L	60 L	A	
	Diisobutylene isomeric compounds	3	UN2050	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
	Diisooctyl acid phosphate	8	UN1902	III	CORROSIVE	T7	154	203	241	5 L	60 L	A	
	Diisopropyl ether	3	UN1159	II	FLAMMABLE LIQUID	B101, T8	150	202	242	5 L	60 L	E	40
	Diisopropylamine	3	UN1158	II	FLAMMABLE LIQUID, CORROSIVE	B101, T8	None	202	243	1 L	5 L	B	
	Diisopropylbenzene hydroperoxide, with more than 72 percent in solution	Forbidden											
	Diketene, inhibited	6.1	UN2521	I	POISON, FLAMMABLE LIQUID.	2, B9, B14, B32, B74, T38, T43, T45.	None	227	244	Forbidden	Forbidden	D	40, 49
	1,2-Dimethoxyethane	3	UN2252	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
	1,1-Dimethoxyethane	3	UN2377	II	FLAMMABLE LIQUID	T10	150	202	242	5 L	60 L	B	
	Dimethyl carbonate	3	UN1161	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	B	
	Dimethyl chlorothiophosphate, see Dimethyl thiophosphoryl chloride												
	2,5-Dimethyl-2,5-dihydroperoxy hexane, with more than 82 percent with water	Forbidden											
	Dimethyl disulfide	3	UN2381	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	B	40
	Dimethyl ether	2.1	UN1033		FLAMMABLE GAS		306	304	314 315	Forbidden	150 kg	B	40
	[illegible]imethyl-N-propylamine	3	UN2266	II	FLAMMABLE LIQUID, CORROSIVE	T14, T26	None	202	243	1 L	5 L	B	40
	[illegible]yl sulfate	6.1	UN1595	I	POISON, CORROSIVE	2, B9, B14, B32, B74, B77, T38, T43, T45	None	227	244	Forbidden	Forbidden	D	40
	[illegible]ide	3	UN1164	II	FLAMMABLE LIQUID	B100, T14	None	202	242	5 L	60 L	E	40
	[illegible]osphoryl chloride	6.1	UN2267	II	POISON, CORROSIVE	T7	None	202	243	1 L	30 L	B	25
	[illegible]nhydrous	2.1	UN1032		FLAMMABLE GAS		None	304	314, 315	Forbidden	150 kg	D	40
	[illegible]	3	UN1160	II	FLAMMABLE LIQUID, CORROSIVE.	T8, T34	None	202	243	1 L	5 L	B	
	[illegible]	3	UN2379	II	FLAMMABLE LIQUID, POISON.	T8	None	202	243	1 L	60 L	A	26, 40
	[illegible]	8	UN2051	II	CORROSIVE, FLAMMABLE LIQUID.	B2, T8	154	202	243	1 L	30 L	A	
	[illegible]	6.1	UN2522	II	POISON	T8	None	202	243	5 L	60 L	B	40
	[illegible]	6.1	UN2263	II	POISON	T8	None	202	243	5 L	60 L	A	
	[illegible]	3	UN2457	II	FLAMMABLE LIQUID	T13	150	202	242	5 L	60 L	E	
	[illegible]	3	UN2379	II	FLAMMABLE LIQUID, CORROSIVE	T8	None	202	243	1 L	5 L	B	
	[illegible]	8	UN2262	II	CORROSIVE	B2, T8	154	202	242	1 L	30 L	A	40
	[illegible]	3	UN2263	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
	[illegible]	8	UN2264	II	CORROSIVE, FLAMMABLE LIQUID	B2, T8	154	202	243	1 L	30 L	A	

Dimethyldichlorosilane	3	UN1162	II	FLAMMABLE LIQUID, CORROSIVE	B77 T15, T26	None	202	243	Forbidden	Forbidden	B	40
Dimethyldiethoxysilane	3	UN2380	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	B	
Dimethyldioxanes	3	UN2707	II	FLAMMABLE LIQUID	T8 T31	150	202	242	5 L	60 L	B	
			III	FLAMMABLE LIQUID	B1 T7, T30	150	203	242	60 L	220 L	A	
N,N-Dimethylformamide	3	UN2265	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
Dimethylhexane dihydroperoxide (dry)	Forbidden											
Dimethylhydrazine symmetrical	6.1	UN2382	I	POISON, FLAMMABLE LIQUID.	2, A7, B9, B14, B32, B74, B77 T38, T43 T45	None	227	244	Forbidden	Forbidden	D	40
Dimethylhydrazine, unsymmetrical	6.1	UN1163	I	POISON, FLAMMABLE LIQUID, CORROSIVE.	2, B9, B14, B32, B74, B79, T38, T43, T45.	None	227	244	Forbidden	Forbidden	D	31, 38, 40 100
2,2-Dimethylpropane	2.1	UN2044		FLAMMABLE GAS		306	304	314, 318	Forbidden	150 kg	E	40
Dimethylzinc	4.2	UN1370	I	SPONTANEOUSLY COMBUSTIBLE.	B11, B16, T28, T29, T40.	None	181	244	Forbidden	Forbidden	D	18
Dinitro-o-cresol, *solid*	6.1	UN1598	II	POISON	T14	None	212	242	25 kg	100 kg	A	
Dinitro-o-cresol, *solution*	6.1	UN1598	II	POISON	T14	None	202	243	5 L	60 L	A	
1,8-Dinitro-3,5-dimethyl hydantoin	Forbidden											
Dinitro-7,8-dimethylglycoluril (dry)	Forbidden											
1,3-Dinitro-4,5-dinitrosobenzene	Forbidden											
1,4-Dinitro-1,1,4,4-tetramethylbutanetetranitrate (dry)	Forbidden											
2,4-Dinitro-1,3,5-trimethylbenzene	Forbidden											
Dinitroanilines	6.1	UN1596	II	POISON	T14	None	212	242	25 kg	100 kg	A	91
Dinitrobenzenes, *liquid*	6.1	UN1597	II	POISON	11, T14	None	202	243	5 L	60 L	A	91
Dinitrobenzenes *solid*	6.1	UN1597	II	POISON	11	None	212	242	25 kg	100 kg	A	91
Dinitrochlorobenzene, see Chlorodinitrobenzene												
1,8-Dinitrooctane	Forbidden											
1,1-Dinitroethane (dry)	Forbidden											
Dinitrogen tetroxide, liquefied	2.3	UN1067		POISON GAS, OXIDIZER, CORROSIVE	1, B7, B12, B14, B45, B46, B61, B68, B67, B77	None	336	314	Forbidden	Forbidden	D	40, 89 90
Dinitroglycoluril or Dingu	1.1D	UN0489	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E
Dinitromethane	Forbidden											
Dinitrophenol, *dry or wetted with less than 15 percent water, by mass*	1.1D	UN0076	II	EXPLOSIVE 1.1D, POISON.		None	62	None	Forbidden	Forbidden	B	1E, 5E
Dinitrophenol solutions	6.1	UN1599	II	POISON	T8	None	202	243	5 L	60 L	A	36
			III	KEEP AWAY FROM FOOD	T7	153	203	241	60 L	220 L	A	36
Dinitrophenol, wetted with *not less than 15 percent water, by mass*	4.1	UN1320	I	FLAMMABLE SOLID, POISON.	23, A8, A19, A20, N41	None	211	None	1 kg	15 kg	E	28 36
Dinitrophenolates *alkali metals, dry or wetted with less than 15 percent water, by mass*	1.3C	UN0077	II	EXPLOSIVE 1.3C, POISON.		None	62	None	Forbidden	Forbidden	B	1E, 5E
Dinitrophenolates, wetted with *not less than 15 percent water, by mass*	4.1	UN1321	I	FLAMMABLE SOLID, POISON.	23, A8, A19, A20, N41	None	211	None	1 kg	15 kg	E	28 36
Dinitropropylene glycol	Forbidden											
Dinitroresorcinol, *dry or wetted with less than 15 percent water, by mass*	1.1D	UN0078	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E
2,4-Dinitroresorcinol (heavy metal salts of) (dry)	Forbidden											
4,6-Dinitroresorcinol (heavy metal salts of) (dry)	Forbidden											
Dinitroresorcinol, wetted with *not less than 15 percent water, by mass*	4.1	UN1322	I	FLAMMABLE SOLID	23, A8, A19, A20, N41	None	211	None	1 kg	15 kg	E	28, 36
3,5-Dinitrosalicylic acid (lead salt) (dry)	Forbidden											
Dinitrosobenzene	1.3C	UN0406	II	EXPLOSIVE 1.3C		None	62	None	Forbidden	Forbidden	B	1E, 5E
Dinitrosobenzylamidine *and salts of (dry)*	Forbidden											
2,3-Dinitrotoluene	Forbidden											
Dinitrotoluenes, *liquid*	6.1	UN2038	II	POISON	T8	None	202	243	5 L	60 L	A	
Dinitrotoluenes, *molten*	6.1	UN1600	II	POISON	B100, T14	None	202	243	Forbidden	Forbidden	C	
Dinitrotoluenes, *solid*	6.1	UN2038	II	POISON	T8	None	212	242	25 kg	100 kg	A	
1,8-Dinitroxy pentamethylene-2,4, 6,8-tetramine (dry)	Forbidden											
Dioxane	3	UN1165	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	B	
Dioxolane	3	UN1166	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	B	40
Dipentene	3	UN2052	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
Diphenylamine chloroarsine	6.1	UN1698	I	POISON		None	201	None	Forbidden	Forbidden	D	40
Diphenylchloroarsine liquid	6.1	UN1699	I	POISON	A8, B14, B32, N33, N34	None	201	242	Forbidden	30 L	D	40
Diphenylchloroarsine solid	6.1	UN1698	I	POISON	A8, B14, B32, N33, N34.	None	211	242	Forbidden	15 kg	D	40
Diphenyldichlorosilane	8	UN1769	II	CORROSIVE	A7, B2, R34, T8, T26.	None	202	242	Forbidden	30 L	C	40
Diphenylmethane-4,4'diisocyanate	6.1	UN2489	III	KEEP AWAY FROM FOOD.	T8	153	203	241	60 L	220 L	A	40
Diphenylmethyl bromide	8	UN1770	II	CORROSIVE		154	212	240	15 kg	50 kg	D	40
Dipicryl sulfide *dry or wetted with less than 10 percent water by mass*	1.1D	UN0401	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E

§172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols (1)	Hazardous materials descriptions and proper shipping names (2)	Hazard class or Division (3)	Identification Numbers (4)	Packing group (5)	Label(s) required (if not excepted) (6)	Special provisions (7)	(8) Packaging authorizations (§173 ***) Exceptions (8A)	Non-bulk packaging (8B)	Bulk packaging (8C)	(9) Quantity limitations Passenger aircraft or railcar (9A)	Cargo aircraft only (9B)	(10) Vessel stowage requirements Vessel stowage (10A)	Other stowage provisions (10B)
	Dipicryl sulfide, wetted *with not less than 10 percent water, by mass*	4.1	UN2852	I	FLAMMABLE SOLID	A2, N41	None	211	None	Forbidden	0.5 kg	D	28
	Diphenylamine *see* Hexanitrodiphenylamine												
	Dipropionyl peroxide, with more than 28 percent in solution	Forbidden											
	Dipropyl ether	3	UN2384	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
	Dipropyl ketone	3	UN2710	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Dipropylamine	3	UN2383	II	FLAMMABLE LIQUID, CORROSIVE	T8	None	202	243	1 L	5 L	B	
	Disinfectants, liquid corrosive n.o.s.	8	UN1903	II	CORROSIVE	B2	154	202	242	1 L	30 L	B	
				III	CORROSIVE		154	203	241	5 L	60 L	A	
	Disinfectants, liquid, toxic, n.o.s.	6.1	UN3142	I	POISON	A4, T42	None	201	243	1 L	30 L	A	40
				II	POISON	T14	None	202	243	5 L	60 L	A	40
				III	KEEP AWAY FROM FOOD	T7	153	203	241	60 L	220 L	A	40
	Disinfectants, solid, toxic, n.o.s.	6.1	UN1601	II	POISON		None	212	242	25 kg	100 kg	A	40
				III	KEEP AWAY FROM FOOD		153	213	240	100 kg	200 kg	A	40
	Disodium trioxosilicate, pentahydrate	8	UN3253	III	CORROSIVE		154	213	240	25 kg	100 kg	A	
	Dispersant gases n.o.s. *see* Refrigerant gases, n.o.s.												
	Dithiocarbamate pesticides, liquid, flammable toxic, *flash point less than 23 degrees C*	3	UN2772	I	FLAMMABLE LIQUID, POISON		None	201	243	Forbidden	30 L	B	40
				II	FLAMMABLE LIQUID, POISON		None	202	243	1 L	60 L	B	40
				III	FLAMMABLE LIQUID, KEEP AWAY FROM FOOD	B1	150	203	242	60 L	220 L	B	40
	Dithiocarbamate pesticides, liquid, toxic	6.1	UN3006	I	POISON	T42	None	201	243	1 L	30 L	B	40
				II	POISON	T14	None	202	243	5 L	60 L	B	40
				III	KEEP AWAY FROM FOOD.	T14	153	203	241	60 L	220 L	A	40
	Dithiocarbamate pesticides liquid, toxic, flammable *flashpoint not less than 23 degrees C*	6.1	UN3005	I	POISON, FLAMMABLE LIQUID	T42	None	201	243	1 L	30 L	B	40
				II	POISON, FLAMMABLE LIQUID	T14	None	202	243	5 L	60 L	B	40
				III	KEEP AWAY FROM FOOD, FLAMMABLE LIQUID	T14	153	203	242	60 L	220 L	A	40
	Dithiocarbamate pesticides solid, toxic	6.1	UN2771	I	POISON		None	211	242	5 kg	50 kg	A	40
				II	POISON		None	212	242	25 kg	100 kg	A	40
				III	KEEP AWAY FROM FOOD		153	213	240	100 kg	200 kg	A	40
	Divinyl ether, inhibited	3	UN1167	I	FLAMMABLE LIQUID	T14	None	201	243	5 L	60 L	E	40
D	Dodecylbenzenesulfonic acid	8	NA2584	II	CORROSIVE	B2	154	202	242	1 L	30 L	B	9
	Dodecyltrichlorosilane	8	UN1771	II	CORROSIVE	A7, B2, B6, N34, T8, T26.	None	202	242	Forbidden	30 L	C	40
	Dry ice, *see* Carbon dioxide, solid												
	Dyes, liquid corrosive n.o.s. *or* Dye intermediates, liquid, corrosive, n.o.s.	8	UN2801	II	CORROSIVE	11, B2, T14	154	202	242	1 L	30 L	A	
				III	CORROSIVE	11, T7	154	203	241	5 L	60 L	A	
	Dyes, liquid, toxic, n.o.s. *or* Dye intermediates, liquid, toxic, n.o.s.	6.1	UN1602	II	POISON		None	202	243	5 L	60 L	A	
				III	KEEP AWAY FROM FOOD.		153	203	241	60 L	220	A	
	Dyes, solid, corrosive n.o.s. or Dye intermediates solid, corrosive n.o.s.	8	UN3147	II	CORROSIVE		154	212	240	15 kg	50 kg	A	
				III	CORROSIVE		154	213	240	25 kg	100 kg	A	
	Dyes, solid toxic, n.o.s. *or* Dye intermediates, solid toxic, n.o.s.	6.1	UN3143	I	POISON	A5	None	211	242	5 kg	50 kg	A	
				II	POISON		None	212	242	25 kg	100 kg	A	
				III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A	
	Dynamite see Explosive, blasting type A												
	Electrolyte (acid or alkali) for batteries see Battery fluid acid or Battery fluid, alkali												
	Elevated temperature liquid, flammable n.o.s. *with flash point above 37.8 [illegible] or above its flash point*	3	UN3256	III	FL[illegible]LE LIQUID	T1	None	None	247	Forbidden	Forbidden	A	

Elevated temperature liquid, n.o.s., *at or above 100 C and below its flash point*	9	UN3257	III	CLASS 9	T1	None	None	247	Forbidden	Forbidden	A	86
Elevated temperature solid, n.o.s., *at or above 240 C, see section 173.247(h)(4)*	9	UN3258	III	CLASS 9		247(h)(4)	None	247	Forbidden	Forbidden	A	86
Engine starting fluid *with flammable gas*	2.1	UN1960		FLAMMABLE GAS		None	304	None	Forbidden	150 kg	D	40
Engines, internal combustion, *including when fitted in machinery or vehicles*	9	UN3166		CLASS 9		220	220	None	Forbidden	No limit	A	
Environmentally hazardous substances, liquid, n.o.s.	9	UN3082	III	CLASS 9	8, N50, T1	155	203	241	None	None	A	
Environmentally hazardous substances, solid, n.o.s.	9	UN3077	III	CLASS 9	8, N50, B54	155	213	240	None	None	A	
Epibromohydrin	6.1	UN2558	I	POISON	T18, T26	None	201	243	Forbidden	Forbidden	D	40
Epichlorohydrin	6.1	UN2023	II	POISON	T14	None	202	243	5 L	60 L	A	40
1,2-Epoxy-3-ethoxypropane	3	UN2752	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
Esters, n.o.s.	3	UN3272	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	B	
			III	FLAMMABLE LIQUID	B1, T7	150	203	242	60 L	220 L	A	
Etching acid, liquid, n.o.s. see Hydrofluoric acid, solution etc.												
Ethane, compressed	2.1	UN1035		FLAMMABLE GAS		306	304	302	Forbidden	150 kg	E	40
D Ethane-Propane mixture, refrigerated liquid	2.1	NA1961		FLAMMABLE GAS		None	316	314, 315	Forbidden	Forbidden	D	40
Ethane, refrigerated liquid	2.1	UN1961		FLAMMABLE GAS		None	None	315	Forbidden	Forbidden	D	40
Ethanol amine dinitrate	Forbidden											
Ethanol *or* Ethyl alcohol *or* Ethanol solutions *or* Ethyl alcohol solutions	3	UN1170	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	A	
			III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
Ethanolamine *or* Ethanolamine solutions	8	UN2491	III	CORROSIVE	T7	154	203	241	5 L	60 L	A	
Ether see Diethyl ether												
Ethers, n.o.s.	3	UN3271	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	B	
			III	FLAMMABLE LIQUID	B1, T7	150	203	242	60 L	220 L	A	
Ethyl acetate	3	UN1173	II	FLAMMABLE LIQUID	T2	150	202	242	5 L	60 L	B	
Ethyl acrylate inhibited	3	UN1917	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	B	40
Ethyl alcohol *see* Ethanol												
Ethyl aldehyde, see Acetaldehyde												
Ethyl amyl ketone	3	UN2271	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
N-Ethyl-N-benzylaniline	6.1	UN2274	III	KEEP AWAY FROM FOOD	T2	153	203	241	60 L	220 L	A	
Ethyl borate	3	UN1176	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	B	
Ethyl bromide	6.1	UN1891	II	POISON	B100, T17	None	202	243	5 L	60 L	B	40, 85
Ethyl bromoacetate	6.1	UN1603	II	POISON	T14	None	202	243	Forbidden	Forbidden	D	40
Ethyl butyl ether	3	UN1179	II	FLAMMABLE LIQUID	B1, B101, T1	150	202	242	5 L	60 L	B	
Ethyl butyrate	3	UN1180	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
Ethyl chloride	2.1	UN1037		FLAMMABLE GAS	B63, B77	None	322	314, 315	Forbidden	150 kg	B	40
Ethyl chloroacetate	6.1	UN1181	II	POISON	T14	None	202	243	5 L	60 L	A	
Ethyl chloroformate	6.1	UN1182	I	POISON, FLAMMABLE LIQUID, CORROSIVE	2, A3, A6, A7, B9, B14, B32, B74, N34, T38, T43, T45	None	227	244	Forbidden	Forbidden	D	21, 40, 100
Ethyl 2-chloropropionate	3	UN2935	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
+ Ethyl chlorothioformate	6	UN2826	II	CORROSIVE, POISON, FLAMMABLE LIQUID	2, B9, B14, B32, B74, T38, T43, T45	None	227	244	Forbidden	Forbidden	A	40
Ethyl crotonate	3	UN1862	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
Ethyl cyanoacetate	6.1	UN2666	III	KEEP AWAY FROM FOOD	T8	153	203	241	60 L	220 L	A	26
Ethyl ether, *see* Diethyl ether												
Ethyl fluoride	2.1	UN2453		FLAMMABLE GAS		306	304	314, 315	Forbidden	150 kg	E	40
Ethyl formate	3	UN1190	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	E	
Ethyl hydroperoxide	Forbidden											
Ethyl isobutyrate	3	UN2385	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
+ Ethyl isocyanate	3	UN2481	I	FLAMMABLE LIQUID, POISON	1, A7, B9, B14, B30, B72, T38, T43, T44	None	226	244	Forbidden	30 L	D	40
Ethyl lactate	3	UN1192	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
Ethyl mercaptan	3	UN2363	I	FLAMMABLE LIQUID	T21	None	201	243	Forbidden	30 L	E	95, 102
Ethyl methacrylate	3	UN2277	II	FLAMMABLE LIQUID	T1	150	202	243	5 L	60 L	B	
Ethyl methyl ether	2.1	UN1039		FLAMMABLE GAS	B63	None	324	314, 315	Forbidden	150 kg	B	40
Ethyl methyl ketone *or* Methyl ethyl ketone	3	UN1193	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	B	
Ethyl nitrite solutions	3	UN1194	I	FLAMMABLE LIQUID, POISON		None	201	None	Forbidden	Forbidden	E	40, 105
Ethyl orthoformate	3	UN2524	III	FLAMMABLE LIQUID	B1, T7	150	203	242	60 L	220 L	A	
Ethyl oxalate	6.1	UN2525	III	KEEP AWAY FROM FOOD	T1	153	203	241	60 L	220 L	A	
Ethyl perchlorate	Forbidden											
D Ethyl phosphonothioic dichloride, anhydrous	6.1	NA2927	I	POISON, CORROSIVE	2, B9, B14, B32, B74, T38, T43, T45	None	227	244	Forbidden	Forbidden	D	20, 40, 95

§172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	Packing group	Label(s) required (if not excepted)	Special provisions	(8) Packaging authorizations (§173.***) Exceptions	Non-bulk packaging	Bulk packaging	(9) Quantity limitations Passenger aircraft or railcar	Cargo aircraft only	(10) Vessel stowage requirements Vessel stowage	Other stowage provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
D	Ethyl phosphonous dichloride anhydrous *pyrophoric liquid*	6.1	NA2845	I	POISON, SPONTANEOUSLY COMBUSTIBLE.	2, B9, B14, B32, B74, T38, T43, T45.	None	227	244	Forbidden	Forbidden	D	18
D	Ethyl phosphorodichloridate	6.1	NA2927	I	POISON, CORROSIVE	2, B9, B14, B32, B74, T38, T43, T45.	None	227	244	Forbidden	Forbidden	D	20, 40 95
	Ethyl propionate	3	UN1195	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
	Ethyl propyl ether	3	UN2615	II	FLAMMABLE LIQUID	B101, T8	150	202	242	5 L	60 L	E	
	Ethyl silicate, see Tetraethyl silicate												
	Ethylacetylene inhibited	2.1	UN2452		FLAMMABLE GAS		None	304	314, 315	Forbidden	150 kg	B	40
	Ethylamine	2.1	UN1036		FLAMMABLE GAS	B77	None	321	314, 315	Forbidden	150 kg	D	40
	Ethylamine, aqueous solution *with not less than 50 percent but not more than 70 percent ethylamine*	3	UN2270	II	FLAMMABLE LIQUID, CORROSIVE.	T14	None	202	243	1 L	5 L	B	40
	N-Ethylaniline	6.1	UN2272	III	KEEP AWAY FROM FOOD.	T2	153	203	241	60 L	220 L	A	
	2-Ethylaniline	6.1	UN2273	III	KEEP AWAY FROM FOOD	T2	153	203	241	60 L	220 L	A	
	Ethylbenzene	3	UN1175	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
	N-Ethylbenzyltoluidines liquid	6.1	UN2753	III	KEEP AWAY FROM FOOD.	T14	153	203	241	60 L	220 L	A	
	N-Ethylbenzyltoluidines solid	6.1	UN2753	III	KEEP AWAY FROM FOOD		153	213	240	100 kg	200 kg	A	
	2-Ethylbutanol	3	UN2275	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	2-Ethylbutyl acetate	3	UN1177	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	2-Ethylbutyraldehyde	3	UN1178	II	FLAMMABLE LIQUID	B1, T1	150	202	242	5 L	60 L	B	
	Ethyldichloroarsine	6.1	UN1892	I	POISON	2, B9, B14, B32, B74, T38, T43, T45.	None	227	244	Forbidden	Forbidden	D	40
	Ethyldichlorosilane	4.3	UN1183	I	DANGEROUS WHEN WET, CORROSIVE, FLAMMABLE LIQUID.	A2, A3, A7, N34, T18, T26.	None	201	244	Forbidden	1 L	D	21 28 40, 49, 100
	Ethylene, acetylene and propylene in mixtures, refrigerated liquid *with at least 71.5 percent ethylene with not more than 22.5 percent acetylene and not more than 6 percent propylene*	2.1	UN3138		FLAMMABLE GAS		None	304	314, 316	Forbidden	Forbidden	D	40
	Ethylene chlorohydrin	6.1	UN1135	I	POISON, FLAMMABLE LIQUID.	2, B9, B14, B32, B74, T38, T43, T45.	None	227	244	Forbidden	Forbidden	D	40
	Ethylene compressed	2.1	UN1962		FLAMMABLE GAS		306	304	302	Forbidden	150 kg	E	40
	Ethylene diamine diperchlorate	Forbidden											
	Ethylene dibromide	6.1	UN1605	I	POISON	2, B9, B14, B32, B74, B77, T38, T43, T45.	None	227	244	Forbidden	Forbidden	D	40
	Ethylene dibromide and methyl bromide liquid mixtures, see Methyl bromide and ethylene dibromide, liquid mixtures												
	Ethylene dichloride	3	UN1184	II	FLAMMABLE LIQUID, POISON.	T14	None	202	243	1 L	60 L	B	40
	Ethylene glycol diethyl ether	3	UN1153	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Ethylene glycol dinitrate	Forbidden											
	Ethylene glycol monobutyl ether	6.1	UN2369	III	KEEP AWAY FROM FOOD	T1	153	203	241	60 L	220 L	A	
	Ethylene glycol monoethyl ether	3	UN1171	III	FLAMMABLE LIQUID	B1 T1	150	203	242	60 L	220 L	A	
	Ethylene glycol monoethyl ether acetate	3	UN1172	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Ethylene glycol monomethyl ether	3	UN1188	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Ethylene glycol monomethyl ether acetate	3	UN1189	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Ethylene oxide and carbon dioxide mixture *with more than 87 percent ethylene oxide*	2.3	UN3300		POISON GAS, FLAMMABLE GAS	4	None	304	314, 316	Forbidden	75 kg	D	40

	Ethylene oxide and carbon dioxide mixtures *with more than 9 percent but not more than 87 percent ethylene oxide*	2.1	UN1041		FLAMMABLE GAS		306	304	314, 315	Forbidden	25 kg	B	40
	Ethylene oxide and carbon dioxide mixtures *with not more than 9 percent ethylene oxide*	2.2	UN1952		NONFLAMMABLE GAS		306	304	314 315	75 kg	150 kg	A	
	Ethylene oxide and chlorotetrafluoroethane mixture *with not more than 8.8 percent ethylene oxide*	2.2	UN3297		NONFLAMMABLE GAS		306	304	314, 315	75 kg	150 kg	A	
	Ethylene oxide and dichlorodifluoromethane mixture, *with not more than 12.5 percent ethylene oxide*	2.2	UN3070		NONFLAMMABLE GAS		306	304	314, 315	75 kg	150 kg	A	
	Ethylene oxide and pentafluoroethane mixture *with not more than 7.9 percent ethylene oxide*	2.2	UN3298		NONFLAMMABLE GAS		306	304	314 315	75 kg	150 kg	A	
	Ethylene oxide and propylene oxide mixtures *with not more than 30 percent ethylene oxide*	3	UN2983	I	FLAMMABLE LIQUID, POISON.	5, A11 N4, N34, T24, T29	None	201	243	Forbidden	30 L	E	40
	Ethylene oxide and tetrafluoroethane mixture *with not more than 5.6 percent ethylene oxide*	2.2	UN3299		NONFLAMMABLE GAS		306	304	314, 315	75 kg	150 kg	A	
	Ethylene oxide *or* Ethylene oxide with nitrogen *up to a total pressure of 1MPa (10 bar) at 50 degrees C*	2.3	UN1040		POISON GAS, FLAMMABLE GAS.	4, 25	None	323	323	Forbidden	25 kg	D	40
	Ethylene, refrigerated liquid *(cryogenic liquid)*	2.1	UN1038		FLAMMABLE GAS		None	316	318, 319	Forbidden	Forbidden	D	40
	Ethylenediamine	8	UN1604	II	CORROSIVE, FLAMMABLE LIQUID	T14	154	202	243	1 L	30 L	A	40
	Ethylenimine, *inhibited*	6.1	UN1185	I	POISON, FLAMMABLE LIQUID	1, B9, B14, B30, B72, B77, N25, N32, T38, T43, T44.	None	226	244	Forbidden	Forbidden	D	40
	Ethylhexaldehyde, see Octyl aldehydes *etc.*												
	2-Ethylhexyl chloroformate	6.1	UN2748	II	POISON, CORROSIVE	T12	None	202	243	1 L	30 L	A	12 13 21 25, 40 100
	2 Ethylhexylamine	3	UN2276	III	FLAMMABLE LIQUID, CORROSIVE	B1, T2	150	203	242	5 L	60 L	A	40
	Ethylphenyldichlorosilane	8	UN2435	II	CORROSIVE	A7, B2, N34, T8, T26.	None	202	242	Forbidden	30 L	C	
	1-Ethylpiperidine	3	UN2386	II	FLAMMABLE LIQUID, CORROSIVE	T8	None	202	243	1 L	5 L	B	
	N-Ethyltoluidines	6.1	UN2754	II	POISON	T14	None	202	243	5 L	60 L	A	
	Ethyltrichlorosilane	3	UN1196	II	FLAMMABLE LIQUID, CORROSIVE	A7, B100, N34, T15, T26	None	202	243	1 L	5 L	B	40
	Etiologic agent see Infectious substances *etc.*)												
	Explosive articles, see Articles explosive, n.o.s. *etc.*												
	Explosive, blasting, type A	1.1D	UN0081	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E 5E 21E
	Explosive, blasting, type B	1.1D	UN0082	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E 5E
	Explosive, blasting, type B or Agent blasting Type B	1.5D	UN0331	II	EXPLOSIVE 1.5D	105, 106	None	62	None	Forbidden	Forbidden	B	1E 5E
	Explosive blasting, type C	1.1D	UN0083	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E
	Explosive, blasting type D	1.1D	UN0084	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E 5E
	Explosive, blasting, type E	1.1D	UN0241	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E 5E, 19E
	Explosive, blasting, type E *or* Agent blasting, Type E	1.5D	UN0332	II	EXPLOSIVE 1.5D	105, 106	None	62	None	Forbidden	Forbidden	B	1E, 5E
	Explosive, forbidden See Sec. 173.54	Forbidden											
D	Explosive pest control devices	1.1E	NA0006	II	EXPLOSIVE 1.1E		None	62	None	Forbidden	Forbidden	E	
D	Explosive pest control devices	1.4E	NA0412	II	EXPLOSIVE 1.4E		None	62	None	Forbidden	75 kg	A	24E
	Explosive substances, see Substances, explosive, n.o.s. *etc*												
	Explosives, slurry see Explosive, blasting, type E												
	Explosives, water gels, see Explosive, blasting type E												
	Extracts, aromatic, liquid	3	UN1169	II	FLAMMABLE LIQUID	T7, T30	150	202	242	5 L	60 L	B	
				III	FLAMMABLE LIQUID	B1, T7, T30	150	203	242	60 L	220 L	A	
	Extracts, flavoring, liquid	3	UN1197	II	FLAMMABLE LIQUID	T7, T30	150	202	242	5 L	60 L	B	
				III	FLAMMABLE LIQUID	B1, T7, T30	150	203	242	60 L	220 L	A	
	Fabric with animal or vegetable oil, see Fibers or fabrics, *etc.*												
	Ferric arsenate	6.1	UN1606	II	POISON		None	212	242	25 kg	100 kg	A	
	Ferric arsenate	6.1	UN1607	II	POISON		None	212	242	25 kg	100 kg	A	
	Ferric chloride, anhydrous	8	UN1773	III	CORROSIVE		154	213	240	25 kg	100 kg	A	
	Ferric chloride, solution	8	UN2582	III	CORROSIVE	B16, T8	154	203	241	5 L	60 L	A	
	Ferric nitrate	5.1	UN1466	III	OXIDIZER	A1, A29	152	213	240	25 kg	100 kg	A	
	Ferrocerium	4.1	UN1323	II	FLAMMABLE SOLID	A19	151	212	240	15 kg	50 kg	A	
	Ferrosilicon *with 30 percent or more but less than 90 percent silicon*	4.3	UN1408	III	DANGEROUS WHEN WET, KEEP AWAY FROM FOOD	A1 A19	None	213	240	25 kg	100 kg	A	13 40 85 103
	Ferrous arsenate	6.1	UN1608	II	POISON		None	212	242	25 kg	100 kg	A	
D	Ferrous chloride solid	8	NA1759	II	CORROSIVE		154	212	240	15 kg	50 kg	A	

§172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols (1)	Hazardous materials descriptions and proper shipping names (2)	Hazard class or Division (3)	Identification Numbers (4)	Packing group (5)	Label(s) required (if not excepted) (6)	Special provisions (7)	(8) Packaging authorizations (§173 *) Exceptions (8A)	Non-bulk packaging (8B)	Bulk packaging (8C)	(9) Quantity limitations Passenger aircraft or rail car (9A)	Cargo aircraft only (9B)	(10) Vessel stowage requirements Vessel stowage (10A)	Other stowage provisions (10B)
D	Ferrous chloride solution	8	NA1760	II	CORROSIVE	B3	154	202	242	1 L	30 L	B	40
	Ferrous metal borings or Ferrous metal shavings or Ferrous metal turnings or Ferrous metal cuttings *in a form liable to self-heating*	4.2	UN2793	III	SPONTANEOUSLY COMBUSTIBLE	A1, A19, B101	None	213	241	25 kg	100 kg	A	
	Fertilizer ammoniating solution *with free ammonia*	2.2	UN1043		NONFLAMMABLE GAS		306	304	314, 315	Forbidden	150 kg	E	40
AIW	Fibers or Fabrics, animal or vegetable or Synthetic, n.o.s. *with animal or vegetable oil*	4.2	UN1373	III	SPONTANEOUSLY COMBUSTIBLE.		None	213	241	Forbidden	Forbidden	A	
	Fibers or Fabrics impregnated with weakly nitrated nitrocellulose n.o.s	4.1	UN1353	III	FLAMMABLE SOLID	A1	None	213	240	25 kg	100 kg	D	
	Films, nitrocellulose base, from which gelatine has been removed; film scrap, see Celluloid scrap												
	Films nitrocellulose base, *gelatine coated (except scrap)*	4.1	UN1324	III	FLAMMABLE SOLID		None	183	None	25 kg	100 kg	D	91
	Fire extinguisher charges, *corrosive liquid*	8	UN1774	II	CORROSIVE	N41	154	202	None	1 L	30 L	A	
	Fire extinguisher charges, expelling, explosive, see Cartridges, power device												
	Fire extinguishers *containing compressed or liquefied gas*	2.2	UN1044		NONFLAMMABLE GAS		309	309	None	75 kg	150 kg	A	
	Firelighters, solid *with flammable liquid*	4.1	UN2623	II	FLAMMABLE SOLID	A19	None	212	None	15 kg	50 kg	A	119
				III	FLAMMABLE SOLID	A1, A19	None	213	None	25 kg	100 kg	A	119
	Fireworks	1.1G	UN0333	II	EXPLOSIVE 1.1G	108	None	62	None	Forbidden	Forbidden	B	
	Fireworks	1.2G	UN0334	II	EXPLOSIVE 1.2G	108	None	62	None	Forbidden	Forbidden	B	
	Fireworks	1.3G	UN0335	II	EXPLOSIVE 1.3G	108	None	62	None	Forbidden	Forbidden	B	
	Fireworks	1.4G	UN0336	II	EXPLOSIVE 1.4G	108	None	62	None	Forbidden	75 kg	A	24E
	Fireworks	1.4S	UN0337	II	EXPLOSIVE 1.4S	108	None	62	None	25 kg	100 kg	A	
W	Fish meal, stabilized or Fish scrap, stabilized	9	UN2216	III	None		155	218	218	No limit	No limit	A	88
	Fish meal, unstabilized or Fish scrap, unstabilized	4.2	UN1374	II	SPONTANEOUSLY COMBUSTIBLE.	A1, A19	None	212	241	15 kg	50 kg	A	119, 120
	Fissile radioactive materials, see Radioactive material, fissile, n.o.s												
	Flammable compressed gas, see Compressed or Liquefied gas, flammable, etc.												
	Flammable compressed gas (small receptacles not fitted with a dispersion device, not refillable) see Receptacles, etc.												
	Flammable gas in lighters *see* Lighters or lighter refills, *containing flammable gas*												
	Flammable liquid, toxic, corrosive n.o.s	3	UN3286	I	FLAMMABLE LIQUID, POISON, CORROSIVE.		None	201	243	Forbidden	2.5 L	E	21, 40, 100
				II	FLAMMABLE LIQUID, POISON, CORROSIVE.	T14	None	202	243	1 L	5 L	B	21, 40, 100
	Flammable liquids corrosive, n.o.s	3	UN2924	I	FLAMMABLE LIQUID, CORROSIVE.	T42	None	201	243	0.5 L	2.5 L	E	40
				II	FLAMMABLE LIQUID, CORROSIVE	T15, T26	None	202	243	1 L	5 L	B	40
				III	FLAMMABLE LIQUID, CORROSIVE	B1, T15, T26	150	203	242	5 L	60 L	A	40
	Flammable liquids, n.o.s	3	UN1993	I	FLAMMABLE LIQUID	T42	150	201	243	1 L	30 L	E	
				II	FLAMMABLE LIQUID	T8, T31	150	202	242	5 L	60 L	B	
				III	FLAMMABLE LIQUID	B1, B52, T7, T30	150	203	242	60 L	220 L	A	
	Flammable liquids toxic, n.o.s	3	UN1992	I	FLAMMABLE LIQUID, POISON.	T42	None	201	243	Forbidden	30 L	E	40
				II	FLAMMABLE LIQUID, POISON.	T18	None	202	243	1 L	60 L	B	40
				III	FLAMMABLE LIQUID, KEEP AWAY FROM FOOD.	B1, T18	150	203	242	60 L	220 L	A	
	Flammable solid, corrosive, inorganic, n.o.s	4.1	UN3180	II	FLAMMABLE SOLID, CORROSIVE	A1, B106	151	212	242	15 kg	50 kg	D	40
				III	FLAMMABLE SOLID, CORROSIVE.	A1, B106	151	213	242	25 kg	100 kg	D	40
	Flammable solid inorganic, n.o.s	4.1	UN3178	II	FLAMMABLE SOLID	A1	151	212	240	15 kg	50 kg	B	
				III	FLAMMABLE SOLID	A1	151	213	240	25 kg	100 kg	B	
	Flammable solid, organic, molten, n.o.s.	4.1	UN3176	II	FLAMMABLE SOLID	T9	151	212	240	Forbidden	Forbidden	C	
				III	FLAMMABLE SOLID	T9	151	213	240	Forbidden	Forbidden	C	

Flammable solid, toxic, inorganic, n.o.s.	4.1	UN3179	II	FLAMMABLE SOLID, POISON	A1, B106	151	212	242	15 kg	50 kg	B	40
			III	FLAMMABLE SOLID, KEEP AWAY FROM FOOD	A1, B106	151	213	242	25 kg	100 kg	B	40
Flammable solids, corrosive, organic, n.o.s.	4.1	UN2925	II	FLAMMABLE SOLID, CORROSIVE.	A1, B106	None	212	242	15 kg	50 kg	D	40
			III	FLAMMABLE SOLID, CORROSIVE	A1, B106	151	213	242	25 kg	100 kg	D	40
Flammable solids, organic, n.o.s.	4.1	UN1325	II	FLAMMABLE SOLID	A1	151	212	240	15 kg	50 kg	B	
			III	FLAMMABLE SOLID	A1	151	213	240	25 kg	100 kg	B	
Flammable solids, toxic, organic, n.o.s.	4.1	UN2926	II	FLAMMABLE SOLID, POISON	A1, B106	None	212	242	15 kg	50 kg	B	40
			III	FLAMMABLE SOLID, KEEP AWAY FROM FOOD.	A1, B106	151	213	242	25 kg	100 kg	B	40
Flares, aerial	1.3G	UN0093	II	EXPLOSIVE 1.3G		None	62	None	Forbidden	75 kg	B	
Flares, aerial	1.4G	UN0403	II	EXPLOSIVE 1.4G		None	62	None	Forbidden	75 kg	A	24E
Flares, aerial	1.4S	UN0404	II	EXPLOSIVE 1.4S		None	62	None	25 kg	100 kg	A	
Flares, aerial	1.1G	UN0420	II	EXPLOSIVE 1.1G		None	62	None	Forbidden	Forbidden	B	
Flares, aerial	1.2G	UN0421	II	EXPLOSIVE 1.2G		None	62	None	Forbidden	Forbidden	B	
Flares, airplane, see Flares, aerial												
Flares, signal, see Cartridges, signal												
Flares, surface	1.3G	UN0092	II	EXPLOSIVE 1.3G		None	62	None	Forbidden	75 kg	B	
Flares, surface	1.1G	UN0418	II	EXPLOSIVE 1.1G		None	62	None	Forbidden	Forbidden	B	
Flares, surface	1.2G	UN0419	II	EXPLOSIVE 1.2G		None	62	None	Forbidden	Forbidden	B	
Flares, water-activated, see Contrivances, water-activated etc.												
Flash powder	1.1G	UN0094	II	EXPLOSIVE 1.1G		None	62	None	Forbidden	Forbidden	E	1E 5E
Flash powder	1.3G	UN0305	II	EXPLOSIVE 1.3G		None	62	None	Forbidden	Forbidden	E	1E 5E
Flue dusts, poisonous, see Arsenical dust												
Fluoric acid, see Hydrofluoric acid, solution, etc.												
Fluorine, compressed	2.3	UN1045		POISON GAS, OXIDIZER, CORROSIVE	1	None	302	None	Forbidden	Forbidden	D	40 89 90
Fluoroacetic acid	6.1	UN2642	I	POISON	B100	None	211	242	1 kg	15 kg	E	
Fluoroanilines	6.1	UN2941	III	KEEP AWAY FROM FOOD	T6	153	203	241	60 L	220 L	A	
Fluorobenzene	3	UN2387	II	FLAMMABLE LIQUID	B101, T8	150	202	242	5 L	60 L	B	
Fluoroboric acid	8	UN1775	II	CORROSIVE	A6, A7, B2, B15, N3, N34, T18, T27	154	202	242	1 L	30 L	A	
Fluorophosphoric acid anhydrous	8	UN1776	II	CORROSIVE	A6, A7, B2, N3, N34, T9, T27.	None	202	242	1 L	30 L	A	
Fluorosilicates n.o.s.	6.1	UN2856	III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A	26
Fluorosilicic acid	8	UN1778	II	CORROSIVE	A6, A7, B2, B15, N3, N34, T12, T27	None	202	242	1 L	30 L	A	
Fluorosulfonic acid	8	UN1777	I	CORROSIVE	A3, A6, A7, A10, B4, B10, B41, N3, T9, T27.	None	201	243	0.5 L	2.5 L	D	40
Fluorotoluenes	3	UN2368	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	B	40
Forbidden materials. See 173.21	Forbidden											
Formaldehyde, solutions, flammable	3	UN1198	III	FLAMMABLE LIQUID, CORROSIVE.	B1, T8	150	203	242	5 L	60 L	A	40
Formaldehyde, solutions, with not less than 25 percent formaldehyde	8	UN2209	III	CORROSIVE	T1	154	203	241	5 L	60 L	A	
Formalin, see Formaldehyde, solutions												
Formic acid	8	UN1779	II	CORROSIVE	B2, B12, B58, T8	154	202	242	1 L	30 L	A	40
Fracturing devices, explosive, without detonators for oil wells	1.1D	UN0099	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	
Fuel, aviation, turbine engine	3	UN1863	I	FLAMMABLE LIQUID	T7	150	201	243	1 L	30 L	E	
			II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
			III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
D Fuel oil (No. 1, 2, 4, 5, or 6)	3	NA1993	III	FLAMMABLE LIQUID	B1	150	203	242	60 L	220 L	A	
Fulminate of mercury (dry)	Forbidden											
Fulminate of mercury, wet, see Mercury fulminate, etc.												
Fulminating gold	Forbidden											
Fulminating mercury	Forbidden											
Fulminating platinum	Forbidden											
Fulminating silver	Forbidden											
Fulminic acid	Forbidden											
Fumaryl chloride	8	UN1780	II	CORROSIVE	B2, T8 T26	154	202	242	1 L	30 L	C	8 40
Furan	3	UN2389	I	FLAMMABLE LIQUID	T18	None	201	243	1 L	30 L	E	40
Furfural	3	UN1199	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
Furfuryl alcohol	6.1	UN2874	III	KEEP AWAY FROM FOOD	T2	153	203	241	60 L	220 L	A	26, 74
Furfurylamine	3	UN2526	III	FLAMMABLE LIQUID, CORROSIVE.	B1, T1	150	203	242	5 L	60 L	A	40
Fuse detonating *metal clad see Cord, detonating, metal clad*												

§172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols (1)	Hazardous materials descriptions and proper shipping names (2)	Hazard class or Division (3)	Identification Numbers (4)	Packing group (5)	Label(s) required (if not excepted) (6)	Special provisions (7)	(8) Packaging authorizations (§173 ***) Exceptions (8A)	Non-bulk packaging (8B)	Bulk packaging (8C)	(9) Quantity limitations Passenger aircraft or railcar (9A)	Cargo aircraft only (9B)	(10) Vessel stowage requirements Vessel stowage (10A)	Other stowage provisions (10B)
	Fuse, detonating, mild effect, *metal clad, see* Cord, detonating, mild effect, *metal clad*												
	Fuse igniter *tubular metal clad*	1.4G	UN0103	II	EXPLOSIVE 1.4G		None	62	None	Forbidden	75 kg	A	24E
	Fuse, instantaneous, non-detonating or Quickmatch	1.3G	UN0101	II	EXPLOSIVE 1.3G		None	62	None	Forbidden	Forbidden	B	
	Fuse, safety	1.4S	UN0105	II	EXPLOSIVE 1.4S		None	62	None	25 kg	100 kg	A	
D	Fuses *(railway or highway)*	4.1	NA1325	II	FLAMMABLE SOLID		None	184	None	15 kg	50 kg	B	
	Fusel oil	3	UN1201	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
				III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Fuses, tracer, see Tracers for ammunition												
	Fuzes, combination, percussion and time, see Fuzes detonating *(UN 0257, UN 0367)*, Fuzes, igniting (UN 0317, UN 0368)												
	Fuzes, detonating	1.1B	UN0106	II	EXPLOSIVE 1.1B		None	62	None	Forbidden	Forbidden	B	2E, 6E
	Fuzes, detonating	1.2B	UN0107	II	EXPLOSIVE 1.2B		None	62	None	Forbidden	Forbidden	B	2E, 6E
	Fuzes, detonating	1.4B	UN0257	II	EXPLOSIVE 1.4B	116	None	62	None	Forbidden	75 kg	A	24E
	Fuzes, detonating	1.4S	UN0367	II	EXPLOSIVE 1.4S	116	None	62	None	25 kg	100 kg	A	
	Fuzes, detonating *with protective features*	1.1D	UN0408	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	
	Fuzes, detonating *with protective features*	1.2D	UN0409	II	EXPLOSIVE 1.2D		None	62	None	Forbidden	Forbidden	B	
	Fuzes, detonating, *with protective features*	1.4D	UN0410	II	EXPLOSIVE 1.4D	116	None	62	None	Forbidden	75 kg	A	24E
	Fuzes, igniting	1.3G	UN0316	II	EXPLOSIVE 1.3G		None	62	None	Forbidden	Forbidden	B	
	Fuzes, igniting	1.4G	UN0317	II	EXPLOSIVE 1.4G		None	62	None	Forbidden	75 kg	A	24E
	Fuzes, igniting	1.4S	UN0368	II	EXPLOSIVE 1.4S		None	62	None	25 kg	100 kg	A	
	Galactsan trinitrate	Forbidden											
	Gallium	8	UN2803	III	CORROSIVE		None	162	240	20 kg	20 kg	B	48
	Gas generator assemblies (aircraft), *containing a non-flammable non-toxic gas and a propellant cartridge*	2.2			NONFLAMMABLE GAS		None	335	None	75 kg	150 kg	A	
D	Gas identification set	2.3	NA9035		POISON GAS	6	None	194	None	Forbidden	Forbidden	D	
	Gas oil or Diesel fuel or Heating oil light	3	UN1202	III	FLAMMABLE LIQUID	B1, T7, T30	150	203	242	60 L	220 L	A	
	Gas, refrigerated liquid n.o.s.	2.2	UN3158		NONFLAMMABLE GAS		306	304	314, 315	50 kg	500 kg	D	
	Gas sample non-pressurized, flammable, n.o.s., *not refrigerated liquid*	2.1	UN3167		FLAMMABLE GAS		306	302, 304	None	1 L	5 L	D	
	Gas sample non-pressurized, toxic flammable, n.o.s., *not refrigerated liquid*	2.3	UN3168		POISON GAS, FLAMMABLE GAS,		306	302	None	Forbidden	1 L	D	
	Gas sample non-pressurized toxic n.o.s. *not refrigerated liquid*	2.3	UN3169		POISON GAS		306	302, 304	None	Forbidden	1 L	D	
D	Gasohol *gasoline mixed with ethyl alcohol with not more than 20 percent alcohol*	3	NA1203	II	FLAMMABLE LIQUID		150	202	242	5 L	60 L	E	
	Gasoline	3	UN1203	II	FLAMMABLE LIQUID	B33, B101, T8	150	202	242	5 L	60 L	E	
	Gasoline casinghead, see Gasoline												
	Gelatine, blasting, see Explosive, blasting, type A												
	Gelatine dynamites, see Explosive, blasting, type A												
	Germane	2.3	UN2192		POISON GAS, FLAMMABLE GAS.	2, 25	None	192	245	Forbidden	Forbidden	D	40
	Glycerol-1,3-dinitrate	Forbidden											
	Glycerol gluconate trinitrate	Forbidden											
	Glycerol lactate trinitrate	Forbidden											
	Glycerol alpha-monochlorohydrin	6.1	UN2689	III	KEEP AWAY FROM FOOD.	T2	153	203	241	60 L	220 L	A	
	Glyceryl trinitrate see Nitroglycerin *etc*												
	Glycidaldehyde	3	UN2622	II	FLAMMABLE LIQUID, POISON	T8	150	202	243	1 L	60 L	A	40
D	Grenades, empty primed	1.4S	NA0349	II	None		None	62	None	25 kg	100 kg	A	
	Grenades *hand or rifle, with bursting charge*	1.1D	UN0284	II	EXPLOSIVE 1.1D			62	None	Forbidden	Forbidden	B	
	Grenades *hand or rifle with bursting charge*	1.2D	UN0285	II	EXPLOSIVE 1.2D			62	None	Forbidden	Forbidden	B	
	Grenades *hand or rifle with bursting charge*	1.1F	UN0292	II	EXPLOSIVE 1.1F			62	None	Forbidden	Forbidden	E	
	Grenades *hand or rifle, with bursting charge*	1.2F	UN0293	II	EXPLOSIVE 1.2F			62	None	Forbidden	Forbidden	E	
	Grenades, illuminating, see Ammunition, illuminating, *etc*												
	Grenades practice *hand or rifle*	1.4S	UN0110	II	EXPLOSIVE 1.4S			62	None	25 kg	100 kg	A	
	Grenades practice, *hand or rifle*	1.3G	UN0318	II	EXPLOSIVE 1.3G			62	None	Forbidden	Forbidden	B	
	Grenades, practice *hand or rifle*	1.2G	UN0372	II	EXPLOSIVE 1.2G			62	None	Forbidden	Forbidden	B	
	Grenades practice *Hand or rifle*	1.4G	UN0452	II	EXPLOSIVE 1.4G			62	None	Forbidden	75 kg	A	24E
	Grenades, smoke, see Ammunition smoke, *etc.*												

	Guanidine nitrate	5.1	UN1467	III	OXIDIZER	A1		152	213	240	25 kg	100 kg	A		73	
	Guanyl nitrosaminoguanylidene hydrazine (dry)	Forbidden														
	Guanyl nitrosaminoguanylidene hydrazine wetted *with not less than 30 percent water, by mass*	1.1A	UN0113	II	EXPLOSIVE 1.1A	111, 117		None	62	None	Forbidden	Forbidden	E		2E	6E
	Guanyl nitrosaminoguanyltetrazene (dry)	Forbidden														
	Guanyl nitrosaminoguanyltetrazene, wetted or Tetrazene, wetted *with not less than 30 percent water or mixture of alcohol and water by mass*	1.1A	UN0114	II	EXPLOSIVE 1.1A	111, 117		None	62	None	Forbidden	Forbidden	E		2E	6E
	Gunpowder, compressed or Gunpowder in pellets, see Black powder *(UN 0028)*															
	Gunpowder, *granular or as a meal, see* Black powder *(UN 0027)*															
	Hafnium powder, dry	4.2	UN2545	I	SPONTANEOUSLY COMBUSTIBLE	B100		None	211	242	Forbidden	Forbidden	D			
				II	SPONTANEOUSLY COMBUSTIBLE	A19, A20, B100, N34.		None	212	241	15 kg	50 kg	D			
				III	SPONTANEOUSLY COMBUSTIBLE	B100		None	213	241	25 kg	100 kg	D			
	Hafnium powder, wetted with not less than 25 percent water (a visible excess of water must be present) (a) mechanically produced, particle size less than 53 microns, (b) chemically produced, particle size less than 840 microns	4.1	UN1326	II	FLAMMABLE SOLID	A8, A19, A20, N34		None	212	241	15 kg	50 kg	E			
	Halogenated irritating liquids, n.o.s.	6.1	UN1610	I	POISON	T42		None	201	243	Forbidden	Forbidden	D		40	
				II	POISON	T14		None	202	243	5 L	60 L	D		40	
				III	KEEP AWAY FROM FOOD.	T14		153	203	241	60 L	220 L	D		40	
	Hand signal device, see Signal devices, hand															
	Hazardous substances, liquid or solid, n.o.s., see Environmentally hazardous substances, etc.															
D	Hazardous waste, liquid, n.o.s.	9	NA3082	III	CLASS 9			155	203	241	No limit	No limit	A			
D	Hazardous waste solid, n.o.s.	9	NA3077	III	CLASS 9	B54		156	213	240	No limit	No limit	A			
	Helium, compressed	2.2	UN1046		NONFLAMMABLE GAS			306	302	302, 314	75 kg	150 kg	A		86	
	Helium-oxygen mixture, see Rare gases and oxygen mixtures															
	Helium, refrigerated liquid *(cryogenic liquid)*	2.2	UN1963		NONFLAMMABLE GAS			320	316	318	50 kg	500 kg	B			
	Heptafluoropropane	2.2	UN3296		NONFLAMMABLE GAS			308	304	314, 315	75 kg	150 kg	A			
	n-Heptaldehyde	3	UN3056	III	FLAMMABLE LIQUID	B1, T1		150	203	242	60 L	220 L	A			
	Heptanes	3	UN1206	II	FLAMMABLE LIQUID	T2		150	202	242	5 L	60 L	B			
	n-Heptene	3	UN2278	II	FLAMMABLE LIQUID	B101, T8		150	202	242	5 L	60 L	B			
	Hexachloroacetone	6.1	UN2661	III	KEEP AWAY FROM FOOD	T8		153	203	241	60 L	220 L	B		12	40
	Hexachlorobenzene	6.1	UN2729	III	KEEP AWAY FROM FOOD			153	203	241	60 L	220 L	A			
	Hexachlorobutadiene	6.1	UN2279	III	KEEP AWAY FROM FOOD.	T7		153	203	241	60 L	220 L	A			
	Hexachlorocyclopentadiene	6.1	UN2646	I	POISON	2, B9, B14, B33, B74, B77, T38, T43, T45.		None	227	244	Forbidden	Forbidden	D		40	
	Hexachlorophene	6.1	UN2875	III	KEEP AWAY FROM FOOD.			153	213	240	100 kg	200 kg	A			
	Hexadecyltrichlorosilane	8	UN1781	II	CORROSIVE	A7, B2, B9, N34, T8.		None	202	242	Forbidden	30 L	D		40	
	Hexadienes	3	UN2458	II	FLAMMABLE LIQUID	B101, T7		None	202	242	5 L	60 L	B			
	Hexaethyl tetraphosphate and compressed gas mixtures	2.3	UN1612		POISON GAS	3		None	334	None	Forbidden	Forbidden	D		40	
	Hexaethyl tetraphosphate *liquid*	6.1	UN1611	I	POISON	A4		None	201	243	1 L	30 L	E		40	
				II	POISON	N76		None	202	243	5 L	60 L	E		40	
				III	KEEP AWAY FROM FOOD.	N77		None	203	241	60 L	220 L	E		40	
	Hexaethyl tetraphosphate *solid*	6.1	UN1611	I	POISON			None	211	242	Forbidden	15 kg	E		40	
				II	POISON	N76		None	212	242	25 kg	100 kg	E		40	
				III	KEEP AWAY FROM FOOD.	N77		153	213	240	100 kg	200 kg	E		40	
	Hexafluoroacetone	2.3	UN2420		POISON GAS CORROSIVE.	2, B9 B14		None	304	314, 315	Forbidden	25 kg	D		40	
	Hexafluoroacetone hydrate	6.1	UN2552	II	POISON	T14		None	202	243	5 L	60 L	B		40	
	Hexafluoroethane *R116*	2.2	UN2193		NONFLAMMABLE GAS			306	304	314, 315	75 kg	150 kg	A			
	Hexafluorophosphoric acid	8	UN1782	II	CORROSIVE	A6 A7, B2 N3, N34, T9 T27		None	202	242	1 L	30 L	A			
D	Hexafluoropropylene oxide	2.2	NA1956		NONFLAMMABLE GAS			306	304	314, 315	75 kg	150 kg	A			
	Hexafluoropropylene *R1216*	2.2	UN1858		NONFLAMMABLE GAS			306	304	314, 315	75 kg	150 kg	A			
	Hexaldehyde	3	UN1207	III	FLAMMABLE LIQUID	B1, T1		150	203	242	60 L	220 L	A			
	Hexamethylene diisocyanate	6.1	UN2281	II	POISON	B101, T14		None	202	243	5 L	60 L	B		13	40
	Hexamethylene triperoxide diamine (dry)	Forbidden														

§172 101 HAZARDOUS MATERIALS TABLE—Continued

Symbols (1)	Hazardous materials descriptions and proper shipping names (2)	Hazard class or Division (3)	Identification Numbers (4)	Packing group (5)	Label(s) required (if not excepted) (6)	Special provisions (7)	(8) Packaging authorizations (§173 ***) Exceptions (8A)	Non-bulk packaging (8B)	Bulk packaging (8C)	(9) Quantity limitations Passenger aircraft or rail car (9A)	Cargo aircraft only (9B)	(10) Vessel stowage requirements Vessel stowage (10A)	Other stowage provisions (10B)
	Hexamethylenediamine solid	8	UN2280	III	CORROSIVE		154	213	240	25 kg	100 kg	A	12
	Hexamethylenediamine solution	8	UN1783	II	CORROSIVE	T8	None	202	242	1 L	30 L	A	
				III	CORROSIVE	T7	154	203	241	5 L	60 L	A	
	Hexamethylenimine	3	UN2493	II	FLAMMABLE LIQUID, CORROSIVE	B101, T8	None	202	243	1 L	5 L	B	40
	Hexamethylenetetramine	4 1	UN1328	III	FLAMMABLE SOLID	A1	151	213	240	25 kg	100 kg	A	
	Hexamethyiol benzene hexanitrate	Forbidden											
	Hexanes	3	UN1208	II	FLAMMABLE LIQUID	B101, T8	150	202	242	5 L	60 L	E	
	2,2',4 4',6 6'-Hexanitro-3,3'-dihydroxyazobenzene (dry)	Forbidden											
	Hexanitroazoxy benzene	Forbidden											
	N,N'-(hexanitrodiphenyl) ethylene dinitramine (dry)	Forbidden											
	Hexanitrodiphenyl urea	Forbidden											
	2,2',3',4,4 6-Hexanitrodiphenylamine	Forbidden											
	Hexanitrodiphenylamine or Dipicrylamine or Hexyl	1 1D	UN0079	II	EXPLOSIVE 1 1D		None	62	None	Forbidden	Forbidden	B	1E, 5E
	2,3' 4 4' 6,6'-Hexanitrodiphenylether	Forbidden											
	Hexanitrostilbene	Forbidden											
	Hexanitrouranide	Forbidden											
	Hexanitrostilbene	1 1D	UN0392	II	EXPLOSIVE 1 1D		None	62	None	Forbidden	Forbidden	B	1E, 5E
	Hexanoic acid, see Corrosive liquids, n o s												
	Hexanols	3	UN2282	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	1-Hexene	3	UN2370	II	FLAMMABLE LIQUID	B101, T8	150	202	242	5 L	60 L	E	
	Hexogen and cyclotetramethylenetetranitramine mixtures, wetted *or* desensitized *see* RDX and HMX mixtures wetted *or* desensitized *etc.*												
	Hexogen and HMX mixtures, wetted *or* desensitized *see* RDX and HMX mixtures wetted *or* desensitized *etc*												
	Hexogen and octogen mixtures wetted *or* desensitized *see* RDX and HMX mixtures wetted *or* desensitized *etc*												
	Hexogen, *see* Cyclotrimethylenetrinitramine, *etc*												
	Hexolite, *or* Hexotol *dry or wetted with less than 15 percent water, by mass*	1 1D	UN0118	II	EXPLOSIVE 1 1D		None	62	None	Forbidden	Forbidden	B	1E 5E
	Hexotonal	1.1D	UN0393	II	EXPLOSIVE 1 1D		None	62	None	Forbidden	Forbidden	B	1E 5E
	Hexyl, *see* Hexanitrodiphenylamine												
	Hexyltrichlorosilane	8	UN1784	II	CORROSIVE	A7, B2, B6, N34, T8, T26.	None	202	242	Forbidden	30 L	C	40
	High explosives see individual explosives' entries												
	HMX, *see* Cyclotetramethylenetetranitramine, *etc.*												
	Hydrazine anhydrous *or* Hydrazine aqueous solutions *with more than 64 percent hydrazine, by mass*	8	UN2029	I	CORROSIVE, FLAMMABLE LIQUID, POISON.	A3, A6, A7, A10, B16, B53, T25.	None	201	243	Forbidden	2.5 L	D	21 40 42 100
	Hydrazine, aqueous solution *with not more than 37 percent hydrazine, by mass*	6.1	UN3293	III	KEEP AWAY FROM FOOD.	T7	153	203	241	60 L	220 L	A	
	Hydrazine azide	Forbidden											
	Hydrazine chlorate	Forbidden											
	Hydrazine dicarbonic acid diazide	Forbidden											
	Hydrazine hydrate *or* Hydrazine aqueous solutions, *with not less than 37 percent but not more than 64 percent hydrazine, by mass*	8	UN2030	II	CORROSIVE, POISON	B16, B53, B110, T15.	None	202	243	Forbidden	30 L	D	40, 42, 92
	Hydrazine perchlorate	Forbidden											
	Hydrazine selenate	Forbidden											
	Hydriodic acid, anhydrous, see Hydrogen iodide, anhydrous												
	Hydriodic acid, solution	8	UN1787	II	CORROSIVE	A3, A6, B2, N41, T9, T27	154	202	242	1 L	30 L	C	
				III	CORROSIVE	T8, T26	154	203	241	5 L	60 L	C	8
	Hydrobromic acid, anhydrous, see Hydrogen bromide, anhydrous												
	Hydrobromic acid solution, *with more than 49 percent hydrobromic acid*	8	UN1788	II	CORROSIVE	B2, B15 N41, T9, T27.	154	202	242	Forbidden	Forbidden	C	
				III	CORROSIVE	T8, T26	154	203	241	Forbidden	Forbidden	C	8
	Hydrobromic acid solution, *with not more than 49 percent hydrobromic acid*	8	UN1788	II	CORROSIVE	A3, A6, B2, B15, N41, T9, T27,	154	202	242	1 L	30 L	C	
				III	CORROSIVE	T8, T26	154	203	241	5 L	30 L	C	8

Hydrocarbon gases, compressed, n.o.s. or Hydrocarbon gases mixtures compressed, n.o.s.	2.1	UN1964		FLAMMABLE GAS		306	302	314, 315	Forbidden	150 kg	E	40
Hydrocarbon gases, liquefied n.o.s. or Hydrocarbon gases mixtures liquefied, n.o.s.	2.1	UN1965		FLAMMABLE GAS		306	304	314, 315	Forbidden	150 kg	E	40
Hydrocarbons liquid, n.o.s.	3	UN3295	I	FLAMMABLE LIQUID	T8, T31	150	201	243	1 L	30 L	E	
			II	FLAMMABLE LIQUID	T8, T31	150	202	242	5 L	60 L	B	
			III	FLAMMABLE LIQUID	B1, T7, T30	150	203	242	60 L	220 L	A	
Hydrochloric acid, anhydrous, see Hydrogen chloride, anhydrous												
Hydrochloric acid solution	8	UN1789	II	CORROSIVE	A3 A8, B3, B15, N41, T9, T27	154	202	242	1 L	30 L	C	
			III	CORROSIVE	T8, T28	154	203	241	5 L	60 L	C	8
Hydrocyanic acid, anhydrous see Hydrogen cyanide etc.												
Hydrocyanic acid, aqueous solutions or Hydrogen cyanide, aqueous solutions *with not more than 20 percent hydrogen cyanide*ec *acid*	6.1	UN1613	I	POISON	2, B12, B61, B65, B77, B82.	None	195	244	Forbidden	Forbidden	D	40
D Hydrocyanic acid, aqueous solutions *with less than 5 percent hydrogen cyanide*acid	6.1	NA1613	II	POISON	B12, T16, T26	None	196	243	Forbidden	5 L	D	40
Hydrocyanic acid, liquefied, see Hydrogen cyanide, etc.												
Hydrocyanic acid (prussic), unstabilized	Forbidden											
Hydrofluoric acid and Sulfuric acid mixtures	8	UN1786	I	CORROSIVE, POISON	A6, A7, B16, B23, N5, N34, T18, T27	None	201	243	Forbidden	2.5 L	D	40, 95
Hydrofluoric acid, anhydrous, see Hydrogen fluoride, anhydrous												
Hydrofluoric acid, solution, *with more than 60 percent strength*	8	UN1790	I	CORROSIVE, POISON	A6, A7, B4 B12, B15, B23 N5, N34, T18 T27	None	201	243	0.5 L	2.5 L	D	12 40
Hydrofluoric acid, solution *with not more than 60 percent strength*	8	UN1790	II	CORROSIVE, POISON	A6, A7, B12, B15, B110, N5, N34, T18, T27	None	202	243	1 L	30 L	D	12, 40
Hydrofluoroboric acid, see Fluoboric acid												
Hydrofluorosilicic acid, see Fluorosilicic acid												
Hydrogen and Methane mixtures, compressed	2.1	UN2034		FLAMMABLE GAS		306	302	302, 314, 315	Forbidden	150 kg	E	40
Hydrogen bromide anhydrous	2.3	UN1048		POISON GAS, CORROSIVE.	3, B14	None	304	314, 315	Forbidden	25 kg	D	40
Hydrogen chloride, anhydrous	2.3	UN1050		POISON GAS, CORROSIVE.	3	None	304	None	Forbidden	Forbidden	D	40
Hydrogen chloride, refrigerated liquid	2.3	UN2186		POISON GAS, CORROSIVE.	3, B6, B43	None	None	314, 315	Forbidden	Forbidden	B	40
Hydrogen, compressed	2.1	UN1049		FLAMMABLE GAS		306	302	302, 314	Forbidden	150 kg	E	40, 57
Hydrogen cyanide, solution in alcohol *with not more than 45 percent hydrogen cyanide*	6.1	UN3294	I	POISON, FLAMMABLE LIQUID.	T18, T26	None	201	243	Forbidden	Forbidden	D	40
Hydrogen cyanide, stabilized *with less than 3 percent water*	6.1	UN1051	I	POISON, FLAMMABLE LIQUID.	1, B12, B35, B61, B65, B77, B82	None	195	244	Forbidden	Forbidden	D	40
Hydrogen cyanide, stabilized, *with less than 3 percent water and absorbed in a porous inert material*	6.1	UN1614	I	POISON	5	None	195	None	Forbidden	Forbidden	D	25, 40
Hydrogen fluoride, anhydrous	8	UN1052	I	CORROSIVE, POISON	3, B7, B12, B46, B71, B77, T24, T27	None	153	243	Forbidden	Forbidden	D	40
Hydrogen iodide, anhydrous	2.3	UN2197		POISON GAS	3, 35, B14	None	304	314, 315	Forbidden	Forbidden	D	40
Hydrogen iodide solution, see Hydriodic acid solution												
Hydrogen peroxide and peroxyacetic acid mixtures, stabilized *with acids, water and not more than 5 percent peroxyacetic acid*	5.1	UN3149	II	OXIDIZER, CORROSIVE	A2, A3, A6 B12, B53 B104, B110, T14	None	202	243	1 L	5 L	D	25 66, 75 106
Hydrogen peroxide, aqueous solutions *with more than 40 percent but not more than 60 percent hydrogen peroxide (stabilized as necessary)*	5.1	UN2014	II	OXIDIZER, CORROSIVE	12, A3, A6 B12, B53, B80, B81, B85, B104, B110, T14, T37	None	202	243	Forbidden	Forbidden	D	25 66 75, 106
Hydrogen peroxide aqueous solutions *with not less than 8 percent but less than 20 percent hydrogen peroxide (stabilized as necessary)*	5.1	UN2984	III	OXIDIZER	17 A1 B104 T8 T37	152	203	241	2.5 L	30 L	B	25, 75 106
Hydrogen peroxide aqueous solutions *with not less than 20 percent but not more than 40 percent hydrogen peroxide (stabilized as necessary)*	5.1	UN2014	II	OXIDIZER, CORROSIVE	A2 A3 A6 B12 B53, B104 B110, T14, T37	None	202	243	1 L	5 L	D	25 66 75 106

§172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	Packing group	Label(s) required (if not excepted)	Special provisions	(8) Packaging authorizations (§173.***) Exceptions	Non-bulk packaging	Bulk packaging	(9) Quantity limitations Passenger aircraft or railcar	Cargo aircraft only	(10) Vessel stowage requirements Vessel stowage	Other stowage provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Hydrogen peroxide stabilized or Hydrogen peroxide aqueous solutions, stabilized *with more than 60 percent hydrogen peroxide*	5.1	UN2015	I	OXIDIZER, CORROSIVE	12, A3, A6, B12, B53, B60, B81, B85, T15, T37	None	201	243	Forbidden	Forbidden	D	26, 66, 75, 108
	Hydrogen, refrigerated liquid *(cryogenic liquid)*	2.1	UN1966		FLAMMABLE GAS		None	316	318, 319	Forbidden	Forbidden	D	40
	Hydrogen selenide, anhydrous	2.3	UN2202		POISON GAS, FLAMMABLE GAS.	1	None	192	245	Forbidden	Forbidden	D	40
	Hydrogen sulfate see Sulfuric acid												
	Hydrogen sulfide, liquefied	2.3	UN1053		POISON GAS, FLAMMABLE GAS.	2, B9, B14	None	304	314, 315	Forbidden	Forbidden	D	40
	Hydrogendifluorides, n.o.s. solid	8	UN1740	II	CORROSIVE	N3, N34	None	212	240	15 kg	50 kg	A	25, 26, 40
				III	CORROSIVE	N3, N34	154	213	240	25 kg	100 kg	A	25, 26, 40
	Hydrogendifluorides, n.o.s. *solutions*	8	UN1740	II	CORROSIVE	N3, N34	None	202	242	1 L	30 L	A	25, 26, 40
				III	CORROSIVE	N3 N34	154	203	241	5 L	60 L	A	25, 26, 40
	Hydroquinone	6.1	UN2662	III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A	
	Hydrofluoric acid, see Fluorosilicic acid												
	Hydroxyl amine iodide	Forbidden											
	Hydroxylamine sulfate	8	UN2865	III	CORROSIVE		154	213	240	25 kg	100 kg	A	
	Hypochlorite solutions *with more than 5 percent but less than 16 percent available chlorine*	8	UN1791	III	CORROSIVE	B104, N34, T7	154	203	241	5 L	60 L	B	26
	Hypochlorite solutions *with 16 percent or more available chlorine*	8	UN1791	II	CORROSIVE	A7, B2, B15, N34, T7	154	202	242	1 L	30 L	B	26
	Hypochlorites, inorganic, n.o.s.	5.1	UN3212	II	OXIDIZER		152	212	240	5 kg	25 kg	D	48, 56 58, 69, 105, 116 118
	Hyponitrous acid	Forbidden											
	Igniter fuse, metal clad, see Fuse, igniter, tubular, metal clad												
	Igniters	1.1G	UN0121	II	EXPLOSIVE 1.1G		None	62	None	Forbidden	Forbidden	B	
	Igniters	1.2G	UN0314	II	EXPLOSIVE 1.2G		None	62	None	Forbidden	Forbidden	B	
	Igniters	1.3G	UN0315	II	EXPLOSIVE 1.3G		None	62	None	Forbidden	Forbidden	A	
	Igniters	1.4G	UN0325	II	EXPLOSIVE 1.4G		None	62	None	Forbidden	75 kg	A	24E
	Igniters	1.4S	UN0454	II	EXPLOSIVE 1.4S		None	62	None	25 kg	100 kg	A	
	3,3'-Iminodipropylamine	8	UN2269	III	CORROSIVE	T8	154	203	241	5 L	60 L	A	
	Infectious substances, affecting animals *only*	6.2	UN2900		INFECTIOUS SUBSTANCE.		196	196	None	50 mL or 50 g.	4 L or 4 kg	B	
	Infectious substances, affecting humans	6.2	UN2814		INFECTIOUS SUBSTANCE		196	196	None	50 mL or 50 g.	4 L or 4 kg	B	
	Inflammable see Flammable												
	Initiating explosives (dry)	Forbidden											
	Inositol hexanitrate (dry)	Forbidden											
	Insecticide gases *flammable* n.o.s.	2.1	NA1954		FLAMMABLE GAS		306	304	314, 315	75 kg	150 kg	D	
	Insecticide gases n.o.s.	2.2	UN1968		NONFLAMMABLE GAS		306	304	314 315	75 kg	150 kg	A	
	Insecticide gases, toxic, n.o.s.	2.3	UN1967		POISON GAS	3	None	193, 334	245	Forbidden	Forbidden	D	40
	Inulin trinitrate (dry)	Forbidden											
	Iodine azide (dry)	Forbidden											
	Iodine monochloride	8	UN1792	II	CORROSIVE	B6, N41, T9, T26	None	212	240	Forbidden	50 kg	D	40, 66, 74, 89, 90
	Iodine pentafluoride	5.1	UN2495	I	OXIDIZER, POISON, CORROSIVE		None	205	243	Forbidden	2.5 L	D	25, 40, 66 90
	2 Iodobutane	3	UN2390	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	B	
	Iodomethylpropanes	3	UN2391	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	B	
	Iodopropanes	3	UN2392	III	FLAMMABLE LIQUID	B1, T8	150	203	242	60 L	220 L	A	
	Iodoxy compounds (dry)	Forbidden											
	Iridium nitrilopentamine iridium nitrate	Forbidden											
	Iron chloride see Ferric chloride												
	Iron oxide, spent, *or* Iron sponge spent *obtained from coal gas purification*	4.2	UN1376	III	SPONTANEOUSLY COMBU-	B16	None	213	240	Forbidden	Forbidden	E	

Iron pentacarbonyl	6.1	UN1994	I	POISON, FLAMMABLE LIQUID	1, B9 B14, B30, B72, B77, T38, T43, T44	None	192	244	Forbidden	Forbidden	D	40
Iron sesquichloride, see Ferric chloride												
Irritating material see Tear gas substances *etc*												
Isobutane *or* Isobutane mixtures *see also* Petroleum gases, liquefied	2.1	UN1969		FLAMMABLE GAS	19	306	304	314, 315	Forbidden	150 kg	E	40
Isobutanol *or* Isobutyl alcohol	3	UN1212	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
Isobutyl acetate	3	UN1213	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
Isobutyl acrylate	3	UN2527	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
Isobutyl alcohol, *see* Isobutanol												
Isobutyl aldehyde *see* Isobutyraldehyde												
D Isobutyl chloroformate	6.1	NA2742	I	POISON, FLAMMABLE LIQUID, CORROSIVE.	2, B9 B14 B32, B74, T38, T43, T45.	None	227	244	1 L	30 L	A	12, 13 22, 25, 40 48, 100
Isobutyl formate	3	UN2393	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
Isobutyl isobutyrate	3	UN2528	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
+ Isobutyl isocyanate	3	UN2486	II	FLAMMABLE LIQUID, POISON.	1, B9, B14, B30, B72, T38, T43 T44	None	226	244	1 L	60 L	D	40
Isobutyl methacrylate	3	UN2283	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
Isobutyl propionate	3	UN2394	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	B	
Isobutylamine	3	UN1214	II	FLAMMABLE LIQUID, CORROSIVE	B101, T8	None	202	243	1 L	5 L	B	40
Isobutylene *see also* Petroleum gases, liquefied	2.1	UN1055		FLAMMABLE GAS	19	306	304	314, 315	Forbidden	150 kg	E	40
Isobutyraldehyde *or* Isobutyl aldehyde	3	UN2045	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	E	40
Isobutyric acid	3	UN2529	III	FLAMMABLE LIQUID, CORROSIVE.	B1, T1	150	203	242	5 L	60 L	A	
Isobutyric anhydride	3	UN2530	III	FLAMMABLE LIQUID, CORROSIVE	B1, T1	150	203	242	5 L	60 L	A	
Isobutyronitrile	3	UN2284	II	FLAMMABLE LIQUID, POISON.	T17	None	202	243	1 L	60 L	E	40
Isobutyryl chloride	3	UN2395	II	FLAMMABLE LIQUID, CORROSIVE.	B100, T9, T26	None	202	243	1 L	5 L	C	40
Isocyanates, flammable, toxic, n.o.s. *or* Isocyanate solutions, flammable, toxic, n.o.s. *flashpoint less than 23 degrees C*	3	UN2478	II	FLAMMABLE LIQUID, POISON.	5, A3, A7, T18	None	202	243	1 L	60 L	D	40
			III	FLAMMABLE LIQUID, KEEP AWAY FROM FOOD.	B1, T8	150	203	242	60 L	220 L	A	
Isocyanates, toxic, flammable, n.o.s. *or* Isocyanate solutions, toxic flammable, n.o.s., *flash point not less than 23 degrees C but not more than 61 degrees C and boiling point less than 300 degrees C*	6.1	UN3080	II	POISON, FLAMMABLE LIQUID	T18	None	202	243	5 L	60 L	D	25, 40, 48
Isocyanates, toxic, n.o.s. *or* Isocyanate, solutions toxic n.o.s., *flash point more than 61 degrees C and boiling point less than 300 degrees C*	6.1	UN2206	II	POISON	T18	None	202	243	5 L	60 L	D	25, 40, 48
			III	KEEP AWAY FROM FOOD.	T8	153	203	241	60 L	220 L	D	25, 40, 48
Isocyanatobenzotrifluorides	6.1	UN2285	II	POISON	5, B101, T14	None	202	243	5 L	60 L	B	25, 40, 48
Isoheptenes	3	UN2287	II	FLAMMABLE LIQUID	T7	150	202	242	5 L	60 L	B	
Isohexenes	3	UN2288	II	FLAMMABLE LIQUID	T7	150	202	242	5 L	60 L	E	
Isooctane see Octanes												
Isooctenes	3	UN1216	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	B	
Isopentane *see n*-Pentane												
Isopentanoic acid see Corrosive liquids, n.o.s.												
Isopentenes	3	UN2371	I	FLAMMABLE LIQUID	T20	150	201	243	1 L	30 L	E	
Isophorone diisocyanate	6.1	UN2290	III	KEEP AWAY FROM FOOD.	T7	153	203	241	60 L	220 L	B	40
Isophoronediamine	8	UN2289	III	CORROSIVE	T8	154	203	241	5 L	60 L	A	
Isoprene, inhibited	3	UN1218	I	FLAMMABLE LIQUID	T20	150	201	243	1 L	30 L	E	
Isopropanol *or* Isopropyl alcohol	3	UN1219	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
Isopropenyl acetate	3	UN2403	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
Isopropenylbenzene	3	UN2303	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
Isopropyl acetate	3	UN1220	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
Isopropyl acid phosphate	8	UN1793	III	CORROSIVE	T7	154	213	240	25 kg	100 kg	A	
Isopropyl alcohol *see* Isopropanol												
Isopropyl butyrate	3	UN2406	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
Isopropyl chloroacetate	3	UN2947	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
Isopropyl chlorofomate	6.1	UN2407	I	POISON FLAMMABLE LIQUID, CORROSIVE.	2, B9, B14, B32, B74, B77, T38, T43 T45.	None	227	244	Forbidden	Forbidden	B	40
Isopropyl 2-chloropropionate	3	UN2934	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
Isopropyl isobutyrate	3	UN2406	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	

§172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	Packing group	Label(s) required (if not excepted)	Special provisions	(8) Packaging authorizations (§173 ***) Exceptions	Non-bulk packaging	Bulk packaging	(9) Quantity limitations Passenger aircraft or railcar	Cargo aircraft only	(10) Vessel stowage requirements Vessel stowage	Other stowage provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
+	Isopropyl isocyanate	3	UN2483	I	FLAMMABLE LIQUID, POISON	1 B9, B14 B30, B72, T38, T43, T44.	None	226	244	Forbidden	30 L	D	40
	Isopropyl mercaptan see Propanethiols												
	Isopropyl nitrate	3	UN1222	II	FLAMMABLE LIQUID	T25	150	202	None	5 L	60 L	D	
	Isopropyl phosphoric acid, see Isopropyl acid phosphate												
	Isopropyl propionate	3	UN2409	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
	Isopropylamine	3	UN1221	I	FLAMMABLE LIQUID, CORROSIVE.	T20	None	201	243	0.5 L	2.5 L	E	
	Isopropylbenzene	3	UN1918	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Isopropylcumyl hydroperoxide, with more than 72 percent in solution	Forbidden											
	Isosorbide dinitrate mixture *with not less than 60 percent lactose, mannose starch or calcium hydrogen phosphate*	4.1	UN2907	II	FLAMMABLE SOLID		None	212	None	15 kg	50 kg	E	
	Isosorbide-5-mononitrate	4.1	UN3251	III	FLAMMABLE SOLID		151	213	240	Forbidden	Forbidden	D	12
	Isothiocyanic acid	Forbidden											
	Jet fuel, see Fuel aviation, turbine engine												
	Jet perforating guns, charged *oil well, without detonator*	1.1D	UN0124	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	
	Jet perforating guns charged, *oil well, without detonator*	1.4D	UN0494	II	EXPLOSIVE 1.4D	114	None	62	None	Forbidden	300 kg	A	24E
	Jet perforators, see Charges, shaped commercial etc.												
	Jet tappers, without detonator, see Charges, shaped commercial, *etc.*												
	Jet thrust igniters, for rocket motors or Jato, see Igniters												
	Jet thrust unit (Jato), see Rocket motors												
	Kerosene	3	UN1223	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Ketones, liquid, n.o.s.	3	UN1224	I	FLAMMABLE LIQUID	T8, T31	None	201	243	1 L	30 L	E	
				II	FLAMMABLE LIQUID	T8, T31	150	202	242	5 L	60 L	B	
				III	FLAMMABLE LIQUID	B1, T7, T30	150	203	242	60 L	220 L	A	
	Krypton, compressed	2.2	UN1056		NONFLAMMABLE GAS		306	302	None	75 kg	150 kg	A	
	Krypton, refrigerated liquid *(cryogenic liquid)*	2.2	UN1970		NONFLAMMABLE GAS		320	None	None	50 kg	500 kg	B	
	Lacquer base or lacquer chips, nitrocellulose, dry, see Nitrocellulose, *etc. (UN 2557)*												
	Lacquer base or lacquer chips, plastic, wet with alcohol or solvent, see Nitrocellulose *(UN 2059, UN 2060 UN 2555, UN2556) or* Paint *etc. (UN1263)*												
	Lead acetate	6.1	UN1616	III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A	
	Lead arsenates	6.1	UN1617	II	POISON		None	212	242	25 kg	100 kg	A	
	Lead arsenites	6.1	UN1618	II	POISON		None	212	242	25 kg	100 kg	A	
	Lead azide (dry)	Forbidden											
	Lead azide, wetted *with not less than 20 percent water or mixture of alcohol and water by mass*	1.1A	UN0129	II	EXPLOSIVE 1.1A	111, 117	None	62	None	Forbidden	Forbidden	E	2E, 6E
	Lead compounds soluble, n.o.s.	6.1	UN2291	III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A	
	Lead cyanide	6.1	UN1620	II	POISON		None	212	242	25 kg	100 kg	A	26
	Lead dioxide	5.1	UN1872	III	OXIDIZER	A1	152	213	240	25 kg	100 kg	A	34
	Lead dross, see Lead sulfate, *with more than 3 percent free acid*												
D	Lead mononitroresorcinate	1.1A	NA0473	II	EXPLOSIVE 1.1A	111, 117	None	62	None	Forbidden	Forbidden	E	2E 6E
	Lead nitrate	5.1	UN1469	II	OXIDIZER, POISON		None	212	242	5 kg	25 kg	A	
	Lead nitroresorcinate (dry)	Forbidden											
	Lead perchlorate, solid	5.1	UN1470	II	OXIDIZER, POISON	T8	None	212	242	5 kg	25 kg	A	56, 58, 106
	Lead perchlorate, solution	5.1	UN1470	II	OXIDIZER, POISON	T8	None	202	243	1 L	5 L	A	56, 58, 106
	Lead peroxide, see Lead dioxide												
	Lead phosphite, dibasic	4.1	UN2989	II	FLAMMABLE SOLID		None	212	240	5 kg	25 kg	B	34
				III	FLAMMABLE SOLID		151	213	240	15 kg	50 kg	B	34
	Lead picrate (dry)	Forbidden											
	Lead styphnate (dry)	Forbidden											
	Lead styphnate, wetted *or* Lead trinitroresorcinate, wetted *with not less than 20 percent water or mixture of alcohol and water, by mass*	1.1A	UN0130	II	EXPLOSIVE 1.1A	111, 117	None	62	None	Forbidden	Forbidden	E	2E 6E
	Lead sulfate *with more than 3 percent free acid*	8	UN1794	II	CORROSIVE		154	212	240	15 kg	50 kg	A	
	Lead trinitroresorcinate, *see* Lead styphnate, *etc*												
	Life-saving appliances not self inflating *containing dangerous goods as equipment*	9	UN3072		None		None	219	None	No limit	No limit	A	
	Life-saving appliances self inflating	9	UN2990		None		None	219	None	No limit	No limit	A	

Lighter replacement cartridges containing liquefied petroleum gases (and similar devices, each not exceeding 65 grams) see Lighters *or* lighter refills *etc. containing flammable gas*													
D Lighters for cigars, cigarettes, *etc., with lighter fluids*	3	NA1226	II	FLAMMABLE LIQUID	N10	None	21	None	Forbidden	Forbidden	B		
Lighters, fuse	1.4S	UN0131	II	EXPLOSIVE 1.4S		None	62	None	25 kg	100 kg	A		
Lighters *or* Lighter refills *cigarettes containing flammable gas*	2.1	UN1057		FLAMMABLE GAS	N10	None	81, 306	None	1 kg	15 kg	B	40	
Lime, unslaked, see Calcium oxide													
Liquefied gas flammable n.o.s.	2.1	UN3161		FLAMMABLE GAS		306	304	314, 315	Forbidden	150 kg	D	40	
Liquefied gas n.o.s.	2.2	UN3163		NONFLAMMABLE GAS		306	304	314, 315	75 kg	150 kg	A		
Liquefied gas oxidizing n.o.s.	2.2	UN3157		NONFLAMMABLE GAS, OXIDIZER.		306	304	314, 315	75 kg	150 kg	D		
Liquefied gas toxic, flammable n.o.s. *Inhalation Hazard Zone A*	2.3	UN3160		POISON GAS, FLAMMABLE GAS.	1	None	192	245	Forbidden	Forbidden	D	40	
Liquefied gas toxic, flammable, n.o.s. *Inhalation Hazard Zone B*	2.3	UN3160		POISON GAS, FLAMMABLE GAS.	2, B9, B14	None	304	314, 315	Forbidden	Forbidden	D	40	
Liquefied gas, toxic, flammable, n.o.s. *Inhalation Hazard Zone C*	2.3	UN3160		POISON GAS, FLAMMABLE GAS.	3, B14	None	304	314 315	Forbidden	Forbidden	D	40	
Liquefied gas, toxic, flammable, n.o.s. *Inhalation Hazard Zone D*	2.3	UN3160		POISON GAS, FLAMMABLE GAS.	4	None	304	314, 315	Forbidden	Forbidden	D	40	
Liquefied gas toxic n.o.s. *Inhalation Hazard Zone A*	2.3	UN3162		POISON GAS	1	None	192	245	Forbidden	Forbidden	D	40	
Liquefied gas toxic, n.o.s. *Inhalation Hazard Zone B*	2.3	UN3162		POISON GAS	2, B9, B14	None	304	314, 315	Forbidden	Forbidden	D	40	
Liquefied gas toxic, n.o.s. *Inhalation Hazard Zone C*	2.3	UN3162		POISON GAS	3, B14	None	304	314, 315	Forbidden	Forbidden	D	40	
Liquefied gas toxic, n.o.s. *Inhalation Hazard Zone D*	2.3	UN3162		POISON GAS	4	None	304	314, 315	Forbidden	Forbidden	D	40	
Liquefied gases, *non-flammable charged with nitrogen, carbon dioxide or air*	2.2	UN1058		NONFLAMMABLE GAS		306	304	None	75 kg	150 kg	A		
Liquefied hydrocarbon gas, see Hydrocarbon gases, liquefied, n.o.s. *etc.*													
Liquefied natural gas, see Methane, *etc. (UN 1972)*													
Liquefied petroleum gas *see* Petroleum gases, liquefied													
Lithium	4.3	UN1415	I	DANGEROUS WHEN WET	A7, A19, B100, N45.	None	211	244	Forbidden	15 kg	E		
Lithium acetylide ethylenediamine complex, see Water reactive solid *etc.*													
Lithium alkyls	4.2	UN2445	I	SPONTANEOUSLY COMBUSTIBLE, DANGEROUS WHEN WET	B11, T28, T40	None	181	244	Forbidden	Forbidden	D		
Lithium aluminum hydride	4.3	UN1410	I	DANGEROUS WHEN WET,	A19, B100,	None	211	242	Forbidden	15 kg	E		
Lithium aluminum hydride, ethereal	4.3	UN1411	I	DANGEROUS WHEN WET, FLAMMABLE LIQUID.	A2, A3, A11, N34	None	201	244	Forbidden	1 L	D	40	
Lithium batteries, contained in equipment	9	UN3091	II	CLASS 9	18, 29 A12	155(I)	155	None	Forbidden	See A12	A		
Lithium battery	9	UN3090	II	CLASS 9	29	155	155	None	Forbidden	35 kg gross	A		
Lithium borohydride	4.3	UN1413	I	DANGEROUS WHEN WET	A19, N40	None	211	242	Forbidden	15 kg	E		
Lithium ferrosilicon	4.3	UN2830	II	DANGEROUS WHEN WET	A19, B108, B108	None	212	241	15 kg	50 kg	E	40 85, 103	
Lithium hydride	4.3	UN1414	I	DANGEROUS WHEN WET	A19, B100, N40	None	211	242	Forbidden	15 kg	E		
Lithium hydride fused solid	4.3	UN2805	II	DANGEROUS WHEN WET	A8, A19, A20, B101, B106.	None	212	241	15 kg	50 kg	E		
Lithium hydroxide monohydrate *or* Lithium hydroxide, solid	8	UN2680	II	CORROSIVE		154	212	240	15 kg	50 kg	A		
Lithium hydroxide, solution	8	UN2679	II	CORROSIVE	B2, T8	154	202	242	1 L	30 L	A		
			III	CORROSIVE	T8	154	203	241	5 L	60 L	A	96	
Lithium hypochlorite, dry or Lithium hypochlorite mixtures, dry	5.1	UN1471	II	OXIDIZER	A8, N34	152	212	240	5 kg	25 kg	A	48, 56, 58, 86, 106, 116	
Lithium in cartridges, see Lithium													
Lithium nitrate	5.1	UN2722	III	OXIDIZER	A1	152	213	240	25 kg	100 kg	A		
Lithium nitride	4.3	UN2806	I	DANGEROUS WHEN WET	A19, N40	None	211	242	Forbidden	15 kg	E		
Lithium peroxide	5.1	UN1472	II	OXIDIZER	A9, N34	152	212	None	5 kg	25 kg	A	13 76 106	
Lithium silicon	4.3	UN1417	II	DANGEROUS WHEN WET	A19, A20, B100	None	212	241	15 kg	50 kg	A	85, 103	
LNG, see Methane *etc. (UN 1972)*													
London purple	6.1	UN1621	II	POISON		None	212	242	25 kg	100 kg	A		
LPG, see Petroleum gases liquefied													
Lye see Sodium hydroxide, solutions													
Magnesium alkyls	4.2	UN3053	I	SPONTANEOUSLY COMBUSTIBLE.	B11, T28, T29, T40.	None	181	244	Forbidden	Forbidden	D	16	
Magnesium aluminum phosphide	4.3	UN1419	I	DANGEROUS WHEN WET POISON	A19, B100, N34, N40	None	211	242	Forbidden	15 kg	E	40 85	

§172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols (1)	Hazardous materials descriptions and proper shipping names (2)	Hazard class or Division (3)	Identification Numbers (4)	Packing group (5)	Label(s) required (if not excepted) (6)	Special provisions (7)	(8) Packaging authorizations (§173 ***) Exceptions (8A)	Non-bulk packaging (8B)	Bulk packaging (8C)	(9) Quantity limitations Passenger aircraft or railcar (9A)	Cargo aircraft only (9B)	(10) Vessel stowage requirements Vessel stowage (10A)	Other stowage provisions (10B)
+	Magnesium arsenate	6.1	UN1622	II	POISON		None	212	242	25 kg	100 kg	A	
	Magnesium bisulfite solution *see* Bisulfites, aqueous solutions, n.o.s.												
	Magnesium bromate	5.1	UN1473	II	OXIDIZER	A1	152	212	242	5 kg	25 kg	A	56, 58, 106
	Magnesium chlorate	5.1	UN2723	II	OXIDIZER		152	212	242	5 kg	25 kg	A	56, 58, 106
	Magnesium diamide	4.2	UN2004	II	SPONTANEOUSLY COMBUSTIBLE	A8, A19, A20	None	212	241	15 kg	50 kg	C	
	Magnesium diphenyl	4.2	UN2005	I	SPONTANEOUSLY COMBUSTIBLE		None	187	244	Forbidden	Forbidden	C	
	Magnesium dross, wet or hot	Forbidden											
	Magnesium fluorosilicate	6.1	UN2853	III	KEEP AWAY FROM FOOD		153	213	240	100 kg	200 kg	A	26
	Magnesium granules coated *particle size not less than 149 microns*	4.3	UN2950	III	DANGEROUS WHEN WET.	A1, A19, B108	None	213	240	25 kg	100 kg	A	
	Magnesium hydride	4.3	UN2010	I	DANGEROUS WHEN WET	A19, B100, N40	None	211	242	Forbidden	15 kg	E	
	Magnesium *or* Magnesium alloys *with more than 50 percent magnesium in pellets, turnings or ribbons*	4.1	UN1869	III	FLAMMABLE SOLID	A1	151	213	240	25 kg	100 kg	A	39
	Magnesium nitrate	5.1	UN1474	III	OXIDIZER	A1	152	213	240	25 kg	100 kg	A	
	Magnesium perchlorate	5.1	UN1475	II	OXIDIZER		152	212	242	5 kg	25 kg	A	56, 58, 106
	Magnesium peroxide	5.1	UN1476	II	OXIDIZER		152	212	242	5 kg	25 kg	A	13, 75 106
	Magnesium phosphide	4.3	UN2011	I	DANGEROUS WHEN WET, POISON.	A19, N40	None	211	None	Forbidden	15 kg	E	40, 85
	Magnesium, powder *or* Magnesium alloys powder	4.3	UN1418	I	DANGEROUS WHEN WET, SPONTANEOUSLY COMBUSTIBLE.	A19, B56	None	211	244	Forbidden	15 kg	A	39
				II	DANGEROUS WHEN WET, SPONTANEOUSLY COMBUSTIBLE.	A19, B56, B100	None	212	241	15 kg	50 kg	A	39
				III	DANGEROUS WHEN WET, SPONTANEOUSLY COMBUSTIBLE	A19, B56	None	213	241	25 kg	100 kg	A	39
	Magnesium scrap, see Magnesium, *etc. (UN 1869)*												
	Magnesium silicide	4.3	UN2624	II	DANGEROUS WHEN WET	A19, A20, B105, B106.	None	212	241	15 kg	50 kg	B	85, 103
	Magnetized material, see section 173.21												
D	Maleic acid	8	NA2215	III	CORROSIVE		154	213	240	25 kg	100 kg	A	
	Maleic anhydride	8	UN2215	III	CORROSIVE	T7	154	213	240	25 kg	100 kg	A	
	Malononitrile	6.1	UN2647	II	POISON		None	212	242	25 kg	100 kg	A	12
	Mancozeb (manganese ethylenebisdithiocarbamate complex with zinc) see Maneb												
	Maneb *or* Maneb preparations *with not less than 60 percent maneb*	4.2	UN2210	III	SPONTANEOUSLY COMBUSTIBLE, DANGEROUS WHEN WET	A1, A19, B105	None	213	242	25 kg	100 kg	A	34
	Maneb stabilized *or* Maneb preparations, stabilized *against self-heating*	4.3	UN2968	III	DANGEROUS WHEN WET	53, A1, A19, B108	None	213	242	25 kg	100 kg	B	34
	Manganese nitrate	5.1	UN2724	III	OXIDIZER	A1	152	213	240	25 kg	100 kg	A	
	Manganese resinate	4.1	UN1330	III	FLAMMABLE SOLID	A1	151	213	240	25 kg	100 kg	A	
	Mannitan tetranitrate	Forbidden											
	Mannitol hexanitrate (dry)	Forbidden											
D	Mannitol hexanitrate, wetted *or* Nitromannite, wetted *with not less than 40 percent water, by mass or mixture of alcohol and water*	1.1A	NA0133	II	EXPLOSIVE 1.1A	111	None	62	None	Forbidden	Forbidden	E	1E, 5E
	Marine pollutants liquid or solid n.o.s. see Environmentally hazardous substances, liquid *or* solid, n.o.s.												
	Matches, block see Matches, 'strike anywhere'												
	Matches, fuses	4.1	UN2254	III	FLAMMABLE SOLID		186	186	None	Forbidden	Forbidden	A	
	Matches, safety *(book card or strike on box)*	4.1	UN1944	III	FLAMMABLE SOLID		186	186	None	25 kg	100 kg	A	
	Matches, strike anywhere	4.1	UN1331	III	FLAMMABLE SOLID		186	186	None	Forbidden	Forbidden	B	
	Matches, wax, Vesta	4.1	UN1945	III	FLAMMABLE SOLID		186	186	None	25 kg	100 kg	B	
	Mating acid see Sulfuric acid												
	Medicine liquid flammable toxic n.o.s.	3	UN3248	II	FLAMMABLE LIQUID, POISON.	38	None	202	None	L	5 L	B	40

				III	FLAMMABLE LIQUID, KEEP AWAY FROM FOOD	36	150	203	None	5 L	5 L	A		
	Medicine, liquid toxic, n.o.s.	6.1	UN1851	II	POISON		153	202	243	5 L	5 L	C	40	
				III	KEEP AWAY FROM FOOD.		153	203	241	5 L	5 L	C	40	
	Medicine, solid, toxic, n.o.s	6.1	UN3249	II	POISON	36	153	212	None	5 kg	5 kg	C	40	
				III	KEEP AWAY FROM FOOD.	36	153	213	None	5 kg	5 kg	C	40	
D	Medicines, corrosive, liquid, n.o.s	8	NA1760	II	CORROSIVE	B3	154	202	242	1 L	30 L	B	40	
				III	CORROSIVE		154	203	241	5 L	60 L	A	40	
D	Medicines, corrosive, solid, n.o.s.	8	NA1759	II	CORROSIVE		154	212	240	15 kg	50 kg	A		
				III	CORROSIVE		154	213	240	25 kg	100 kg	A		
D	Medicines, flammable, liquid n.o.s.	3	NA1993	I	FLAMMABLE LIQUID		150	201	243	1 L	30 L	E		
				II	FLAMMABLE LIQUID		150	202	242	5 L	60 L	E		
				III	FLAMMABLE LIQUID	B1	150	203	242	60 L	220 L	A		
D	Medicines, flammable solid, n.o.s	4.1	NA1325	II	FLAMMABLE SOLID		151	212	240	15 kg	50 kg	E		
D	Medicines, oxidizing substance, solid, n.o.s.	5.1	NA1479	II	OXIDIZER		152	212	242	5 kg	25 kg	B	56, 58, 60, 106	
	Mentahydrophthalic anhydride, see Corrosive liquids, n.o.s.													
	Mercaptans, liquid, flammable, toxic, n.o.s. or Mercaptan mixtures, liquid, flammable, toxic, n.o.s.	3	UN1228	II	FLAMMABLE LIQUID, POISON.	T19	None	202	243	Forbidden	60 L	B	40 96	
				III	FLAMMABLE LIQUID, KEEP AWAY FROM FOOD.	B1, T8	150	203	242	5 L	220 L	A	40, 96	
	Mercaptans, liquid, toxic, flammable n.o.s or Mercaptan mixtures, liquid, toxic, flammable, n.o.s., flash point not less than 23 degrees C	6.1	UN3071	II	POISON, FLAMMABLE LIQUID.	T14	None	202	243	5 L	60 L	C	40, 121	
	5-Mercaptotetrazol-1-acetic acid	1.4C	UN0448	II	EXPLOSIVE 1.4C		None	62	None	Forbidden	75 kg	A	1E, 5E, 24E	
	Mercuric arsenate	6.1	UN1623	II	POISON		None	212	242	25 kg	100 kg	A		
	Mercuric chloride	6.1	UN1624	II	POISON		None	212	242	25 kg	100 kg	A		
	Mercuric compounds, see Mercury compounds, etc													
	Mercuric nitrate	6.1	UN1625	II	POISON	N73	None	212	242	25 kg	100 kg	A		
	Mercuric potassium cyanide	6.1	UN1626	I	POISON	N74, N75	None	211	242	5 kg	50 kg	A	26	
	Mercuric sulfocyanate, see Mercury thiocyanate													
	Mercurol, see Mercury nucleate													
	Mercurous azide	Forbidden												
	Mercurous compounds, see Mercury compounds, etc.													
	Mercurous nitrate	6.1	UN1627	II	POISON		None	212	242	25 kg	100 kg	A		
A, W	Mercury	8	UN2809	III	CORROSIVE		154	154	240	35 kg	35 kg	B	40 97	
	Mercury acetate	6.1	UN1629	II	POISON		None	212	242	25 kg	100 kg	A		
	Mercury acetylide	Forbidden												
	Mercury ammonium chloride	6.1	UN1630	II	POISON		None	212	242	25 kg	100 kg	A		
	Mercury based pesticides, liquid, flammable, toxic, flash point less than 23 degrees C	3	UN2778	I	FLAMMABLE LIQUID, POISON.		None	201	243	Forbidden	30 L	B	40	
				II	FLAMMABLE LIQUID, POISON.		None	202	243	1 L	60 L	B	40	
				III	FLAMMABLE LIQUID, KEEP AWAY FROM FOOD.	B1	150	203	242	60 L	220 L	B	40	
	Mercury based pesticides, liquid, toxic	6.1	UN3012	I	POISON	T42	None	201	243	1 L	30 L	B	40	
				II	POISON	T14	None	202	243	5 L	60 L	B	40	
				III	KEEP AWAY FROM FOOD.	T14	153	203	241	60 L	220 L	A	40	
	Mercury based pesticides, liquid, toxic, flammable, flashpoint not less than 23 degrees C	6.1	UN3011	I	POISON, FLAMMABLE LIQUID.	T42	None	201	243	1 L	30 L	B	40	
				II	POISON, FLAMMABLE LIQUID.	T14	None	202	243	5 L	60 L	B	40	
				III	KEEP AWAY FROM FOOD, FLAMMABLE LIQUID.	T14	153	203	242	60 L	220 L	A	40	
	Mercury based pesticides, solid, toxic	6.1	UN2777	I	POISON		None	211	242	5 kg	50 kg	A	40	
				II	POISON		None	212	242	25 kg	100 kg	A	40	
				III	KEEP AWAY FROM FOOD		153	213	240	100 kg	200 kg	A	40	
	Mercury benzoate	6.1	UN1631	II	POISON		None	212	242	25 kg	100 kg	A		
	Mercury bromides	6.1	UN1634	II	POISON		None	212	242	25 kg	100 kg	A		
	Mercury compounds, liquid, n.o.s	6.1	UN2024	I	POISON		None	201	243	1 L	30 L	B	40	
				II	POISON		None	202	243	5 L	60 L	B	40	
				III	KEEP AWAY FROM FOOD.		153	203	241	60 L	220 L	B	40	
	Mercury compounds, solid, n.o.s	6.1	UN2025	I	POISON		None	211	242	5 kg	50 kg	A		

§172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols (1)	Hazardous materials descriptions and proper shipping names (2)	Hazard class or Division (3)	Identification Numbers (4)	Packing group (5)	Label(s) required (if not excepted) (6)	Special provisions (7)	(8) Packaging authorizations (§173.***) Exceptions (8A)	Non-bulk packaging (8B)	Bulk packaging (8C)	(9) Quantity limitations Passenger aircraft or railcar (9A)	Cargo aircraft only (9B)	(10) Vessel stowage requirements Vessel stowage (10A)	Other stowage provisions (10B)
				II	POISON		None	212	242	25 kg	100 kg	A	
				III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A	
A	Mercury contained in manufactured articles	8	UN2809	I	CORROSIVE		None	164	None	No limit	No limit	B	40, 97
	Mercury cyanide	6.1	UN1636	II	POISON	N74, N75	None	212	242	25 kg	100 kg	A	26
	Mercury fulminate, wetted with not less than 20 percent water, or mixture of alcohol and water, by mass	1.1A	UN0135	II	EXPLOSIVE 1.1A	111, 117	None	62	None	Forbidden	Forbidden	E	2E, 6E
	Mercury gluconate	6.1	UN1637	II	POISON		None	212	242	25 kg	100 kg	A	
	Mercury iodide	6.1	UN1638	II	POISON		None	212	242	25 kg	100 kg	A	
	Mercury iodide aquabasic ammonobasic (iodide of Millon's base)	Forbidden											
	Mercury iodide, solution	6.1	UN1638	II	POISON		None	202	243	5 L	60 L	A	
	Mercury nitride	Forbidden											
	Mercury nucleate	6.1	UN1639	II	POISON		None	212	242	25 kg	100 kg	A	
	Mercury oleate	6.1	UN1640	II	POISON		None	212	242	25 kg	100 kg	A	
	Mercury oxide	6.1	UN1641	II	POISON		None	212	242	25 kg	100 kg	A	
	Mercury oxycyanide	Forbidden											
	Mercury oxycyanide, desensitized	6.1	UN1642	II	POISON		None	212	242	25 kg	100 kg	A	26, 91
	Mercury potassium iodide	6.1	UN1643	II	POISON		None	212	242	25 kg	100 kg	A	
	Mercury salicylate	6.1	UN1644	II	POISON		None	212	242	25 kg	100 kg	A	
+	Mercury sulfates	6.1	UN1645	II	POISON		None	212	242	25 kg	100 kg	A	
	Mercury thiocyanate	6.1	UN1646	II	POISON		None	212	242	25 kg	100 kg	A	
	Mesityl oxide	3	UN1229	III	FLAMMABLE LIQUID	B1, T1	None	203	242	60 L	220 L	A	
	Metal alkyl halides, n.o.s. or Metal aryl halides, n.o.s.	4.2	UN3049	I	SPONTANEOUSLY COMBUSTIBLE.	B9, B11, T28, T29, T40.	None	181	244	Forbidden	Forbidden	D	
	Metal alkyl hydrides, n.o.s. or Metal aryl hydrides, n.o.s.	4.2	UN3050	I	SPONTANEOUSLY COMBUSTIBLE.	B9, B11, T28, T29, T40	None	181	244	Forbidden	Forbidden	D	
D	Metal alkyl, solution, n.o.s.	3	NA9195	II	FLAMMABLE LIQUID		150	202	242	1 L	4 L	B	
	Metal alkyls, n.o.s. or Metal aryls, n.o.s.	4.2	UN2003	I	SPONTANEOUSLY COMBUSTIBLE.	B11, T42	None	181	244	Forbidden	Forbidden	D	
	Metal carbonyls, n.o.s.	6.1	UN3281	I	POISON		None	201	243	1 L	30 L	B	40
				II	POISON	T14	None	202	243	5 L	60 L	B	40
				III	KEEP AWAY FROM FOOD.	T7	153	203	241	60 L	220 L	A	40
	Metal catalyst, dry	4.2	UN2881	I	SPONTANEOUSLY COMBUSTIBLE.	N34	None	187	None	Forbidden	Forbidden	C	
				II	SPONTANEOUSLY COMBUSTIBLE	N34	None	187	None	Forbidden	50 kg	C	
				III	SPONTANEOUSLY COMBUSTIBLE.	N34	None	187	None	25 kg	100 kg	C	
	Metal catalyst, wetted with a visible excess of liquid	4.2	UN1378	II	SPONTANEOUSLY COMBUSTIBLE.	A2, A8, N34	None	212	None	Forbidden	50 kg	C	
	Metal hydrides, flammable, n.o.s.	4.1	UN3182	II	FLAMMABLE SOLID	A1	151	212	240	15 kg	50 kg	E	
				III	FLAMMABLE SOLID	A1	151	213	240	25 kg	100 kg	E	
	Metal hydrides, water reactive, n.o.s.	4.3	UN1409	I	DANGEROUS WHEN WET	A19, N34, N40	None	211	242	Forbidden	15 kg	D	
				II	DANGEROUS WHEN WET.	A19, N34, N40	None	212	242	15 kg	50 kg	D	
	Metal powder, self-heating, n.o.s.	4.2	UN3189	II	SPONTANEOUSLY COMBUSTIBLE.		None	212	241	15 kg	50 kg	C	
				III	SPONTANEOUSLY COMBUSTIBLE.		None	213	241	25 kg	100 kg	C	
	Metal powders, flammable, n.o.s.	4.1	UN3089	II	FLAMMABLE SOLID		151	212	240	15 kg	50 kg	B	
				III	FLAMMABLE SOLID		151	213	240	25 kg	100 kg	B	
	Metal salts of methyl nitramine (dry)	Forbidden											
	Metal salts of organic compounds, flammable, n.o.s.	4.1	UN3181	II	FLAMMABLE SOLID	A1	151	212	240	15 kg	50 kg	B	40
				III	FLAMMABLE SOLID	A1	151	213	240	25 kg	100 kg	B	40
	Metaldehyde	4.1	UN1332	III	FLAMMABLE SOLID	A1	151	213	240	25 kg	100 kg	A	
	Metallic substance, water-reactive, n.o.s.	4.3	UN3208	I	DANGEROUS WHEN WET		None	211	242	Forbidden	15 kg	E	40
				II	DANGEROUS WHEN WET		None	212	242	15 kg	50 kg	E	40
				III	DANGEROUS WHEN WET		None	213	241	25 kg	100 kg	E	40

Metallic substance water-reactive self heating n o s	4 3	UN3209	I	DANGEROUS WHEN WET, SPONTANEOUSLY COMBUSTIBLE		None	211	242	Forbidden	15 kg	E	40
			II	DANGEROUS WHEN WET, SPONTANEOUSLY COMBUSTIBLE		None	212	242	15 kg	50 kg	E	40
			III	DANGEROUS WHEN WET, SPONTANEOUSLY COMBUSTIBLE		None	213	242	25 kg	100 kg	E	40
Methacrylaldehyde	3	UN2396	II	FLAMMABLE LIQUID, POISON	T8	None	202	243	1 L	60 L	E	40
Methacrylic acid, inhibited	8	UN2531	III	CORROSIVE	T8	154	203	241	5 L	60 L	A	
+ Methacrylonitrile, inhibited	3	UN3079	I	FLAMMABLE LIQUID, POISON	2, B9, B14, B32, B74, T38, T43, T45.	None	227	244	Forbidden	30 L	D	12, 40, 48
Methallyl alcohol	3	UN2614	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
Methane and hydrogen, mixtures, see Hydrogen and methane, mixtures, liq.												
Methane, compressed *or* Natural gas, compressed *(with high methane content)*	2.1	UN1971		FLAMMABLE GAS		306	302	302	Forbidden	150 kg	E	40
Methane, refrigerated liquid *(cryogenic liquid)* or Natural gas, refrigerated liquid *(cryogenic liquid), with high methane content)*	2 1	UN1972		FLAMMABLE GAS		None	None	318	Forbidden	Forbidden	D	40
Methanesulfonyl chloride	6.1	UN3246	I	POISON, CORROSIVE	T24, T26	None	201	243	0.5 L	2 5 L	D	40
I Methanol, or Methyl alcohol	3	UN1230	II	FLAMMABLE LIQUID, POISON	T8	150	202	242	1 L	60 L	B	40
D Methanol, or Methyl alcohol	3	UN1230	III	FLAMMABLE LIQUID	T8	150	202	242	1 L	60 L	B	40
Methazoic acid	Forbidden											
4-Methoxy-4-methylpentan-2-one	3	UN2293	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
1-Methoxy 2-propanol	3	UN3092	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
+ Methoxymethyl isocyanate	3	UN2605	I	FLAMMABLE LIQUID, POISON	1, B9, B14, B30, B72 T38, T43, T44	None	226	244	Forbidden	30 L	D	40
Methyl acetate	3	UN1231	II	FLAMMABLE LIQUID	B101, T8	150	202	242	5 L	60 L	B	
Methyl acetylene and propadiene mixtures, stabilized	2 1	UN1060		FLAMMABLE GAS		306	304	314, 315	Forbidden	150 kg	B	40
Methyl acrylate, inhibited	3	UN1919	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	B	
Methyl alcohol, *see* Methanol												
Methyl allyl chloride	3	UN2554	II	FLAMMABLE LIQUID	B101, T8	150	202	242	5 L	60 L	E	
Methyl amyl ketone, *see* Amyl methyl ketone												
Methyl benzoate	6.1	UN2938	III	KEEP AWAY FROM FOOD.	T1	153	203	241	60 L	220 L	A	
Methyl bromide	2.3	UN1062		POISON GAS	3, B14	None	193	314, 315	Forbidden	25 kg	D	40
Methyl bromide and chloropicrin mixtures with more than 2 percent chloropicrin, see Chloropicrin and methyl bromide mixtures												
Methyl bromide and chloropicrin mixtures with not more than 2 percent chloropicrin, see Methyl bromide												
Methyl bromide and ethylene dibromide mixtures, liquid	6.1	UN1647	I	POISON	2, B9 B14, B32, B74, N66, T38, T43 T45.	None	227	244	Forbidden	30 L	C	40
Methyl bromoacetate	6.1	UN2643	II	POISON	B100, T8	None	202	243	5 L	60 L	D	40
2-Methyl-1-butene	3	UN2459	I	FLAMMABLE LIQUID	T14	None	201	243	1 L	30 L	E	
2-Methyl-2-butene	3	UN2460	II	FLAMMABLE LIQUID	T14	None	202	242	5 L	60 L	E	
3-Methyl-1-butene	3	UN2561	I	FLAMMABLE LIQUID	T20	None	201	243	1 L	30 L	E	
Methyl tert-butyl ether	3	UN2398	II	FLAMMABLE LIQUID	B101, T14	150	202	242	5 L	60 L	E	
Methyl butyrate	3	UN1237	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
Methyl chloride	2 1	UN1063		FLAMMABLE GAS		306	304	314 315	5 kg	100 kg	D	40
Methyl chloride and chloropicrin mixtures, see Chloropicrin and methyl chloride mixtures												
Methyl chloride and methylene chloride mixtures	2 1	UN1912		FLAMMABLE GAS		306	304	314, 315	Forbidden	150 kg	D	40
Methyl chloroacetate	6 1	UN2295	II	POISON	T11	None	202	243	5 L	60 L	C	
Methyl chlorocarbonate, see Methyl chloroformate												
Methyl chloroform, see 1,1 1 Trichloroethane												
Methyl chloroformate	6.1	UN1238	I	POISON, FLAMMABLE LIQUID CORROSIVE	1, A3, A6, A7, B9, B14 B30 B72 N34, T38, T43, T44	None	226	244	Forbidden	Forbidden	D	21, 40 100
Methyl chloromethyl ether	6.1	UN1239	I	POISON, FLAMMABLE LIQUID	1 B9 B14 B30, B72, T38, T43, T44	None	226	244	Forbidden	Forbidden	D	40
Methyl 2-chloropropionate	3	UN2933	III	FLAMMABLE LIQUID	B1, T7	150	203	242	60 L	220 L	A	
Methyl dichloroacetate	6.1	UN2299	III	KEEP AWAY FROM FOOD.	T1	153	203	241	60 L	220 L	A	

§172 101 HAZARDOUS MATERIALS TABLE—Continued

Symbols (1)	Hazardous materials descriptions and proper shipping names (2)	Hazard class or Division (3)	Identification Numbers (4)	Packing group (5)	Label(s) required (if not excepted) (6)	Special provisions (7)	(8) Packaging authorizations (§173 ***) Exceptions (8A)	Non-bulk packaging (8B)	Bulk packaging (8C)	(9) Quantity limitations Passenger aircraft or railcar (9A)	Cargo aircraft only (9B)	(10) Vessel stowage requirements Vessel stowage (10A)	Other stowage provisions (10B)
	Methyl ethyl ether, see Ethyl methyl ether												
	Methyl ethyl ketone, *see* Ethyl methyl ketone												
	Methyl ethyl ketone peroxide, in solution with more than 9 percent by mass active oxygen	Forbidden											
	2-Methyl-5-ethylpyridine	6.1	UN2300	III	KEEP AWAY FROM FOOD	T7	153	203	241	60 L	220 L	A	
	Methyl fluoride	2.1	UN2454		FLAMMABLE GAS		306	304	314, 315	Forbidden	150 kg	E	40
	Methyl formate	3	UN1243	I	FLAMMABLE LIQUID	T20	150	201	243	1 L	30 L	E	
	Methyl iodide	6.1	UN2644	I	POISON	2, B9, B14, B32, B74, T38, T43, T45.	None	227	244	Forbidden	Forbidden	A	12, 40
	Methyl isobutyl carbinol	3	UN2053	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Methyl isobutyl ketone	3	UN1245	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
	Methyl isobutyl ketone peroxide, in solution with more than 9 percent by mass active oxygen	Forbidden											
	Methyl isocyanate	6.1	UN2480	I	POISON, FLAMMABLE LIQUID	1, A7, B9, B14, B30, B72, T38, T43, T44.	None	226	244	Forbidden	Forbidden	D	26, 40
	Methyl isopropenyl ketone, inhibited	3	UN1246	II	FLAMMABLE LIQUID	T7	150	202	242	5 L	60 L	B	
+	Methyl isothiocyanate	3	UN2477	II	FLAMMABLE LIQUID, POISON	2, B9, B14, B32 B74, T38, T43, T45	None	227	244	Forbidden	60 L	A	
	Methyl isovalerate	3	UN2400	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
	Methyl magnesium bromide, in ethyl ether	4.3	UN1928	I	DANGEROUS WHEN WET, FLAMMABLE LIQUID.		None	201	243	Forbidden	1 L	D	
	Methyl mercaptan	2.3	UN1064		POISON GAS, FLAMMABLE GAS	3, 25, B7, B9, B14	None	304	314, 315	Forbidden	25 kg	D	40
	Methyl mercaptopropionaldehyde, see This-4-pentanal												
	Methyl methacrylate monomer, inhibited	3	UN1247	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	B	40
	Methyl nitramine (dry)	Forbidden											
	Methyl nitrate	Forbidden											
	Methyl nitrite	Forbidden											
	Methyl norbornene dicarboxylic anhydride, see Corrosive liquids, n.o.s.												
	Methyl orthosilicate	6.1	UN2606	I	POISON, FLAMMABLE LIQUID.	2, B9, B14, B32, B74, T38, T43, T45.	None	227	244	Forbidden	30 L	E	40
D	Methyl parathion *liquid*	6.1	NA3018	II	POISON	N76, T14	None	202	243	Forbidden	1 L	A	40
D	Methyl parathion *solid*	6.1	NA2783	II	POISON	N77	None	212	242	25 kg	100 kg	A	40
D	Methyl phosphonic dichloride	6.1	NA9206	I	POISON, CORROSIVE	2, A3, B9, B14, B32, B74, N34, N43, T38, T43, T45	None	227	244	Forbidden	Forbidden	C	
	Methyl phosphonothioic dichloride, anhydrous, see Corrosive liquid, n.o.s.												
D	Methyl phosphonous dichloride, *pyrophoric liquid*	6.1	NA2845	I	POISON, SPONTANEOUSLY COMBUSTIBLE.	2, B9, B14, B16, B32, B74, T38, T43, T45.	None	227	244	Forbidden	Forbidden	D	18
	Methyl picric acid (heavy metal salts of)	Forbidden											
	Methyl propionate	3	UN1248	II	FLAMMABLE LIQUID	B101, T2	150	202	242	5 L	60 L	B	
	Methyl propyl ether	3	UN2612	II	FLAMMABLE LIQUID	T14	150	202	242	5 L	60 L	E	40
	Methyl propyl ketone	3	UN1249	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
	Methyl sulfate, see Dimethyl sulfate												
	Methyl sulfide, see Dimethyl sulfide												
	Methyl trichloroacetate	6.1	UN2533	III	KEEP AWAY FROM FOOD.	45 T1	153	203	241	60 L	220 L	A	
	Methyl trimethylol methane trinitrate	Forbidden											
	Methyl vinyl ketone	3	UN1251	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	B	
	Methylal	3	UN1234	II	FLAMMABLE LIQUID	T14	None	202	242	5 L	60 L	E	
	Methylamine, anhydrous	2.1	UN1061		FLAMMABLE GAS		306	304	314, 315	Forbidden	150 kg	B	40
	Methylamine, aqueous solution	3	UN1235	II	FLAMMABLE LIQUID, CORROSIVE.	B1, T8	150	202	243	1 L	5 L	E	41

	Methylamine dinitramine and dry salts thereof	Forbidden												
	Methylamine nitroform	Forbidden												
	Methylamine perchlorate (dry)	Forbidden												
	Methylamyl acetate	3	UN1233	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A		
	N-Methylaniline	6.1	UN2294	III	KEEP AWAY FROM FOOD	T7	153	203	241	60 L	220 L	A		
	alpha-Methylbenzyl alcohol	6.1	UN2937	III	KEEP AWAY FROM FOOD	T1	153	203	241	60 L	220 L	A		
	3-Methylbutan 2-one	3	UN2397	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B		
	N-Methylbutylamine	3	UN2945	II	FLAMMABLE LIQUID, CORROSIVE.	T8	None	202	243	1 L	5 L	B	40	
	Methylchlorosilane	2.3	UN2534		POISON GAS, FLAMMABLE GAS, CORROSIVE.	2, A2, A3, A7, B9, B14, N34	None	226	314 315	Forbidden	Forbidden	D	17, 40	
	Methylcyclohexane	3	UN2296	II	FLAMMABLE LIQUID	B1, T1	150	202	242	5 L	60 L	B		
	Methylcyclohexanols, flammable	3	UN2617	III	FLAMMABLE LIQUID	B1, T2	150	203	242	60 L	220 L	A		
	Methylcyclohexanone	3	UN2297	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A		
	Methylcyclopentane	3	UN2298	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	B		
D	Methyldichloroarsine	6.1	NA1556	I	POISON	2	None	192	None	Forbidden	Forbidden	D	40 95	
	Methyldichlorosilane	4.3	UN1242	I	DANGEROUS WHEN WET, CORROSIVE, FLAMMABLE LIQUID	A2, A3, A7, B6, B77, N34, T18, T26.	None	201	243	Forbidden	1 L	D	21 28 40 49, 100	
	Methylene chloride, see Dichloromethane													
	Methylene glycol dinitrate	Forbidden												
	2-Methylfuran	3	UN2301	II	FLAMMABLE LIQUID	T7	150	202	242	5 L	60 L	E		
	a-Methylglucoside tetranitrate	Forbidden												
	a-Methylglycerol trinitrate	Forbidden												
	5-Methylhexan-2-one	3	UN2302	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A		
	Methylhydrazine	6.1	UN1244	I	POISON, FLAMMABLE LIQUID, CORROSIVE.	1, B9, B14, B30, B72, B77, N34, T38, T43, T44.	None	226	244	Forbidden	Forbidden	D	21, 40 49 100	
	Methylmorpholine	3	UN2535	II	FLAMMABLE LIQUID, CORROSIVE.	B6, T8	None	202	243	1 L	5 L	B	40	
	Methylpentadienes	3	UN2461	II	FLAMMABLE LIQUID	T7	150	202	242	5 L	60 L	E		
	2-Methylpentan-2-ol	3	UN2560	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A		
	Methylpentanes, see Hexanes													
	Methylphenyldichlorosilane	8	UN2437	II	CORROSIVE	T8, T26	154	202	242	1 L	30 L	C	40	
	1-Methylpiperidine	3	UN2399	II	FLAMMABLE LIQUID, CORROSIVE	T8	None	202	243	1 L	5 L	B		
	Methyltetrahydrofuran	3	UN2536	II	FLAMMABLE LIQUID	B101, T7	150	202	242	5 L	60 L	B		
	Methyltrichlorosilane	3	UN1250	I	FLAMMABLE LIQUID, CORROSIVE	A7, B6, B77, N34, T14, T26	None	201	243	Forbidden	2.5 L	B	40	
	alpha-Methylvaleraldehyde	3	UN2367	II	FLAMMABLE LIQUID	B1, T1	150	202	242	5 L	60 L	B		
	Mine rescue equipment containing carbon dioxide, see Carbon dioxide													
	Mines with bursting charge	1.1F	UN0136	II	EXPLOSIVE 1.1F			62	None	Forbidden	Forbidden	E		
	Mines with bursting charge	1.1D	UN0137	II	EXPLOSIVE 1.1D			62	None	Forbidden	Forbidden	B	3E, 7E	
	Mines with bursting charge	1.2D	UN0138	II	EXPLOSIVE 1.2D			62	None	Forbidden	Forbidden	B	3E 7E	
	Mines with bursting charge	1.2F	UN0294	II	EXPLOSIVE 1.2F			62	None	Forbidden	Forbidden	E		
	Mixed acid, see Nitrating acid, mixtures etc.													
	Mobility aids, see Wheel chair, electric													
D	Model rocket motor	1.4C	NA0276	II	EXPLOSIVE 1.4C	51	None	62	None	Forbidden	75 kg	A	24E	
D	Model rocket motor	1.4S	NA0323	II	EXPLOSIVE 1.4S	51	None	62	None	25 kg	100 kg	A	9E	
	Molybdenum pentachloride	8	UN2508	III	CORROSIVE	T8, T26	154	213	240	25 kg	100 kg	C	40	
	Monochloroacetone (unstabilized)	Forbidden												
	Monochlorosethylene, see Vinyl chloride, inhibited													
	Monoethanolamine, see Ethanolamine, solutions													
	Monoethylamine, see Ethylamine													
	Morpholine	3	UN2054	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A		
	Morpholine, aqueous, mixture, see Corrosive liquids, n.o.s.													
	Motor fuel anti-knock compounds see Motor fuel anti-knock mixtures													
+	Motor fuel anti-knock mixtures	6.1	UN1649	I	POISON, FLAMMABLE LIQUID	14, B9, B12, B60, T26, T39.	None	201	244	Forbidden	30 L	D	25, 40	
	Motor spirit, see Gasoline													
	Muriatic acid, see Hydrochloric acid solution													
	Musk xylene, see 5-tert-Butyl2,4,6-trinitro-m-xylene													
	Naphtha see Petroleum distillate n.o.s													
	Naphthalene, crude or Naphthalene, refined	4.1	UN1334	III	FLAMMABLE SOLID	A1	151	213	240	25 kg	100 kg	A		
	Naphthalene diazonide	Forbidden												
	Naphthalene, molten	4.1	UN2304	III	FLAMMABLE SOLID	A1, T8	151	213	241	Forbidden	Forbidden	C		
	beta-Naphthylamine	6.1	UN1650	II	POISON	T12, T26	None	212	242	25 kg	100 kg	A		
	alpha-Naphthylamine	6.1	UN2077	III	KEEP AWAY FROM FOOD	T7	153	213	240	100 kg	200 kg	A		
	Naphthylamineperchlorate	Forbidden												
	Naphthylthiourea	6.1	UN1651	II	POISON		None	212	242	25 kg	100 kg	A		
	Naphthylurea	6.1	UN1652	II	POISON		None	212	242	25 kg	100 kg	A		

§172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	Packing group	Label(s) required (if not excepted)	Special provisions	(8) Packaging authorizations (§173.***) Exceptions	Non-bulk packaging	Bulk packaging	(9) Quantity limitations Passenger aircraft or railcar	Cargo aircraft only	(10) Vessel stowage requirements Vessel stowage	Other stowage provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Natural gases (with high methane content), see Methane, etc. (UN 1971, UN 1972)												
	Neohexane, see Hexanes												
	Neon, compressed	2.2	UN1065		NONFLAMMABLE GAS		306	302	302	75 kg	150 kg	A	
	Neon, refrigerated liquid (cryogenic liquid)	2.2	UN1913		NONFLAMMABLE GAS		320	318	None	50 kg	500 kg	B	
	New explosive or explosive device, see sections 173.51 and 173.56												
	Nickel carbonyl	6.1	UN1259	I	POISON, FLAMMABLE LIQUID.	1	None	198	None	Forbidden	Forbidden	D	18, 40
	Nickel cyanide	6.1	UN1653	II	POISON	N74, N75	None	212	242	25 kg	100 kg	A	28
	Nickel nitrate	5.1	UN2725	III	OXIDIZER	A1	152	213	240	25 kg	100 kg	A	
	Nickel nitrite	5.1	UN2726	III	OXIDIZER	A1	152	213	240	25 kg	100 kg	A	56, 58
	Nickel picrate	Forbidden											
	Nicotine	6.1	UN1654	II	POISON		None	202	243	5 L	60 L	A	
	Nicotine compounds, liquid, n.o.s., or Nicotine preparations, liquid, n.o.s.	6.1	UN3144	I	POISON	A4, T42	None	201	243	1 L	30 L	B	40
				II	POISON	T14	None	202	243	5 L	60 L	B	40
				III	KEEP AWAY FROM FOOD.	T7	153	203	241	60 L	220 L	B	40
	Nicotine compounds, solid, n.o.s. or Nicotine preparations, solid, n.o.s.	6.1	UN1655	I	POISON		None	211	242	5 kg	50 kg	B	
				II	POISON		None	212	242	25 kg	100 kg	A	
				III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A	
	Nicotine hydrochloride or Nicotine hydrochloride solution	6.1	UN1656	II	POISON		None	202	243	5 L	60 L	A	
	Nicotine salicylate	6.1	UN1657	II	POISON		None	212	242	25 kg	100 kg	A	
	Nicotine sulfate, solid	6.1	UN1658	II	POISON		None	212	242	25 kg	100 kg	A	
	Nicotine sulfate, solution	6.1	UN1659	II	POISON	T14	None	202	243	5 L	60 L	A	
	Nicotine tartrate	6.1	UN1658	II	POISON		None	212	242	25 kg	100 kg	A	
	Nitrated paper (unstable)	Forbidden											
	Nitrates, inorganic, aqueous solution, n.o.s.	5.1	UN3218	II	OXIDIZER	T8	152	202	242	1 L	5 L	B	46
				III	OXIDIZER	T8	152	203	241	2.5 L	30 L	B	46
	Nitrates, inorganic, n.o.s.	5.1	UN1477	II	OXIDIZER		152	212	240	5 kg	25 kg	A	46
				III	OXIDIZER		152	213	240	25 kg	100 kg	A	46
	Nitrites of diazonium compounds	Forbidden											
	Nitrating acid mixtures, spent with more than 50 percent nitric acid	8	UN1826	I	CORROSIVE, OXIDIZER	T12, T27	None	158	243	Forbidden	2.5 L	D	40, 66
	Nitrating acid mixtures spent with not more than 50 percent nitric acid	8	UN1826	II	CORROSIVE	B2, B100, T12, T27.	None	158	242	Forbidden	30 L	D	40
	Nitrating acid mixtures with more than 50 percent nitric acid	8	UN1796	I	CORROSIVE, OXIDIZER	T12, T27	None	158	243	Forbidden	2.5 L	D	40, 66
	Nitrating acid mixtures with not more than 50 percent nitric acid	8	UN1796	II	CORROSIVE	B2, T12, T27	None	158	242	Forbidden	30 L	D	40
	Nitric acid other than red fuming, with more than 70 percent nitric acid	8	UN2031	I	CORROSIVE	B12, B47, B53, T8, T27.	None	158	243	Forbidden	2.5 L	D	44, 66, 89, 90, 110, 111
	Nitric acid other than red fuming, with not more than 70 percent nitric acid	8	UN2031	II	CORROSIVE	B2, B12, B47, B53, T8, T27.	None	158	242	Forbidden	30 L	D	44, 66, 89, 90, 110, 111
	Nitric acid, red fuming	8	UN2032	I	CORROSIVE, OXIDIZER, POISON.	2, B9, B32, B74, T38, T43, T45.	None	227	244	Forbidden	Forbidden	D	40, 66, 74, 89, 90
	Nitric oxide	2.3	UN1660		POISON GAS, OXIDIZER, CORROSIVE.	1, 25, B12, B37, B46, B50, B60, B77.	None	337	None	Forbidden	Forbidden	D	40, 89, 90
	Nitric oxide and dinitrogen tetroxide mixtures or Nitric oxide and nitrogen dioxide mixtures	2.3	UN1975		POISON GAS, OXIDIZER, CORROSIVE.	1, 25, 57, 89, B12, B14, B45, B46, B61, B66, B67, B77.	None	337	None	Forbidden	Forbidden	D	40, 89, 90
	Nitriles, flammable, toxic, n.o.s.	3	UN3275	I	FLAMMABLE LIQUID, POISON.		None	201	243	Forbidden	30 L	E	40, 52
				II	FLAMMABLE LIQUID, POISON.	T14	None	202	243	1 L	60 L	E	40, 52
	Nitriles, toxic, flammable, n.o.s.	6.1	UN3275	I	POISON, FLAMMABLE LIQUID		None	201	243	1 L	30 L	B	40
				II	POISON, FLAMMABLE LIQUID	T14	None	202	243	5 L	60 L	B	40
	Nitriles, toxic, n.o.s.	6.1	UN3276	I	POISON		None	201	243	1 L	30 L	B	
				II	POISON	T14	None	202	243	5 L	60 L	B	
				III	KEEP AWAY FROM FOOD.	T7	153	203	241	60 L	220 L	A	

Nitrites inorganic aqueous solution n o s	5 1	UN3219	II	OXIDIZER	T8	152	202	242	1 L	5 L	B	46, 56 58
Nitrites inorganic n o s	5 1	UN2627	III	OXIDIZER	T8	152	203	241	2 5 L	30 L	B	46 56, 58
3-Nitro-4-chlorobenzotrifluoride	6 1	UN2307	II	OXIDIZER	33	152	212	None	5 kg	25 kg	A	46 56 58
5-Nitro-4-diazotoluene-3-sulfonic acid (dry)	Forbidden		II	POISON	T8	None	202	243	5 L	60 L	A	40
Nitro isobutane triol trinitrate	Forbidden											
N-Nitro-N-methylglycolamide nitrate	Forbidden											
2-Nitro-2-methylpropanol nitrate	Forbidden											
Nitro urea	1 1D	UN0147	II	EXPLOSIVE 1 1D		None	62	None	Forbidden	Forbidden	B	1E, 5E
N-Nitroaniline	Forbidden											
Nitroanilines (o- m-, p-)	6 1	UN1661	II	POISON	T14	None	212	242	25 kg	100 kg	A	
Nitroanisole	6.1	UN2730	III	KEEP AWAY FROM FOOD	T8	153	213	240	100 kg	200 kg	A	
Nitrobenzene	6.1	UN1662	II	POISON	T14	None	202	243	5 L	60 L	A	40
m-Nitrobenzene diazonium perchlorate	Forbidden											
Nitrobenzenesulfonic acid	8	UN2305	II	CORROSIVE		154	202	242	1 L	30 L	A	
Nitrobenzol, see Nitrobenzene												
5-Nitrobenzotriazol	1 1D	UN0385	II	EXPLOSIVE 1 1D		None	62	None	Forbidden	Forbidden	B	1E, 5E 19E
Nitrobenzotrifluorides	6.1	UN2308	II	POISON	T8	None	202	243	5 L	60 L	A	40
Nitrobromobenzenes liquid	6.1	UN2732	III	KEEP AWAY FROM FOOD.	T8, T38	153	203	241	60 L	220 L	A	
Nitrobromobenzenes solid	6.1	UN2732	III	KEEP AWAY FROM FOOD		153	213	240	100 kg	200 kg	A	
Nitrocellulose, dry or wetted with less than 25 percent water (or alcohol), by mass	1.1D	UN0340	II	EXPLOSIVE 1 1D		None	62	None	Forbidden	Forbidden	B	4E 27E
Nitrocellulose membrane filters	4.1	UN3270	II	FLAMMABLE SOLID	43, A1	151	212	240	1 kg	15 kg	D	
Nitrocellulose plasticized with not less than 18 percent plasticizing substance, by mass	1.3C	UN0343	II	EXPLOSIVE 1.3C		None	62	None	Forbidden	Forbidden	B	1E, 5E
Nitrocellulose, solution, flammable with not more than 12 6 percent nitrogen, by mass, and not more than 55 percent nitrocellulose	3	UN2059	II	FLAMMABLE LIQUID	T8, T31	150	202	242	5 L	60 L	B	
			III	FLAMMABLE LIQUID	B1, T7, T30	150	203	242	60 L	220 L	A	
Nitrocellulose, unmodified or plasticized with less than 18 percent plasticizing substance, by mass	1 1D	UN0341	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	4E 27E
Nitrocellulose, wetted with not less than 25 percent alcohol, by mass	1 3C	UN0342	II	EXPLOSIVE 1.3C		None	62	None	Forbidden	Forbidden	B	1E, 5E
Nitrocellulose with alcohol with not less than 25 percent alcohol by mass, and with not more than 12.6 percent nitrogen, by dry mass	4 1	UN2556	II	FLAMMABLE SOLID		151	212	None	1 kg	15 kg	D	28
Nitrocellulose, with not more than 12 6 percent nitrogen, by dry mass, or Nitrocellulose mixture with pigment or Nitrocellulose mixture with plasticizer or Nitrocellulose mixture with pigment and plasticizer	4 1	UN2557	II	FLAMMABLE SOLID	44	181	212	None	1 kg	15 kg	D	28
Nitrocellulose with water with not less than 25 percent water by mass	4.1	UN2555	II	FLAMMABLE SOLID		151	212	None	15 kg	50 kg	E	28
Nitrochlorobenzene see Chloronitrobenzenes etc												
Nitrocresols	6.1	UN2446	III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A	
Nitroethane	3	UN2842	III	FLAMMABLE LIQUID	B1, T8	150	203	242	60 L	220 L	A	
Nitroethyl nitrate	Forbidden											
Nitroethylene polymer	Forbidden											
Nitrogen, compressed	2.2	UN1066		NONFLAMMABLE GAS		308	302	314, 315	75 kg	150 kg	A	
Nitrogen dioxide, liquefied see Dinitrogen tetroxide, liquefied												
Nitrogen fertilizer solution, see Fertilizer ammoniating solution etc.												
Nitrogen mixtures with rare gases see Rare gases and nitrogen mixtures												
Nitrogen peroxide, see Dinitrogen tetroxide, liquefied												
Nitrogen, refrigerated liquid cryogenic liquid	2.2	UN1977		NONFLAMMABLE GAS		320	316	318	50 kg	500 kg	D	
Nitrogen tetroxide and nitric oxide mixtures, see Nitric oxide and nitrogen tetroxide mixtures												
Nitrogen tetroxide, see Dinitrogen tetroxide, liquefied												
Nitrogen trichloride	Forbidden											
D Nitrogen trifluoride	2.2	UN2451		NONFLAMMABLE GAS, OXIDIZER.		None	302	None	Forbidden	25 kg	D	40
I Nitrogen trifluoride	2 3	UN2451		POISON GAS, OXIDIZER.		None	302	None	Forbidden	25 kg	D	40
Nitrogen triiodide	Forbidden											
Nitrogen triiodide monoamine	Forbidden											
Nitrogen trioxide	2 3	UN2421		POISON GAS, OXIDIZER, CORROSIVE	1	None	336	245	Forbidden	Forbidden	D	40, 69, 90
Nitroglycerin desensitized with not less than 40 percent non-volatile water insoluble phlegmatizer by mass	1 1D	UN0143	II	EXPLOSIVE 1 1D, POISON		None	62	None	Forbidden	Forbidden	B	1E 4E, 21E
Nitroglycerin liquid not desensitized	Forbidden											
Nitroglycerin solution in alcohol, with more than 1 percent but not more than 5 percent nitroglycerin	3	UN3064	II	FLAMMABLE LIQUID	N8	None	202	None	Forbidden	5 L	E	
Nitroglycerin, solution in alcohol, with more than 1 percent but not more than 10 percent nitroglycerin	1 1D	UN0144	II	EXPLOSIVE 1 1D		None	62	None	Forbidden	Forbidden	B	1E 5E, 21E
Nitroglycerin solution in alcohol with not more than 1 percent nitroglycerin	3	UN1204	II	FLAMMABLE LIQUID	N34, T25	None	202	None	5 L	60 L	B	
Nitroguanidine nitrate	Forbidden											

§172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	Packing group	Label(s) required (if not excepted)	Special provisions	(8) Packaging authorizations (§173.***) Exceptions	Non-bulk packaging	Bulk packaging	(9) Quantity limitations Passenger aircraft or railcar	Cargo aircraft only	(10) Vessel stowage requirements Vessel stowage	Other stowage provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Nitroguanidine or Picrite, dry or wetted with less than 20 percent water, by mass	1.1D	UN0282	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E
	Nitroguanidine, wetted or Picrite, wetted with not less than 20 percent water, by mass	4.1	UN1336	I	FLAMMABLE SOLID	23, A8, A19, A20, N41	None	211	None	1 kg	15 kg	E	28
	1-Nitrohydantoin	Forbidden											
	Nitrohydrochloric acid	8	UN1798	I	CORROSIVE	A3, B10, N41, T18, T27.	None	201	243	Forbidden	2.5 L	D	40, 66, 74, 89, 90
	Nitromannite (dry)	Forbidden											
	Nitromannite, wetted, see Mannitol hexanitrate, etc.												
	Nitromethane	3	UN1261	II	FLAMMABLE LIQUID	T25	150	202	None	Forbidden	60 L	A	
	Nitromuriatic acid, see Nitrohydrochloric acid												
	Nitronaphthalene	4.1	UN2538	III	FLAMMABLE SOLID	A1	151	213	240	25 kg	100 kg	A	
	Nitrophenols (o-, m-, p-)	6.1	UN1663	III	KEEP AWAY FROM FOOD.	T8, T38	153	213	240	100 kg	200 kg	A	
	m-Nitrophenylnitro methane	Forbidden											
	Nitropropanes	3	UN2608	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	p-Nitrosodimethylaniline	4.2	UN1369	II	SPONTANEOUSLY COMBUSTIBLE.	A19, A20, B101, N34	None	212	241	15 kg	50 kg	D	34
D	Nitroguanidine	1.1A	NA0473	II	EXPLOSIVE 1.1A	111, 117	None	62	None	Forbidden	Forbidden	E	2E, 6E
	Nitrostarch, dry or wetted with less than 20 percent water, by mass	1.1D	UN0146	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E
	Nitrostarch, wetted with not less than 20 percent water, by mass	4.1	UN1337	I	FLAMMABLE SOLID	23, A8, A19, A20, N41.	None	211	None	1 kg	15 kg	D	28
	Nitrosugars (dry)	Forbidden											
	Nitroxyl chloride	2.3	UN1069		POISON GAS, CORROSIVE.	3, B14	None	304	314, 315	Forbidden	Forbidden	D	40
	Nitrosylsulfuric acid	8	UN2308	II	CORROSIVE	A3, A6, A7, B2, N34, T9, T27.	154	202	242	1 L	30 L	D	40, 66, 74, 89, 90
	Nitrotoluenes, liquid o-, m-, p-	6.1	UN1664	II	POISON	T14	None	202	243	5 L	60 L	A	
	Nitrotoluenes, solid m-, or p-	6.1	UN1664	III	POISON	T14	None	212	242	25 kg	100 kg	A	
	Nitrotoluidines (mono)	6.1	UN2660	III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A	
	Nitrotriazolone or NTO	1.1D	UN0490	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E
	Nitrous oxide and carbon dioxide mixtures, see Carbon dioxide and nitrous oxide mixtures												
	Nitrous oxide, compressed	2.2	UN1070		NONFLAMMABLE GAS, OXIDIZER.		306	304	314, 315	75 kg	150 kg	A	40
	Nitrous oxide, refrigerated liquid	2.2	UN2201		NONFLAMMABLE GAS	B6	None	304	314, 315	75 kg	150 kg	B	40
	Nitroxylenes, (o-, m-, p-)	6.1	UN1665	II	POISON	T14	None	202	243	5 L	60 L	A	
	Nitroxyl, see Nitroxylenes												
	Nonanes	3	UN1920	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Nonflammable gas, n o.s., see Compressed or Liquefied gases, etc. (UN 1955, UN 1956)												
	Nonliquefied gases, see Compressed gases, etc.												
	Nonliquefied hydrocarbon gas, see Hydrocarbon gases, compressed, n.o.s.												
	Nonyltrichlorosilane	8	UN1799	II	CORROSIVE	A7, B2, B6, N34, T8, T26.	None	202	242	Forbidden	30 L	C	40
	2,5-Norbornadiene or Dicycloheptadiene	3	UN2251	II	FLAMMABLE LIQUID		150	202	242	5 L	60 L	D	
	Nordhausen acid, see Sulfuric acid, fuming etc.												
	Octadecyltrichlorosilane	8	UN1800	II	CORROSIVE	A7, B2, B6 N34, T8.	None	202	242	Forbidden	30 L	C	40
	Octadiene	3	UN2309	II	FLAMMABLE LIQUID	B1, T1	150	202	242	5 L	60 L	B	
	1,7-Octadine-3,5-diyne-1,8-dimethoxy-9-octadecynoic acid	Forbidden											
	Octafluorobut 2-ene	2.2	UN2422		NONFLAMMABLE GAS		None	304	314, 315	75 kg	150 kg	A	
	Octafluorocyclobutane, RC318	2.2	UN1976		NONFLAMMABLE GAS		None	304	314, 315	75 kg	150 kg	A	
	Octafluoropropane R218	2.2	UN2424		NONFLAMMABLE GAS		None	304	314, 315	75 kg	150 kg	A	
	Octanes	3	UN1262	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
	Octogen, see Cyclotetramethylene tetranitramine, etc.												

Octolite or Octol dry or wetted with less than 15 percent water by mass	1.1D	UN0266	II	EXPLOSIVE 1.1D		None	82	None	Forbidden	Forbidden	B	1E, 5E
Octonal	1.1D	UN0496		EXPLOSIVE 1.1D		None	82	None	Forbidden	Forbidden	[illegible]	1E, 5E
Octyl aldehydes flammable	3	UN1191	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
tert-Octyl mercaptan	6.1	UN3023	II	POISON, FLAMMABLE LIQUID	2, B9, B14, B32, B74, T38, T43, T45	None	227	244	Forbidden	60 L	B	40, 102
Octyltrichlorosilane	8	UN1801	II	CORROSIVE	A7, B2, B6, N34, T8, T28	None	202	242	Forbidden	[illegible]	C	40
Oil gas	2.3	UN1071		POISON GAS, FLAMMABLE GAS	6	None	304	314, 315	Forbidden	150 kg	D	40
Oleum, see Sulfuric acid fuming												
Organic peroxide type A liquid or solid	Forbidden											
Organic peroxide type B, liquid	5.2	UN3101	II	ORGANIC PEROXIDE, EXPLOSIVE	53	152	225	None	Forbidden	Forbidden	D	12, 40
Organic peroxide type B liquid, temperature controlled	5.2	UN3111	II	ORGANIC PEROXIDE, EXPLOSIVE	53	None	225	None	Forbidden	Forbidden	D	2, 40
Organic peroxide type B, solid	5.2	UN3102	II	ORGANIC PEROXIDE, EXPLOSIVE	53	152	225	None	Forbidden	Forbidden	D	12 40
Organic peroxide type B, solid, temperature controlled	5.2	UN3112	II	ORGANIC PEROXIDE, EXPLOSIVE	53	None	225	None	Forbidden	Forbidden	D	2 40
Organic peroxide type C, liquid	5.2	UN3103	II	ORGANIC PEROXIDE		152	225	None	5 L	10 L	D	12, 40
Organic peroxide type C, liquid, temperature controlled	5.2	UN3113	II	ORGANIC PEROXIDE		None	225	None	Forbidden	Forbidden	D	2 40
Organic peroxide type C, solid	5.2	UN3104	II	ORGANIC PEROXIDE		152	225	None	5 kg	10 kg	D	12, 40
Organic peroxide type C, solid, temperature controlled	5.2	UN3114	II	ORGANIC PEROXIDE		None	225	None	Forbidden	Forbidden	D	2, 40
Organic peroxide type D, liquid	5.2	UN3105	II	ORGANIC PEROXIDE		152	225	None	5 L	10 L	D	12 40
Organic peroxide type D, liquid temperature controlled	5.2	UN3115	II	ORGANIC PEROXIDE		None	225	None	Forbidden	Forbidden	D	2, 40
Organic peroxide type D, solid	5.2	UN3106	II	ORGANIC PEROXIDE		152	225	None	5 kg	10 kg	D	12 40
Organic peroxide type D, solid, temperature controlled	5.2	UN3116	II	ORGANIC PEROXIDE		None	225	None	Forbidden	Forbidden	D	2, 40
Organic peroxide type E liquid	5.2	UN3107	II	ORGANIC PEROXIDE		152	225	None	10 L	25 L	D	12 40
Organic peroxide type E liquid, temperature controlled	5.2	UN3117	II	ORGANIC PEROXIDE		None	225	None	Forbidden	Forbidden	D	2 40
Organic peroxide type E solid	5.2	UN3108	II	ORGANIC PEROXIDE		152	225	None	10 kg	25 kg	D	12 40
Organic peroxide type E, solid, temperature controlled	5.2	UN3118	II	ORGANIC PEROXIDE		None	225	None	Forbidden	Forbidden	D	2 40
Organic peroxide type F liquid	5.2	UN3109	II	ORGANIC PEROXIDE		152	225	225	10 L	25 L	D	12 40
Organic peroxide type F, liquid, temperature controlled	5.2	UN3119	II	ORGANIC PEROXIDE		225	225	None	Forbidden	Forbidden	D	2, 40
Organic peroxide type F, solid	5.2	UN3110	II	ORGANIC PEROXIDE	T42	152	225	None	10 kg	25 kg	D	12 40
Organic peroxide type F, solid, temperature controlled	5.2	UN3120	II	ORGANIC PEROXIDE		226	225	None	Forbidden	Forbidden	D	2, 40
D Organic phosphate mixed with compressed gas or Organic phosphate compound, mixed with compressed gas or Organic phosphorus compound, mixed with compressed gas	2.3	NA1955		POISON GAS	3	None	334	None	Forbidden	Forbidden	D	40
Organoarsenic compound, n o.s.	6.1	UN3280	I	POISON		None	211	242	5 kg	50 kg	B	
			II	POISON	T14	None	212	242	25 kg	100 kg	B	
			III	KEEP AWAY FROM FOOD	T7	153	213	240	100 kg	200 kg	A	
Organochlorine pesticides liquid flammable toxic flash point less than 23 degrees C	3	UN2762	I	FLAMMABLE LIQUID, POISON		None	201	243	Forbidden	30 L	B	40
			II	FLAMMABLE LIQUID, POISON		None	202	243	1 L	60 L	B	40
			III	FLAMMABLE LIQUID, KEEP AWAY FROM FOOD	B1	150	203	242	60 L	220 L	A	
Organochlorine pesticides, liquid toxic	6.1	UN2996	I	POISON	T42	None	201	243	1 L	30 L	B	40
			II	POISON	T14	None	202	243	5 L	60 L	B	40
			III	KEEP AWAY FROM FOOD.	T14	153	203	241	60 L	220 L	A	40
Organochlorine pesticides liquid, toxic, flammable, flashpoint not less than 23 degrees C	6.1	UN2995	I	POISON, FLAMMABLE LIQUID.	T42	None	201	243	1 L	30 L	B	40
			II	POISON, FLAMMABLE LIQUID	T14	None	202	243	5 L	60 L	B	40
			III	KEEP AWAY FROM FOOD, FLAMMABLE LIQUID.	B1, T14	153	203	242	60 L	220 L	A	40
Organochlorine pesticides, solid toxic	6.1	UN2761	I	POISON		None	211	242	5 kg	50 kg	A	40
			II	POISON		None	212	242	25 kg	100 kg	A	40
			III	KEEP AWAY FROM FOOD		153	213	240	100 kg	200 kg	A	40
Organometallic compound or Compound solution or Compound dispersion water-reactive, flammable, n o s	4.3	UN3207	I	DANGEROUS WHEN WET, FLAMMABLE LIQUID		None	201	244	Forbidden	1 L	E	40
			II	DANGEROUS WHEN WET, FLAMMABLE LIQUID		None	202	243	1 L	5 L	E	40

§172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	Packing group	Label(s) required (if not excepted)	Special provisions	(8) Packaging authorizations (§173.***) Exceptions	Non-bulk packaging	Bulk packaging	(9) Quantity limitations Passenger aircraft or railcar	Cargo aircraft only	(10) Vessel stowage requirements Vessel stowage	Other stowage provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
				III	DANGEROUS WHEN WET, FLAMMABLE LIQUID.		None	203	242	5 L	60 L	E	40
	Organometallic compound, toxic n o s	6.1	UN3282	I	POISON		None	211	242	5 kg	50 kg	B	
				II	POISON	T14	None	212	242	25 kg	100 kg	B	
				III	KEEP AWAY FROM FOOD	T7	153	213	240	100 kg	200 kg	A	
	Organophosphorus compound, toxic, flammable, n o s.	6.1	UN3279	I	POISON, FLAMMABLE LIQUID.		None	201	243	1 L	30 L	B	40
				II	POISON, FLAMMABLE LIQUID	T14	None	202	243	5 L	60 L	B	40
	Organophosphorus compound, toxic n.o.s.	6.1	UN3278	I	POISON		None	201	243	1 L	30 L	B	
				II	POISON	T14	None	202	243	5 L	60 L	B	
				III	KEEP AWAY FROM FOOD	T7	153	203	241	60 L	220 L	A	
	Organophosphorus pesticides, liquid, flammable, toxic, *flash point less than 23 degrees C*	3	UN2784	I	FLAMMABLE LIQUID, POISON		None	201	243	Forbidden	30 L	B	40
				II	FLAMMABLE LIQUID, POISON		None	202	243	1 L	60 L	B	40
				III	FLAMMABLE LIQUID, KEEP AWAY FROM FOOD	B1	150	203	242	60 L	220 L	A	
	Organophosphorus pesticides, liquid, toxic	6.1	UN3018	I	POISON	N76, T42	None	201	243	1 L	30 L	B	40
				II	POISON	N76, T14	None	202	243	5 L	60 L	B	40
				III	KEEP AWAY FROM FOOD.	N76, T14	153	203	241	60 L	220 L	A	40
	Organophosphorus pesticides, liquid, toxic, flammable *flashpoint not less than 23 degrees C*	6.1	UN3017	I	POISON, FLAMMABLE LIQUID	N76, T42	None	201	243	1 L	30 L	B	40
				II	POISON, FLAMMABLE LIQUID.	N76, T14	None	202	243	5 L	60 L	B	40
				III	KEEP AWAY FROM FOOD, FLAMMABLE LIQUID	B1, N76, T14	153	203	242	60 L	220 L	A	40
	Organophosphorus pesticides, solid, toxic	6.1	UN2783	I	POISON	N77	None	211	242	5 kg	50 kg	A	40
				II	POISON	N77	None	212	242	25 kg	100 kg	A	40
				III	KEEP AWAY FROM FOOD.	N77	153	213	240	100 kg	200 kg	A	40
	Organotin compounds, liquid, n.o.s	6.1	UN2788	I	POISON	A3, N33, N34, T42	None	201	243	1 L	30 L	B	40
				II	POISON	A3, N33, N34, T14	None	202	243	5 L	60 L	A	40
				III	KEEP AWAY FROM FOOD	T14	153	203	241	60 L	220 L	A	40
	Organotin compounds, solid, n.o.s	6.1	UN3146	I	POISON	A5	None	211	242	5 kg	50 kg	B	40
				II	POISON		None	212	242	25 kg	100 kg	A	40
				III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A	40
	Organotin pesticides, liquid, flammable, toxic *flash point less than 23 degrees C*	3	UN2787	I	FLAMMABLE LIQUID, POISON		None	201	243	Forbidden	30 L	B	40
				II	FLAMMABLE LIQUID, POISON,		None	202	243	1 L	60 L	B	40
	Organotin pesticides liquid toxic	6.1	UN3020	I	POISON	T42	None	201	243	1 L	30 L	B	40
				II	POISON	T14	None	202	243	5 L	60 L	B	40
				III	KEEP AWAY FROM FOOD	T14	153	203	241	60 L	220 L	A	40
	Organotin pesticides, liquid, toxic, flammable, *flashpoint not less than 23 degrees C*	6.1	UN3019	I	POISON, FLAMMABLE LIQUID	T42	None	201	243	1 L	30 L	B	40
				II	POISON, FLAMMABLE LIQUID	T14	None	202	243	5 L	60 L	B	40

				III	KEEP AWAY FROM FOOD, FLAMMABLE LIQUID	B1, T14	153	203	242	60 L	220 L	A	40
	Organotin pesticides, solid toxic	6.1	UN2786	I	POISON		None	211	242	5 kg	50 kg	A	40
				II	POISON		None	212	242	25 kg	100 kg	A	40
				III	KEEP AWAY FROM FOOD		153	213	240	100 kg	200 kg	A	40
	Orthonitroaniline see Nitroanilines etc												
	Osmium tetroxide	6.1	UN2471	I	POISON	A8 B100, N33, N34	None	211	242	5 kg	50 kg	B	40
AD	Other regulated substances, liquid, n.o.s	9	NA3082	III	CLASS 9		155	208	241	No limit	No limit	A	
AD	Other regulated substances solid, n.o.s.	9	NA3077	III	CLASS 9	B54	155	213	240	No limit	No limit	A	
	Oxidizing liquid, corrosive n.o.s	5.1	UN3098	I	OXIDIZER, CORROSIVE		None	201	244	Forbidden	2.5 L	D	34, 56, 58, 69 106
				II	OXIDIZER, CORROSIVE		None	202	243	1 L	5 L	B	34, 56, 58, 69 106
				III	OXIDIZER, CORROSIVE		152	203	242	2.5 L	30 L	B	34 56, 58, 69, 106
	Oxidizing liquid, n.o.s.	5.1	UN3139	II	OXIDIZER	A2	152	202	242	1 L	5 L	B	56, 58 69, 106
				III	OXIDIZER	A2	152	203	241	2.5 L	30 L	B	56, 58, 69, 106
	Oxidizing liquid, toxic, n.o.s	5.1	UN3099	I	OXIDIZER, POISON		None	201	244	Forbidden	2.5 L	D	56, 58, 95, 106
				II	OXIDIZER, POISON		None	202	243	1 L	5 L	B	56, 58, 95 106
				III	OXIDIZER, KEEP AWAY FROM FOOD.		152	203	242	2.5 L	30 L	B	56 58 95 106
	Oxidizing solid corrosive, n.o.s	5.1	UN3085	I	OXIDIZER, CORROSIVE		None	211	242	1 kg	15 kg	D	13 34 56 58, 69, 106
				II	OXIDIZER, CORROSIVE		None	212	242	5 kg	25 kg	B	13, 34, 56 58, 69 106
				III	OXIDIZER, CORROSIVE		152	213	240	25 kg	100 kg	B	13, 34, 56 58, 69, 106
	Oxidizing solid flammable, n.o.s.	5.1	UN3137	I	OXIDIZER, FLAMMABLE SOLID.		None	214	214	Forbidden	Forbidden		
	Oxidizing solid, n.o.s.	5.1	UN1479	I	OXIDIZER		None	211	242	1 kg	15 kg	D	56, 58, 69, 106
				II	OXIDIZER		152	212	240	5 kg	25 kg	B	56 58, 69 106
				III	OXIDIZER		152	213	240	25 kg	100 kg	B	56 58 69, 106
	Oxidizing solid, self-heating, n.o.s	5.1	UN3100	II	OXIDIZER, SPONTANEOUSLY COMBUSTIBLE		None	214	214	Forbidden	Forbidden		
	Oxidizing solid, toxic n.o.s	5.1	UN3087	I	OXIDIZER, POISON		None	211	242	1 kg	15 kg	D	56 58 69, 95 106
				II	OXIDIZER, POISON		None	212	242	5 kg	25 kg	B	56 58 69, 95 106
				III	OXIDIZER, KEEP AWAY FROM FOOD.		152	213	240	25 kg	100 kg	B	56 58, 69 95 106
	Oxidizing solid, water-reactive, n.o.s.	5.1	UN3121		OXIDIZER, DANGEROUS WHEN WET		None	214	214	Forbidden	Forbidden		
	Oxygen and carbon dioxide mixtures, see Carbon dioxide and oxygen mixtures												
	Oxygen, compressed	2.2	UN1072		NONFLAMMABLE GAS, OXIDIZER.		306	302	314, 315	75 kg	150 kg	A	
	Oxygen difluoride	2.3	UN2190		POISON GAS, OXIDIZER, CORROSIVE		None	304	None	Forbidden	Forbidden	D	13 40 89 90
	Oxygen, mixtures with rare gases, see Rare gases and oxygen mixtures												
	Oxygen, refrigerated liquid *(cryogenic liquid)*	2.2	UN1073		NONFLAMMABLE GAS, OXIDIZER.		320	316	318	Forbidden	Forbidden	D	
	Paint including paint, lacquer enamel, stain, shellac solutions, varnish, polish liquid filler and liquid lacquer base	3	UN1263	II	FLAMMABLE LIQUID	B52 T7, T30	150	173	242	5 L	60 L	B	
				III	FLAMMABLE LIQUID	B1, B52, T7, T30	150	173	242	60 L	220 L	A	
	Paint or Paint related material	8	UN3066	II	CORROSIVE	B2, N71, T14	154	202	242	1 L	30 L	A	
				III	CORROSIVE	B52, N71, T7	154	203	241	5 L	60 L	A	
	Paint related material including paint thinning, drying, removing, or reducing compound	3	UN1263	II	FLAMMABLE LIQUID	B52, T7, T30	150	173	242	5 L	60 L	B	
				III	FLAMMABLE LIQUID	B1, B52 T7, T30	150	173	242	60 L	220 L	A	
	Paper unsaturated oil treated incompletely dried (including carbon paper)	4.2	UN1379	III	SPONTANEOUSLY COMBUSTIBLE	B101, B106	None	213	241	Forbidden	Forbidden	A	
	Paraformaldehyde	4.1	UN2213	III	FLAMMABLE SOLID	A1	151	213	240	25 kg	100 kg	A	
	Paraldehyde	3	UN1264	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Paranitroaniline solid, see Nitroanilines etc												
D	Parathion	6.1	NA2783	I	POISON	T42	None	201	243	Forbidden	1 L	A	40

§172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols (1)	Hazardous materials descriptions and proper shipping names (2)	Hazard class or Division (3)	Identification Numbers (4)	Packing group (5)	Label(s) required (if not excepted) (6)	Special provisions (7)	(8) Packaging authorizations (§173.***) Exceptions (8A)	Non-bulk packaging (8B)	Bulk packaging (8C)	(9) Quantity limitations Passenger aircraft or railcar (9A)	Cargo aircraft only (9B)	(10) Vessel stowage requirements Vessel stowage (10A)	Other stowage provisions (10B)
	...	...	...	II	POISON	T14	None	202	243	Forbidden	5 L	A	40
D	Parathion and compressed gas mixture	2.3	NA1967		POISON GAS	3	None	334	245	Forbidden	Forbidden	E	40
	Paris green, solid, see Copper acetoarsenite												
A W	PCB, see Polychlorinated biphenyls												
*	Pentaborane	4.2	UN1380	I	SPONTANEOUSLY COMBUSTIBLE, POISON.	1	None	206	245	Forbidden	Forbidden	D	
	Pentachloroethane	6.1	UN1669	II	POISON	T14	None	202	243	5 L	60 L	A	40
	Pentachlorophenol	6.1	UN3155	II	POISON		None	212	242	25 kg	100 kg	A	
	Pentaerythrite tetranitrate (dry)	Forbidden											
	Pentaerythrite tetranitrate or Pentaerythritol tetranitrate or PETN, with not less than 7 percent wax by mass	1.1D	UN0411	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E
D	Pentaerythrite tetranitrate, wetted or Pentaerythritol tetranitrate, wetted, or PETN, wetted with not less than 25 percent water, by mass, or Pentaerythrite tetranitrate, or Pentaerythritol tetranitrate or PETN, desensitized with not less than 15 percent phlegmatizer by mass	1.1D	UN0150	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E
	Pentaerythritol tetranitrate, see Pentaerythrite tetranitrate, etc.												
	Pentafluoroethane	2.2	UN3220		NONFLAMMABLE GAS		306	304	314, 315	75 kg	150 kg	A	
	Pentamethylheptane	3	UN2286	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Pentan-2 4-dione	3	UN2310	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Pentanes	3	UN1265	I	FLAMMABLE LIQUID	T20	150	201	243	1 L	30 L	E	
				II	FLAMMABLE LIQUID	T20	150	202	242	5 L	60 L	E	
	Pentanitroaniline (dry)	Forbidden											
	1 Pentol	8	UN2705	II	CORROSIVE	B2, T8	154	202	242	1 L	30 L	B	38
	Pentolite, dry or wetted with less than 15 percent water, by mass	1.1D	UN0151	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E
	Percarbonates, inorganic, n.o.s	5.1	UN3217	III	OXIDIZER		152	213	240	25 kg	100 kg	A	13
	Perchlorates inorganic aqueous solution, n.o.s.	5.1	UN3211	II	OXIDIZER	T8	152	202	242	1 L	5 L	B	46, 56, 58
	Perchlorates inorganic, n.o.s	5.1	UN1481	II	OXIDIZER		152	212	242	5 kg	25 kg	A	46, 56
				III	OXIDIZER		152	213	240	25 kg	100 kg	A	46, 56
	Perchloric acid with more than 72 percent acid by mass	Forbidden											
	Perchloric acid with more than 50 percent but not more than 72 percent acid, by mass	5.1	UN1873	I	OXIDIZER, CORROSIVE	A2, A3, N41, T9, T27	None	201	243	Forbidden	2.5 L	D	56
	Perchloric acid with not more than 50 percent acid by mass	8	UN1802	II	CORROSIVE, OXIDIZER	N41, T9	None	202	243	Forbidden	30 L	C	56
	Perchloroethylene see Tetrachloroethylene												
	Perchloromethyl mercaptan	6.1	UN1670	I	POISON	2, A3, A7, B9, B14, B32, B74, N34, T38, T43, T46.	None	227	244	Forbidden	Forbidden	D	40
	Perchloryl fluoride	2.3	UN3083		POISON GAS, OXIDIZER.	2, 25, B9, B12, B14	None	302	314, 315	Forbidden	Forbidden	D	40
	Percussion caps see Primers, cap type												
	Perfluoro-2-butene see Octafluorobut 2-ene												
	Perfluoroethyl vinyl ether	2.1	UN3154		FLAMMABLE GAS		306	302, 304, 305	314, 315	Forbidden	150 kg	E	40
	Perfluoromethyl vinyl ether	2.1	UN3153		FLAMMABLE GAS		306	302, 304, 305	314 315	Forbidden	150 kg	E	40
	Perfumery products with flammable solvents	3	UN1266	II	FLAMMABLE LIQUID	T7, T30	150	202	242	15 L	60 L	B	
				III	FLAMMABLE LIQUID	B1, T7, T30	150	203	242	60 L	220 L	A	
	Permanganates, inorganic, aqueous solution, n.o.s	5.1	UN3214	II	OXIDIZER	26 T8	152	202	242	1 L	5 L	D	56, 58, 69, 106, 107
	Permanganates, inorganic, n.o.s.	5.1	UN1482	II	OXIDIZER	26, A30	152	212	242	5 kg	25 kg	D	56, 58 69, 106 107
				III	OXIDIZER	26, A30	152	213	240	25 kg	100 kg	D	56 58 69 106 107
	Peroxides, inorganic, n.o.s	5.1	UN1483	II	OXIDIZER	A7, A20, N34	None	212	242	5 kg	25 kg	A	13, 75 106
				III	OXIDIZER	A7, A20 N34	152	213	240	25 kg	100 kg	A	13 75 106
	Peroxyacetic acid with more than 43 percent and with more than 5 per cent hydrogen peroxide	Forbidden											
	Persulfates inorganic aqueous solution n.o.s	5.1	UN3216	III	OXIDIZER	T2	152	203	241	2.5 L	30 L	A	

Persulfates, inorganic, n o s	5 1	UN3215	III	OXIDIZER		152	213	240	25 kg	100 kg	A		
Pesticides liquid, flammable toxic (flashpoint less than 23 degrees C)	3	UN3021	I	FLAMMABLE LIQUID POISON	B5	None	201	243	Forbidden	30 L	B		
			II	FLAMMABLE LIQUID, POISON		None	202	243	1 L	60 L	B		
			III	FLAMMABLE LIQUID, KEEP AWAY FROM FOOD	B1	150	203	242	60 L	220 L	B		
Pesticides liquid toxic, flammable, n o.s *flashpoint not less than 23 degrees C*	6.1	UN2903	I	POISON, FLAMMABLE LIQUID	T42	None	201	243	1 L	30 L	B	40	
			II	POISON, FLAMMABLE LIQUID.	T14	None	202	243	5 L	60 L	B	40	
			III	KEEP AWAY FROM FOOD, FLAMMABLE LIQUID	B1, T14	153	203	242	60 L	220 L	A	40	
Pesticides, liquid, toxic, n o.s	6.1	UN2902	I	POISON	T42	None	201	243	1 L	30 L	B	40	
			II	POISON	T14	None	202	243	5 L	60 L	B	40	
			III	KEEP AWAY FROM FOOD	T14	153	203	241	60 L	220 L	A	40	
Pesticides solid toxic, n o.s	6.1	UN2588	I	POISON		None	211	242	5 kg	50 kg	A	40	
			II	POISON		None	212	242	25 kg	100 kg	A	40	
			III	KEEP AWAY FROM FOOD		153	213	240	100 kg	200 kg	A	40	
PETN, *see* Pentaerythrite tetranitrate													
PETN/TNT, *see* Pentolite *etc*													
Petrol *see* Gasoline													
Petroleum crude oil	3	UN1267	I	FLAMMABLE LIQUID	T8, T31	None	201	243	1 L	30 L	E		
			II	FLAMMABLE LIQUID	T8, T31	150	202	242	5 L	60 L	B		
Petroleum distillates, n o s or Petroleum products, n o s.	3	UN1268	III	FLAMMABLE LIQUID	B1, T7, T30	150	203	242	60 L	220 L	A		
			I	FLAMMABLE LIQUID	T8 T31	150	201	243	1 L	30 L	E		
			II	FLAMMABLE LIQUID	T8, T31	150	202	242	5 L	60 L	B		
			III	FLAMMABLE LIQUID	B1, T7, T30	150	203	242	60 L	220 L	A		
Petroleum gases, liquefied or Liquefied petroleum gas	2 1	UN1075		FLAMMABLE GAS		308	304	316, 315	Forbidden	150 kg	E	40	
D Petroleum oil	3	NA1270	I	FLAMMABLE LIQUID	T8, T31	None	201	243	1 L	30 L	E		
			II	FLAMMABLE LIQUID	T8, T31	150	202	242	5 L	60 L	B		
			III	FLAMMABLE LIQUID	B1, T7 T30	150	203	242	60 L	220 L	A		
Phenacyl bromide	6 1	UN2645	II	POISON	B106	None	212	242	25 kg	100 kg	B	40	
Phenetidines	6 1	UN2311	III	KEEP AWAY FROM FOOD	T7	153	203	241	60 L	220 L	A		
Phenol molten	6 1	UN2312	II	POISON	B14, B100, T8	None	202	243	Forbidden	Forbidden	B	40	
Phenol, solid	6.1	UN1671	II	POISON	N78, T14	None	212	242	25 kg	100 kg	A		
Phenol solutions	6 1	UN2821	II	POISON	T14	None	202	243	5 L	60 L	A		
			III	KEEP AWAY FROM FOOD	T7	153	203	241	60 L	220 L	A		
Phenolsulfonic acid liquid	8	UN1803	II	CORROSIVE	B2, N41, T8	154	202	242	1 L	30 L	C	14	
Phenoxy pesticides, liquid, flammable, toxic *flash point less than 23 degrees C*	3	UN2766	I	FLAMMABLE LIQUID, POISON		None	201	243	Forbidden	30 L	B	40	
			II	FLAMMABLE LIQUID, POISON		None	202	243	1 L	60 L	B	40	
			III	FLAMMABLE LIQUID, KEEP AWAY FROM FOOD,	B1	150	203	242	60 L	220 L	A		
Phenoxy pesticides, liquid, toxic	6.1	UN3000	I	POISON	T42	None	201	243	1 L	30 L	B	40	
			II	POISON	T14	None	202	243	5 L	60 L	B	40	
			III	KEEP AWAY FROM FOOD	T14	153	200	241	60 L	220 L	A	40	
Phenoxy pesticides, liquid toxic, flammable *flashpoint not less than 23 degrees C*	6.1	UN2999	I	POISON FLAMMABLE LIQUID	T42	None	201	243	1 L	30 L	B	40	
			II	POISON FLAMMABLE LIQUID	T14	None	202	243	5 L	60 L	B	40	
			III	KEEP AWAY FROM FOOD, FLAMMABLE LIQUID	B1, T14	153	203	242	60 L	220 L	A	40	
Phenoxy pesticides solid toxic	6.1	UN2765	I	POISON		None	211	242	5 kg	50 kg	A	40	
			II	POISON		None	212	242	25 kg	100 kg	A	40	
			III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A	40	
Phenyl chloroformate	6 1	UN2746	II	POISON, CORROSIVE	T12	None	202	243	1 L	30 L	A	12, 13 21 25 40 100	

§172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols (1)	Hazardous materials descriptions and proper shipping names (2)	Hazard class or Division (3)	Identification Numbers (4)	Packing group (5)	Label(s) required (if not excepted) (6)	Special provisions (7)	(8) Packaging authorizations (§173.***) Exceptions (8A)	Non-bulk packaging (8B)	Bulk packaging (8C)	(9) Quantity limitations Passenger aircraft or railcar (9A)	Cargo aircraft only (9B)	(10) Vessel stowage requirements Vessel stowage (10A)	Other stowage provisions (10B)
	Phenyl isocyanate	6.1	UN2487	II	POISON	2, A3, B9, B14, B32, B74, B77, N33, N34, T38, T43, T45.	None	227	244	5 L	60 L	D	40
	Phenyl mercaptan	6.1	UN2337	I	POISON, FLAMMABLE LIQUID.	2, B9, B14, B32, B74, B77, T38, T43, T45.	None	227	244	Forbidden	Forbidden	B	26, 40
	Phenyl phosphorus dichloride	8	UN2798	II	CORROSIVE	B2, B15, T8, T26	154	202	242	Forbidden	30 L	B	40
	Phenyl phosphorus thiodichloride	8	UN2799	II	CORROSIVE	B2, B15, T8, T26	154	202	242	Forbidden	30 L	B	40
	Phenyl urea pesticides, liquid, flammable, toxic, *flash point less than 23 degrees C*	3	UN2768	I	FLAMMABLE LIQUID, POISON.		None	201	243	Forbidden	30 L	B	40
				II	FLAMMABLE LIQUID, POISON.		None	202	243	1 L	60 L	B	40
				III	FLAMMABLE LIQUID, KEEP AWAY FROM FOOD	B1	150	203	242	60 L	220 L	A	
	Phenyl urea pesticides, liquid, toxic	6.1	UN3002	I	POISON	T42	None	201	243	1 L	30 L	B	40
				II	POISON	T14	None	202	243	5 L	60 L	B	40
				III	KEEP AWAY FROM FOOD.	T14	153	203	241	60 L	220 L	A	40
	Phenyl urea pesticides, liquid toxic, flammable, *flash point not less than 23 degrees C*	6.1	UN3001	I	POISON, FLAMMABLE LIQUID.	T42	None	201	243	1 L	30 L	B	40
				II	POISON, FLAMMABLE LIQUID.	T14	None	202	243	5 L	60 L	B	40
				III	KEEP AWAY FROM FOOD, FLAMMABLE LIQUID.	B1, T14	153	203	242	60 L	220 L	A	40
	Phenyl urea pesticides, solid, toxic	6.1	UN2767	I	POISON		None	211	242	5 kg	50 kg	A	40
				II	POISON		None	212	242	25 kg	100 kg	A	40
				III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A	40
	Phenylacetonitrile, liquid	6.1	UN2470	III	KEEP AWAY FROM FOOD.	T8	153	203	241	60 L	220 L	A	26
	Phenylacetyl chloride	8	UN2577	II	CORROSIVE	B2, T8, T26	154	202	242	1 L	30 L	C	40
	Phenylcarbylamine chloride	6.1	UN1672	I	POISON	2, B9, B14, B32, B74, T38, T43, T45.	None	227	244	Forbidden	Forbidden	D	40
	m-Phenylene diamine diperchlorate (dry)	Forbidden											
	Phenylenediamines (*o-; m-, p-*)	6.1	UN1673	III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A	
	Phenylhydrazine	6.1	UN2572	II	POISON	T8	None	202	242	5 L	60 L	A	40
	Phenylmercuric acetate	6.1	UN1674	II	POISON		None	212	242	25 kg	100 kg	A	
	Phenylmercuric compounds, n.o.s	6.1	UN2026	I	POISON		None	211	242	5 kg	50 kg	A	
				II	POISON		None	212	242	25 kg	100 kg	A	
				III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A	
	Phenylmercuric hydroxide	6.1	UN1894	II	POISON		None	212	242	25 kg	100 kg	A	
	Phenylmercuric nitrate	6.1	UN1895	II	POISON		None	212	242	25 kg	100 kg	A	
	Phenyltrichlorosilane	8	UN1804	II	CORROSIVE	A7, B6, N34, T8	None	202	242	Forbidden	30 L	C	40
	Phosgene	2.3	UN1076		POISON GAS, CORROSIVE	1, B7, B46	None	192	314	Forbidden	Forbidden	D	40
	9-Phosphabicyclononanes *or* Cyclooctadiene phosphines	4.2	UN2940	II	SPONTANEOUSLY COMBUSTIBLE	A19	None	212	241	15 kg	50 kg	A	
	Phosphine	2.3	UN2199		POISON GAS, FLAMMABLE GAS.	1	None	192	245	Forbidden	Forbidden	D	40
	Phosphoric acid	8	UN1805	III	CORROSIVE	A7, N34, T7	154	203	241	5 L	60 L	A	
	Phosphoric acid triethylenemimine, see Tris-(1-aziridiyl)phosphine oxide solution												
	Phosphoric anhydride, see Phosphorus pentoxide												
	Phosphorous acid	8	UN2834	III	CORROSIVE	T7	154	213	240	25 kg	100 kg	A	

Phosphorus, amorphous	4.1	UN1338	III	FLAMMABLE SOLID	A1, A19, B1, B9, B12, B26	None	213	243	25 kg	100 kg	A	74
Phosphorus bromide, see Phosphorus tribromide												
Phosphorus chloride, see Phosphorus trichloride												
Phosphorus heptasulfide, *free from yellow or white phosphorus*	4.1	UN1339	II	FLAMMABLE SOLID	A20, N34	None	212	240	15 kg	50 kg	B	74
Phosphorus oxybromide	8	UN1939	II	CORROSIVE	B8, B106, N41, N43	None	212	240	Forbidden	50 kg	C	12, 40
Phosphorus oxybromide, molten	8	UN2576	II	CORROSIVE	B2, B6, N41, N43, T8, T27	None	202	242	Forbidden	Forbidden	C	40
Phosphorus oxychloride	6	UN1810	II	CORROSIVE, POISON	2, A7, B9, B14, B32, B74, B77, N34, T38, T43, T45.	None	227	244	Forbidden	30 L	C	40
Phosphorus pentabromide	8	UN2691	II	CORROSIVE	A7, B106, N34	154	212	240	Forbidden	50 kg	B	12 40
Phosphorus pentachloride	8	UN1806	II	CORROSIVE	A7, B106, N34	None	212	240	Forbidden	50 kg	C	40
Phosphorus pentafluoride	2.3	UN2198		POISON GAS, CORROSIVE	1	None	302	None	Forbidden	Forbidden	D	40
Phosphorus pentasulfide, *free from yellow or white phosphorus*	4.3	UN1340	II	DANGEROUS WHEN WET, FLAMMABLE SOLID	A20, B59, B101	None	212	242	15 kg	50 kg	B	74
Phosphorus pentoxide	8	UN1807	II	CORROSIVE	A7, N34	154	212	240	15 kg	50 kg	A	
Phosphorus sesquisulfide, *free from yellow or white phosphorus*	4.1	UN1341	II	FLAMMABLE SOLID	A20, N34	None	212	240	15 kg	50 kg	B	74
Phosphorus tribromide	8	UN1809	II	CORROSIVE	A3, A8, A7, B2, B28, N34, N43, T8.	None	202	242	Forbidden	30 L	C	40
Phosphorus trichloride	6	UN1809	I	CORROSIVE, POISON	2, A3, A7, B9, B14, B16, B32, B74, B77, N34, T38, T43, T45.	None	227	244	Forbidden	2.5 L	C	40
Phosphorus trioxide	8	UN2578	III	CORROSIVE		154	213	240	25 kg	100 kg	A	12
Phosphorus trisulfide, *free from yellow or white phosphorus*	4.1	UN1343	II	FLAMMABLE SOLID	A20, N34	None	212	240	15 kg	50 kg	B	74
Phosphorus, white dry or Phosphorus, white, under water or Phosphorus white, in solution or Phosphorus, yellow dry or Phosphorus, yellow, under water or Phosphorus, yellow, in solution	4.2	UN1381	I	SPONTANEOUSLY COMBUSTIBLE, POISON.	B9, B12, B26, N34, T15, T26, T33.	None	188	243	Forbidden	Forbidden	E	
Phosphorus white, molten	4.2	UN2447	I	SPONTANEOUSLY COMBUSTIBLE, POISON.	B9, B12, B26, N34, T15, T26, T29	None	188	243	Forbidden	Forbidden	D	
Phosphorus (white or red) and a chlorate, mixtures of	Forbidden											
Phosphoryl chloride, see Phosphorus oxychloride												
Phthalic anhydride *with more than .05 percent maleic anhydride*	8	UN2214	III	CORROSIVE	T7	154	213	240	25 kg	100 kg	A	
Phthalimide derivative pesticides, liquid, flammable, toxic, *flash point less than 23 degrees C*	3	UN2774	I	FLAMMABLE LIQUID, POISON		None	201	243	Forbidden	30 L	B	40
			II	FLAMMABLE LIQUID, POISON.		None	202	243	1 L	60 L	B	40
			III	FLAMMABLE LIQUID, KEEP AWAY FROM FOOD.	B1	150	203	242	60 L	220 L	A	
Phthalimide derivative pesticides, liquid, toxic	6.1	UN3008	I	POISON	T42	None	201	243	1 L	30 L	B	40
			II	POISON	T14	None	202	243	5 L	60 L	B	40
			III	KEEP AWAY FROM FOOD	T14	153	203	241	60 L	220 L	A	40
Phthalimide derivative pesticides, liquid, toxic, flammable *flashpoint not less than 23 degrees C*	6.1	UN3007	I	POISON, FLAMMABLE LIQUID.	T42	None	201	243	1 L	30 L	B	40
			II	POISON, FLAMMABLE LIQUID.	T14	None	202	243	5 L	60 L	B	40
			III	KEEP AWAY FROM FOOD, FLAMMABLE LIQUID	T14	153	203	242	60 L	220 L	A	40
Phthalimide derivative pesticides solid, toxic	6.1	UN2773	I	POISON		None	211	242	5 kg	50 kg	A	40
			II	POISON		None	212	242	25 kg	100 kg	A	40
			III	KEEP AWAY FROM FOOD		153	213	240	100 kg	200 kg	A	40
Picolines	3	UN2313	III	FLAMMABLE LIQUID	B1, T8	150	203	242	60 L	220 L	A	40
Picric acid, *see* Trinitrophenol, *etc.*												
Picric acid *wet with not less than 10 percent water*	4.1	NA1344	I	FLAMMABLE SOLID	A19, A20, N41	None	211	None	Forbidden	Forbidden	D	
Picrite, *see* Nitroguanidine, *etc.*												
Picryl chloride, *see* Trinitrochlorobenzene												
Pine oil	3	UN1272	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
alpha-Pinene	3	UN2368	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
Piperazine	8	UN2679	III	CORROSIVE	T7	154	213	240	25 kg	100 kg	A	12
Piperidine	3	UN2401	II	FLAMMABLE LIQUID, CORROSIVE	T2	None	202	243	1 L	5 L	B	

§172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols (1)	Hazardous materials descriptions and proper shipping names (2)	Hazard class or Division (3)	Identification Numbers (4)	Packing group (5)	Label(s) required (if not excepted) (6)	Special provisions (7)	(8) Packaging authorizations (§173.***) Exceptions (8A)	Non-bulk packaging (8B)	Bulk packaging (8C)	(9) Quantity limitations Passenger aircraft or railcar (9A)	Cargo aircraft only (9B)	(10) Vessel stowage requirements Vessel stowage (10A)	Other stowage provisions (10B)
	Pivaloyl chloride, see Trimethylacetyl chloride												
A	Plastic molding material *in dough, sheet or extruded rope form*	9		III	CLASS 9		155	213	None	100 kg	200 kg	A	
	Plastic solvent, n.o.s., see Flammable liquids, n.o.s.												
	Plastics, nitrocellulose-based, self-heating, n.o.s.	4.2	UN2006	III	SPONTANEOUSLY COMBUSTIBLE.		None	213	None	Forbidden	Forbidden	C	
	Poisonous gases, n.o.s. see Compressed or liquefied gases, flammable or toxic, n.o.s.												
	Polyalkylamines, n.o.s., *see* Amines, etc.												
AW	Polychlorinated biphenyls	9	UN2315	II	CLASS 9	9, 81	155	202	241	100 L	220 L	A	34
	Polyester resin kit	3	UN3269		FLAMMABLE LIQUID	40	None	225	None	5 kg	5 kg	B	
	Polyhalogenated biphenyls, liquid or Polyhalogenated terphenyls liquid	9	UN3151	II	CLASS 9		155	204	241	100 L	220 L	A	34
	Polyhalogenated biphenyls, solid or Polyhalogenated terphenyls, solid	9	UN3152	II	CLASS 9		155	204	241	100 kg	200 kg	A	34
	Polymeric beads, expandable, *evolving flammable vapor*	9	UN2211	III	None	32	155	221	240	100 kg	200 kg	A	85, 87
	Potassium	4.3	UN2257	I	DANGEROUS WHEN WET	A19, A20, B27, S100, N6, N34, T18, T26	None	211	244	1 kg	15 kg	D	
	Potassium arsenate	6.1	UN1677	II	POISON		None	212	242	25 kg	100 kg	A	
	Potassium arsenite	6.1	UN1678	II	POISON		None	212	242	25 kg	100 kg	A	
	Potassium bisulfite solution, *see* Bisulfites, inorganic, aqueous solutions, n.o.s.												
	Potassium borohydride	4.3	UN1870	I	DANGEROUS WHEN WET.	A19, N40	None	211	242	Forbidden	15 kg	E	
	Potassium bromate	5.1	UN1484	II	OXIDIZER		152	212	242	5 kg	25 kg	A	56, 58, 106
	Potassium carbonyl	Forbidden											
	Potassium chlorate	5.1	UN1485	II	OXIDIZER	A9, N34	152	212	242	5 kg	25 kg	A	56, 58, 106
	Potassium chlorate, aqueous solution	5.1	UN2427	II	OXIDIZER	A2, T8	152	202	241	1 L	5 L	B	56, 58 106
	Potassium chlorate mixed with mineral oil, see Explosive, blasting, type C												
	Potassium cuprocyanide	5.1	UN1679	II	POISON		None	212	242	25 kg	100 kg	A	26
	Potassium cyanide	6.1	UN1680	I	POISON	B69, B77, N74, N75, T18, T26.	None	211	242	5 kg	50 kg	B	52
	Potassium dichloro isocyanurate or Potassium dichloro-s-triazinetrione, see Dichloroisocyanuric acid, dry or Dichloroisocyanuric acid salts etc.												
	Potassium dithionite *or* Potassium hydrosulfite	4.2	UN1929	II	SPONTANEOUSLY COMBUSTIBLE.	A8, A19, A20	None	212	241	15 kg	50 kg	E	13
	Potassium fluoride	6.1	UN1812	III	KEEP AWAY FROM FOOD.	T8	153	213	240	100 kg	200 kg	A	26
	Potassium fluoroacetate	6.1	UN2628	I	POISON		None	211	242	5 kg	50 kg	E	
	Potassium fluorosilicate	6.1	UN2655	III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A	26
	Potassium hydrate, see Potassium hydroxide, solid												
	Potassium hydrogen fluoride, see Potassium hydrogen difluoride												
	Potassium hydrogen fluoride solution, see Corrosive liquid, n.o.s.												
	Potassium hydrogen sulfate	8	UN2509	II	CORROSIVE	A7, N34	154	212	240	15 kg	50 kg	A	
	Potassium hydrogendifluoride, *solid*	8	UN1811	II	CORROSIVE, POISON	B108, N3, N34, T8	154	212	240	15 kg	50 kg	A	26, 26, 40
	Potassium hydrogendifluoride, *solution*	8	UN1811	II	CORROSIVE, POISON	N3, N34, T8	154	202	243	1 L	30 L	A	26, 40, 95
	Potassium hydrosulfite, *see* Potassium dithionite												
	Potassium hydroxide, liquid, see Potassium hydroxide solution												
	Potassium hydroxide, solid	8	UN1813	II	CORROSIVE		154	212	240	15 kg	50 kg	A	
	Potassium hydroxide, solution	8	UN1814	II	CORROSIVE	B2, T8	154	202	242	1 L	30 L	A	
				III	CORROSIVE	T7	154	203	244	5 L	60 L	A	
	Potassium hypochlorite, solution see Hypochlorite solutions, etc.												
	Potassium, metal alloys	4.3	UN1420	I	DANGEROUS WHEN WET	A19, A20, B27	None	211	244	1 kg	15 kg	D	
	Potassium metal, liquid alloy, see Alkali metal alloys, liquid												
	Potassium metavanadate	6.1	UN2864	II	POISON		None	212	242	25 kg	100 kg	A	
	Potassium monoxide	8	UN2033	II	CORROSIVE		154	212	240	15 kg	50 kg	A	
	Potassium nitrate	5.1	UN1486	III	OXIDIZER	A1, A29	152	213	240	25 kg	100 kg	A	
	Potassium nitrate and sodium nitrite mixtures	5.1	UN1487	II	OXIDIZER	B12, B78	152	212	240	5 kg	25 kg	A	56, 58
	Potassium nitrite	5.1	UN1488	II	OXIDIZER		152	212	242	5 kg	25 kg	A	56, 58
	Potassium perchlorate, solid	5.1	UN1489	II	OXIDIZER		152	212	242	5 kg	25 kg	A	56, 58 106
	Potassium perchlorate solution	5.1	UN1489	II	OXIDIZER		152	202	242	1 L	5 L	A	56, 58, 106
	Potassium permanganate	5.1	UN1490	II	OXIDIZER	B12	152	212	240	5 kg	25 kg	D	56, 58, 69, 106 107

Potassium peroxide	5.1	UN1491	I	OXIDIZER	A20, N34	None	211	None	Forbidden	15 kg	B	13 75 106
Potassium persulfate	5.1	UN1492	III	OXIDIZER	A1, A29	152	213	240	25 kg	100 kg	A	
Potassium phosphide	4.3	UN2012	I	DANGEROUS WHEN WET POISON.	A19, N40	None	211	None	Forbidden	15 kg	E	40 85
Potassium salts of aromatic nitro-derivatives *explosive*	1.3C	UN0158	II	EXPLOSIVE 1.3C		None	62	None	Forbidden	Forbidden	B	1E 5E
Potassium selenate, *see* Selenates *or* Selenites												
Potassium selenite, *see* Selenates *or* Selenites												
Potassium sodium alloys	4.3	UN1422	I	DANGEROUS WHEN WET	A19 B27, N34, N40, T15, T26.	None	211	244	Forbidden	15 kg	D	
Potassium sulfide, anhydrous *or* Potassium sulfide *with less than 30 per cent water of crystallization*	4.2	UN1382	II	SPONTANEOUSLY COMBUSTIBLE	A19, A20, B16, B108, N34.	None	212	241	15 kg	50 kg	A	
Potassium sulfide, hydrated *with not less than 30 percent water of crystallization*	8	UN1847	II	CORROSIVE		154	212	240	15 kg	50 kg	A	26
Potassium superoxide	5.1	UN2466	I	OXIDIZER	A20	None	211	None	Forbidden	15 kg	B	13, 75, 106
Powder cake, wetted *or* Powder paste, wetted *with not less than 17 percent alcohol by mass*	1.1C	UN0433	II	EXPLOSIVE 1.1C		None	62	None	Forbidden	Forbidden	B	1E, 5E
Powder cake wetted *or* Powder paste, wetted *with not less than 25 percent water by mass*	1.3C	UN0159	II	EXPLOSIVE 1.3C		None	62	None	Forbidden	Forbidden	B	1E, 5E
Powder paste, *see* Powder cake, *etc.*												
Powder, smokeless	1.1C	UN0160	II	EXPLOSIVE 1.1C		None	62	None	Forbidden	Forbidden	B	10E 26E
Powder, smokeless	1.3C	UN0161	II	EXPLOSIVE 1.3C		None	62	None	Forbidden	Forbidden	B	10E, 26E
Power device, explosive, see Cartridges, power device												
Primers, cap type	1.4S	UN0044	II	None		None	62	None	25 kg	100 kg	A	
Primers, cap type	1.1B	UN0377	II	EXPLOSIVE 1.1B		None	62	None	Forbidden	Forbidden	B	2E, 6E
Primers, cap type	1.4B	UN0378	II	EXPLOSIVE 1.4B		None	62	None	Forbidden	75 kg	A	24E
Primers, small arms, see Primers, cap type												
Primers, tubular	1.3G	UN0319	II	EXPLOSIVE 1.3G		None	62	None	Forbidden	Forbidden	B	
Primers, tubular	1.4G	UN0320	II	EXPLOSIVE 1.4G		None	62	None	Forbidden	75 kg	A	24E
Primers, tubular	1.4S	UN0376	II	None		None	62	None	25 kg	100 kg	A	
Printing ink, *flammable*	3	UN1210	I	FLAMMABLE LIQUID	T8, T31	150	173	243	1 L	30 L	E	
			II	FLAMMABLE LIQUID	T7, T30	150	173	242	5 L	60 L	B	
			III	FLAMMABLE LIQUID	B1, T7, T30	150	173	242	60 L	220 L	A	
Projectiles, illuminating, see Ammunition, illuminating, *etc.*												
Projectiles, *inert with tracer*	1.4S	UN0345	II	EXPLOSIVE 1.4S			62	None	25 kg	100 kg	A	3E, 7E, 9E
Projectiles *inert, with tracer*	1.3G	UN0424	II	EXPLOSIVE 1.3G			62	None	Forbidden	Forbidden	B	3E 7E
Projectiles, *inert, with tracer*	1.4G	UN0425	II	EXPLOSIVE 1.4G			62	None	Forbidden	75 kg	A	3E, 7E 24E
Projectiles *with burster or expelling charge*	1.2D	UN0346	II	EXPLOSIVE 1.2D			62	None	Forbidden	Forbidden	B	3E, 7E
Projectiles, *with burster or expelling charge*	1.4D	UN0347	II	EXPLOSIVE 1.4D			62	None	Forbidden	75 kg	A	3E, 7E 24E
Projectiles, *with burster or expelling charge*	1.2F	UN0426	II	EXPLOSIVE 1.2F			62	None	Forbidden	Forbidden	E	
Projectiles, *with burster or expelling charge*	1.4F	UN0427	II	EXPLOSIVE 1.4F			62	None	Forbidden	Forbidden	E	
Projectiles, *with burster or expelling charge*	1.2G	UN0434	II	EXPLOSIVE 1.2G			62	None	Forbidden	Forbidden	B	3E, 7E
Projectiles, *with burster or expelling charge*	1.4G	UN0435	II	EXPLOSIVE 1.4G			62	None	Forbidden	75 kg	A	3E, 7E, 24E
Projectiles *with bursting charge*	1.1F	UN0167	II	EXPLOSIVE 1.1F			62	None	Forbidden	Forbidden	E	
Projectiles, *with bursting charge*	1.1D	UN0168	II	EXPLOSIVE 1.1D			62	None	Forbidden	Forbidden	B	3E, 7E
Projectiles, *with bursting charge*	1.2D	UN0169	II	EXPLOSIVE 1.2D			62	None	Forbidden	Forbidden	B	3E 7E
Projectiles, *with bursting charge*	1.2F	UN0324	II	EXPLOSIVE 1.2F			62	None	Forbidden	Forbidden	E	
Projectiles, *with bursting charge*	1.4D	UN0344	II	EXPLOSIVE 1.4D			62	None	Forbidden	75 kg	A	3E, 7E, 24E
Propadiene, inhibited	2.1	UN2200		FLAMMABLE GAS		None	304	314, 315	Forbidden	150 kg	B	40
Propadiene mixed with methyl acetylene, see Methyl acetylene and propadiene mixtures, stabilized												
Propane *or* Propane mixtures *see also* Petroleum gases, liquefied	2.1	UN1978		FLAMMABLE GAS	19	306	304	314, 315	Forbidden	150 kg	E	40
Propanethiols	3	UN2402	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	E	95, 102
n-Propanol *or* Propyl alcohol, normal	3	UN1274	II	FLAMMABLE LIQUID	B1, T1	150	202	242	5 L	60 L	B	
			III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
D Propargyl alcohol	3	NA1986	II	FLAMMABLE LIQUID, POISON		None	202	243	Forbidden	1 L	B	40
D Propellant explosive, liquid	1.1C	NA0474	II	EXPLOSIVE 1.1C		None	62	None	Forbidden	Forbidden	B	1E, 5E
D Propellant explosive, liquid	1.3C	NA0477	II	EXPLOSIVE 1.3C		None	62	None	Forbidden	Forbidden	B	1E, 5E
Propellant, liquid	1.3C	UN0495		EXPLOSIVE 1.3C	37	None	62	None	Forbidden	Forbidden	B	
Propellant liquid	1.1C	UN0497		EXPLOSIVE 1.1C	37	None	62	None	Forbidden	Forbidden	B	
Propellant solid	1.1C	UN0498		EXPLOSIVE 1.1C		None	62	None	Forbidden	Forbidden	A	
Propellant, solid	1.3C	UN0499		EXPLOSIVE 1.3C		None	62	None	Forbidden	Forbidden	A	
Propionaldehyde	3	UN1275	II	FLAMMABLE LIQUID	T14	150	202	242	5 L	60 L	E	
Propionic acid	8	UN1848	III	CORROSIVE	T7	154	203	241	5 L	60 L	A	
Propionic anhydride	8	UN2496	III	CORROSIVE	T2	154	203	241	5 L	60 L	A	
Propionitrile	3	UN2404	II	FLAMMABLE LIQUID, POISON	T14	None	202	243	Forbidden	60 L	E	40
Propionyl chloride	3	UN1815	II	FLAMMABLE LIQUID, CORROSIVE	B100, T8 T26	None	202	243	1 L	5 L	B	40
n-Propyl acetate	3	UN1276	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
Propyl alcohol *see* Propanol												
n-Propyl benzene	3	UN2364	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	

§172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols (1)	Hazardous materials descriptions and proper shipping names (2)	Hazard class or Division (3)	Identification Numbers (4)	Packing group (5)	Label(s) required (if not excepted) (6)	Special provisions (7)	(8) Packaging authorizations (§173.***) Exceptions (8A)	Non-bulk packaging (8B)	Bulk packaging (8C)	(9) Quantity limitations Passenger aircraft or railcar (9A)	Cargo aircraft only (9B)	(10) Vessel stowage requirements Vessel stowage (10A)	Other stowage provisions (10B)
	Propyl chloride	3	UN1278	II	FLAMMABLE LIQUID	N34, T14	None	202	242	Forbidden	60 L	E	
	n-Propyl chloroformate	6.1	UN2740	I	POISON, FLAMMABLE LIQUID, CORROSIVE.	2, A3, A6, A7, B9, B14, B32, B74, B77, N34, T38, T43, T45.	None	227	244	Forbidden	2.5 L	B	21, 40, 100
	Propyl formates	3	UN1281	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	B	
	n-Propyl isocyanate	6.1	UN2482	I	POISON, FLAMMABLE LIQUID	1, A7, B9, B14, B30, B72, T38, T43, T44.	None	226	244	Forbidden	Forbidden	D	40
	Propyl mercaptan see Propanethiols												
	n-Propyl nitrate	3	UN1865	II	FLAMMABLE LIQUID	T25	150	202	None	5 L	60 L	D	
	Propylamine	3	UN1277	II	FLAMMABLE LIQUID, CORROSIVE.	N34, T14	None	202	243	1 L	5 L	E	40
	Propylene *see also* Petroleum gases, liquefied	2.1	UN1077		FLAMMABLE GAS	19	306	304	314, 315	Forbidden	150 kg	E	40
	Propylene chlorohydrin	6.1	UN2611	II	POISON	T9	None	202	243	5 L	60 L	A	12, 40, 48
	Propylene dichloride	3	UN1279	II	FLAMMABLE LIQUID	N36, T1	150	202	242	5 L	60 L	B	
	Propylene oxide	3	UN1280	I	FLAMMABLE LIQUID	A3, N34, T20, T29	None	201	243	1 L	30 L	E	40
	Propylene tetramer	3	UN2850	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	1,2-Propylenediamine	8	UN2258	II	CORROSIVE, FLAMMABLE LIQUID	A3, A6, N34, T8	None	202	243	1 L	30 L	A	40
	Propyleneimine, inhibited	3	UN1921	I	FLAMMABLE LIQUID	A3, N34, T25	None	201	243	1 L	30 L	B	40
	Propyltrichlorosilane	8	UN1816	II	CORROSIVE, FLAMMABLE LIQUID	A7, B2, B6, N34, T8, T26.	None	202	243	Forbidden	30 L	C	40
	Prussic acid, see Hydrogen cyanide												
	Pyridine	3	UN1282	II	FLAMMABLE LIQUID	T8	None	202	242	5 L	60 L	B	21, 100
	Pyridine perchlorate	Forbidden											
	Pyrophoric liquid inorganic, n.o.s.	4.2	UN3194	I	SPONTANEOUSLY COMBUSTIBLE		None	161	244	Forbidden	Forbidden	D	18
	Pyrophoric liquids, organic, n.o.s.	4.2	UN2845	I	SPONTANEOUSLY COMBUSTIBLE	B11, T42	None	161	244	Forbidden	Forbidden	D	18
	Pyrophoric metals, n.o.s., or Pyrophoric alloys, n.o.s.	4.2	UN1383	I	SPONTANEOUSLY COMBUSTIBLE.	B11	None	187	242	Forbidden	Forbidden	D	
	Pyrophoric organometallic compound n.o.s.	4.2	UN3203	I	SPONTANEOUSLY COMBUSTIBLE		None	187	242	Forbidden	Forbidden	D	
	Pyrophoric solid inorganic, n.o.s.	4.2	UN3200	I	SPONTANEOUSLY COMBUSTIBLE.		None	187	242	Forbidden	Forbidden	D	
	Pyrophoric solids, organic, n.o.s.	4.2	UN2846	I	SPONTANEOUSLY COMBUSTIBLE.		None	187	242	Forbidden	Forbidden	D	
	Pyrosulfuryl chloride	8	UN1817	II	CORROSIVE	B2, T9, T27	154	202	242	1 L	30 L	C	40
	Pyroxylin solution or solvent, see Nitrocellulose												
	Pyrrolidine	3	UN1922	II	FLAMMABLE LIQUID, CORROSIVE.	T1	None	202	243	1 L	5 L	B	40
	Quebrachitol pentanitrate	Forbidden											
	Quicklime, see Calcium oxide												
	Quinoline	6.1	UN2656	III	KEEP AWAY FROM FOOD.	T8	153	203	241	60 L	220 L	A	12
	R 114, see Dichlorotetrafluoroethane												
	R 115, see Chloropentafluoroethane												
	R 116, see Hexafluoroethane												
	R 124, see Chlorotetrafluoroethane												
	R 133a, see Chlorotrifluoroethane												
	R 152a, see Difluoroethane												
	R 500, see Dichlorodifluoromethane and difluoroethane, *etc*												
	R 502 see Chlorodifluoromethane and chloropentafluoroethane mixture *etc.*												
	R 503 see Chlorotrifluoromethane and trifluoromethane, *etc.*												
	R 12 see Dichlorodifluoromethane												
	R 12B1 see Chlorodifluorobromomethane												
	R 13, see Chlorotrifluoromethane												
	R 13B1, see Bromotrifluoromethane												
	R 14, see Tetrafluoromethane												
	1, see Dichlorofluoromethane												

	R 22, see Chlorodifluoromethane													
	Radioactive material excepted package-articles manufactured from natural or depleted uranium or natural thorium	7	UN2910		None		421 1 424	421-1, 424	421 1, 424			A		
	Radioactive material excepted package-empty packaging	7	UN2910		EMPTY		427	427	427			A		
	Radioactive material, excepted package-instruments or articles	7	UN2910		None		421-1, 422	421 1 422	421-1, 422			A		
	Radioactive material, excepted package-limited quantity of material	7	UN2910		None		421, 421-1 453	421, 421 1 417	421, 421-1 417			A		40, 96
	Radioactive material, fissile, n o s	7	UN2918		RADIOACTIVE		421 422, 424	425	425			A		
	Radioactive material low specific activity, n.o.s. *or* Radioactive material, LSA, n.o.s	7	UN2912		RADIOACTIVE		421, 422, 424	415, 416	415, 416			A		40, 96
	Radioactive material, n.o.s	7	UN2982		RADIOACTIVE		421, 422	415 415	415, 416			A		
	Radioactive material special form n.o.s	7	UN2974		RADIOACTIVE									
	Railway torpedo see Signals, railway track, explosive													
	Rare gases and nitrogen mixtures	2.2	UN1981		NONFLAMMABLE GAS		306	302	None	75 kg	150 kg	A		
	Rare gases and oxygen mixtures	2 2	UN1980		NONFLAMMABLE GAS		306	302	None	75 kg	150 kg	A		
	Rare gases, mixtures	2.2	UN1979		NONFLAMMABLE GAS		306	302	None	75 kg	150 kg	A		
	RC 318, see Octafluorocyclobutane													
	RDX and cyclotetramethylenetetranitramine wetted or desensitized *see* RDX and HMX mixtures, wetted or desensitized													
	RDX and HMX mixtures, wetted with *not less than 15 percent water by mass* or RDX and HMX mixtures desensitized with *not less than 10 percent phlegmatizer by mass*	1 1D	UN0391	II	EXPLOSIVE 1 1D		None	62	None	Forbidden	Forbidden	B		1E 5E
	RDX and Octogen mixtures, wetted or desensitized *see* RDX and HMX mixtures wetted or desensitized *etc.*													
	RDX see Cyclotrimethylene trinitramine *etc.*													
	Receptacles, small containing gas *flammable without release device not refillable and not exceeding 1 L capacity*	2 1	UN2037		FLAMMABLE GAS		306	304	None	1 kg	15 kg	B		40
	Receptacles small containing gas *non-flammable, without release device, not refillable and not exceeding 1 L capacity*	2.2	UN2037		NONFLAMMABLE GAS		306	304	None	1 kg	15 kg	B		40
	Red phosphorus, see Phosphorus, amorphous													
	Refrigerant gases n.o.s.	2.2	UN1078		NONFLAMMABLE GAS		306	304	314 315	75 kg	150 kg	A		
D	Refrigerant gases n.o.s. *or* Dispersant gases, n o s.	2 1	NA1954		FLAMMABLE GAS		306	304	314, 315	Forbidden	150 kg	D		40
D	Refrigerating machine	3	NA1993	III	FLAMMABLE LIQUID		174	174	None	10 L	10 L	A		
D	Refrigerating machines *containing flammable non-poisonous liquefied gas*	2 1	NA1954		FLAMMABLE GAS		306	308	306	Forbidden	25 kg	C		40
	Refrigerating machines *containing non-flammable non-toxic, liquefied gas or ammonia solutions (UN2073)*	2.2	UN2857		NONFLAMMABLE GAS		306, 307	308	306, 307	Forbidden	450 kg	A		
D	Regulated medical waste	6.2	NA3275	II	INFECTIOUS SUBSTANCE		197	197	None	Forbidden	Forbidden	E		
	Release devices explosive	1 4S	UN0173	II	EXPLOSIVE 1.4S		None	62	None	25 kg	100 kg	A		
	Resin solution *flammable*	3	UN1866	II	FLAMMABLE LIQUID	B52, T7, T30	150	173	242	5 L	60 L	B		
	Resorcinol			III	FLAMMABLE LIQUID	B1, B52, T7, T30	150	173	242	60 L	220 L	A		
	Rifle grenade see Grenades *hand or rifle etc*	6 1	UN2676	III	KEEP AWAY FROM FOOD		153	213	240	100 kg	200 kg	A		
	Rifle powder see Powder, smokeless *(UN 0160)*													
	Rivets, explosive													
	Road asphalt or tar liquid, see Tars, liquid, *etc.*	1 4S	UN0174	II	EXPLOSIVE 1 4S		None	62	None	25 kg	100 kg	A		
	Rocket motors	1 3C	UN0186	II	EXPLOSIVE 1.3C	109	None	62	None	Forbidden	220 kg	B		
	Rocket motors	1 1C	UN0280	II	EXPLOSIVE 1 1C	109	None	62	None	Forbidden	Forbidden	B		
	Rocket motors	1 2C	UN0281	II	EXPLOSIVE 1 2C	109	None	62	None	Forbidden	Forbidden	B		
	Rocket motors liquid fueled	1 2J	UN0395	II	EXPLOSIVE 1 2J	109	None	62	None	Forbidden	Forbidden	E	7E 16E 23E	
	Rocket motors liquid fueled	1 3J	UN0396	II	EXPLOSIVE 1.3J	109	None	62	None	Forbidden	Forbidden	E	7E 16E 23E	
	Rocket motors with hypergolic liquids *with or without an expelling charge*	1 3L	UN0250	II	EXPLOSIVE 1 3L	109	None	62	None	Forbidden	Forbidden	E	2E 8E 11E 17E	
	Rocket motors with hypergolic liquids *with or without an expelling charge*	1 2L	UN0322	II	EXPLOSIVE 1 2L	109	None	62	None	Forbidden	Forbidden	E	2E 8E, 11E, 17E	
	Rockets line-throwing	1.2G	UN0238	II	EXPLOSIVE 1 2G		None	62	None	Forbidden	Forbidden	B		
	Rockets line-throwing	1 3G	UN0240	II	EXPLOSIVE 1 3G		None	62	None	Forbidden	75 kg	B		
	Rockets line-throwing	1 4G	UN0453	II	EXPLOSIVE 1 4G		None	62	None	Forbidden	75 kg	A	24E	
	Rockets liquid fueled *with bursting charge*	1 1J	UN0397	II	EXPLOSIVE 1 1J		None	62	None	Forbidden	Forbidden	E	7E 16E 23E	
	Rockets liquid fueled *with bursting charge*	1 2J	UN0398	II	EXPLOSIVE 1.2J		None	62	None	Forbidden	Forbidden	E	7E 16E, 23E	

§172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols (1)	Hazardous materials descriptions and proper shipping names (2)	Hazard class or Division (3)	Identification Numbers (4)	Packing group (5)	Label(s) required (if not exceptions) (6)	Special provisions (7)	(8) Packaging authorizations (§173.***) Exceptions (8A)	Non-bulk packaging (8B)	Bulk packaging (8C)	(9) Quantity limitations Passenger aircraft or railcar (9A)	Cargo aircraft only (9B)	(10) Vessel stowage requirements Vessel stowage (10A)	Other stowage provisions (10B)
	Rockets, with bursting charge	1.1F	UN0180	II	EXPLOSIVE 1.1F		None	62	None	Forbidden	Forbidden	E	
	Rockets, with bursting charge	1.1E	UN0181	II	EXPLOSIVE 1.1E		None	62	None	Forbidden	Forbidden	B	
	Rockets, with bursting charge	1.2E	UN0182	II	EXPLOSIVE 1.2E		None	62	None	Forbidden	Forbidden	B	
	Rockets, with bursting charge	1.2F	UN0295	II	EXPLOSIVE 1.2F		None	62	None	Forbidden	Forbidden	E	
	Rockets, with bursting charge	1.2C	UN0436	II	EXPLOSIVE 1.2C		None	62	None	Forbidden	Forbidden	B	
	Rockets, with expelling charge	1.3C	UN0437	II	EXPLOSIVE 1.3C		None	62	None	Forbidden	Forbidden	B	
	Rockets, with expelling charge	1.4C	UN0438	II	EXPLOSIVE 1.4C		None	62	None	Forbidden	75 kg	A	24E
	Rockets, with expelling charge	1.3C	UN0183	II	EXPLOSIVE 1.3C		None	62	None	Forbidden	Forbidden	B	
	Rockets, with inert head	3	UN1286	II	FLAMMABLE LIQUID	T7	150	202	242	5 L	60 L	B	
	Rosin oil			III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
		3	UN1287	II	FLAMMABLE LIQUID	T7, T30	150	202	242	5 L	60 L	B	
	Rubber solution			III	FLAMMABLE LIQUID	B1, T7, T30	150	203	242	60 L	220 L	A	
		4.3	UN1423	I	DANGEROUS WHEN WET.	22, A7, A19, B100, N34, N40, N45.	None	211	242	Forbidden	15 kg	D	
	Rubidium												
	Rubidium hydroxide	8	UN2678	II	CORROSIVE	T8	154	212	240	15 kg	50 kg	A	
	Rubidium hydroxide solution	8	UN2677	II	CORROSIVE	B2, T8	154	202	242	1 L	30 L	A	
				III	CORROSIVE	T7	154	203	241	5 L	60 L	A	
	Safety fuse, see Fuse, safety												
	Samples, explosive, other than initiating explosives		UN0190	II		113	None	48	None	Forbidden	Forbidden	E	12E
	Sand acid, see Fluorosilicic acid												
	Seed cake, containing vegetable oil solvent extractions and expelled seeds, with not more than 10 percent of oil and when the amount of moisture is higher than 11 percent, with not more than 20 percent of oil and moisture combined.	4.2	UN1386	III	None	N7	None	213	241	Forbidden	Forbidden	A	13
I	Seed cake with more than 1.5 percent oil and not more than 11 percent moisture	4.2	UN1386	III	None	N7	None	213	241	Forbidden	Forbidden	E	13
I	Seed cake with not more than 1.5 percent oil and not more than 11 percent moisture	4.2	UN2217	III	None	N7	None	213	241	Forbidden	Forbidden	A	13
	Selenates or Selenites	6.1	UN2630	I	POISON		None	211	242	5 kg	50 kg	E	
	Selenic acid	8	UN1905	I	CORROSIVE	N34	None	211	242	Forbidden	25 kg	A	
	Selenium compound, n.o.s.	6.1	UN3283	I	POISON		None	211	242	5 kg	50 kg	B	
				II	POISON	T14	None	212	242	25 kg	100 kg	B	
				III	KEEP AWAY FROM FOOD.	T7	153	213	240	100 kg	200 kg	A	
	Selenium disulfide	6.1	UN2657	II	POISON		None	212	242	25 kg	100 kg	A	
	Selenium hexafluoride	2.3	UN2194		POISON GAS, CORROSIVE.	1	None	302	None	Forbidden	Forbidden	D	40
	Selenium nitride	Forbidden											
	Selenium oxide	6.1	NA2811	I	POISON		None	211	242	5 kg	50 kg	B	
D	Selenium oxychloride	8	UN2879	I	CORROSIVE, POISON	A3, A6, A7, N34, T12, T27	None	201	243	0.5 L	2.5 L	E	40
	Selenium powder	6.1	UN2658	III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A	
	Self-heating liquid corrosive, inorganic n.o.s.	4.2	UN3188	II	SPONTANEOUSLY COMBUSTIBLE, CORROSIVE		None	202	243	1 L	5 L	C	
				III	SPONTANEOUSLY COMBUSTIBLE; CORROSIVE.		None	203	241	5 L	60 L	C	
	Self-heating liquid, corrosive, organic, n.o.s.	4.2	UN3185	II	SPONTANEOUSLY COMBUSTIBLE, CORROSIVE		None	202	243	1 L	5 L	C	
				III	SPONTANEOUSLY COMBUSTIBLE, CORROSIVE.		None	203	241	5 L	50 L	C	
	Self-heating liquid, inorganic, n.o.s.	4.2	UN3186	II	SPONTANEOUSLY COMBUSTIBLE.		None	202	242	1 L	5 L	C	
				III	SPONTANEOUSLY COMBUSTIBLE.		None	203	241	5 L	60 L	C	
	Self-heating liquid, organic, n.o.s.	4.2	UN3183	II	SPONTANEOUSLY COMBUSTIBLE		None	202	242	1 L	5 L	C	

			III	SPONTANEOUSLY COMBUSTIBLE.		None	203	241	5 L	60 L	C	
Self-heating liquid, toxic inorganic n o s	4.2	UN3187	II	SPONTANEOUSLY COMBUSTIBLE, POISON		None	202	243	1 L	5 L	C	
			III	SPONTANEOUSLY COMBUSTIBLE, KEEP AWAY FROM FOOD		None	203	241	5 L	60 L	C	
Self-heating liquid toxic organic, n o s.	4.2	UN3184	II	SPONTANEOUSLY COMBUSTIBLE, POISON.		None	202	243	1 L	5 L	C	
			III	SPONTANEOUSLY COMBUSTIBLE, KEEP AWAY FROM FOOD		None	203	241	5 L	60 L	C	
Self-heating solid, corrosive inorganic, n o s	4.2	UN3192	II	SPONTANEOUSLY COMBUSTIBLE, CORROSIVE		None	212	242	15 kg	50 kg	C	
			III	SPONTANEOUSLY COMBUSTIBLE, CORROSIVE.		None	213	242	25 kg	100 kg	C	
Self-heating, solid, corrosive organic, n o.s	4.2	UN3126	II	SPONTANEOUSLY COMBUSTIBLE, CORROSIVE		None	212	242	15 kg	50 kg	C	
			III	SPONTANEOUSLY COMBUSTIBLE, CORROSIVE		None	213	242	25 kg	100 kg	C	
Self-heating solid, inorganic n.o.s	4.2	UN3190	II	SPONTANEOUSLY COMBUSTIBLE.		None	212	241	15 kg	50 kg	C	
			III	SPONTANEOUSLY COMBUSTIBLE.		None	213	241	25 kg	100 kg	C	
Self-heating solid, organic n o.s	4.2	UN3088	II	SPONTANEOUSLY COMBUSTIBLE	B101	None	212	241	15 kg	50 kg	C	
			III	SPONTANEOUSLY COMBUSTIBLE.	B101	None	213	241	25 kg	100 kg	C	
Self-heating solid, oxidizing n o s	4 2	UN3127		SPONTANEOUSLY COMBUSTIBLE, OXIDIZER.		None	214	214	Forbidden	Forbidden		
Self-heating solid toxic, inorganic, n o s	4.2	UN3191	II	SPONTANEOUSLY COMBUSTIBLE, POISON.		None	212	242	15 kg	50 kg	C	
			III	SPONTANEOUSLY COMBUSTIBLE, KEEP AWAY FROM FOOD		None	213	242	25 kg	100 kg	C	
Self-heating, solid toxic, organic, n.o.s	4 2	UN3128	II	SPONTANEOUSLY COMBUSTIBLE, POISON.		None	212	242	15 kg	50 kg	C	
			III	SPONTANEOUSLY COMBUSTIBLE, KEEP AWAY FROM FOOD		None	213	242	25 kg	100 kg	C	
Self-propelled vehicle, see Engines *or* Batteries *etc*												
Self-reactive liquid type B	4 1	UN3221	II	FLAMMABLE SOLID	53	None	224	None	Forbidden	Forbidden	D	61
Self-reactive liquid type B temperature controlled	4 1	UN3231	II	FLAMMABLE SOLID	53	None	224	None	Forbidden	Forbidden	D	2 61
Self-reactive liquid type C	4 1	UN3223	II	FLAMMABLE SOLID		None	224	None	5 L	10 L	D	61
Self-reactive liquid type C, temperature controlled	4 1	UN3233	II	FLAMMABLE SOLID		None	224	None	Forbidden	Forbidden	D	2 61
Self-reactive liquid type D	4 1	UN3225	II	FLAMMABLE SOLID		None	224	None	5 L	10 L	D	61
Self-reactive liquid type D, temperature controlled	4 1	UN3235	II	FLAMMABLE SOLID		None	224	None	Forbidden	Forbidden	D	2, 61
Self-reactive liquid type E	4 1	UN3227	II	FLAMMABLE SOLID		None	224	None	10 L	25 L	D	61
Self-reactive liquid type E, temperature controlled	4 1	UN3237	II	FLAMMABLE SOLID		None	224	None	Forbidden	Forbidden	D	2 61
Self-reactive liquid type F	4 1	UN3229	II	FLAMMABLE SOLID		None	224	None	10 L	25 L	D	61
Self-reactive liquid type F, temperature controlled	4 1	UN3239	II	FLAMMABLE SOLID		None	224	None	Forbidden	Forbidden	D	2, 61
Self-reactive solid type B	4 1	UN3222	II	FLAMMABLE SOLID	53	None	224	None	Forbidden	Forbidden	D	61
Self-reactive solid type B, temperature controlled	4 1	UN3232	II	FLAMMABLE SOLID	53	None	224	None	Forbidden	Forbidden	D	2 61
Self-reactive solid type C	4 1	UN3224	II	FLAMMABLE SOLID		None	224	None	5 kg	10 kg	D	61
Self-reactive solid type C temperature controlled	4 1	UN3234	II	FLAMMABLE SOLID		None	224	None	Forbidden	Forbidden	D	2 61
Self-reactive solid type D	4 1	UN3226	II	FLAMMABLE SOLID		None	224	None	5 kg	10 kg	D	61
Self-reactive solid type D, temperature controlled	4 1	UN3236	II	FLAMMABLE SOLID		None	224	None	Forbidden	Forbidden	D	2, 61
Self-reactive solid type E	4 1	UN3228	II	FLAMMABLE SOLID		None	224	None	10 kg	25 kg	D	61
Self-reactive solid type E, temperature controlled	4 1	UN3238	II	FLAMMABLE SOLID		None	224	None	Forbidden	Forbidden	D	2 61
Self-reactive solid type F	4 1	UN3230	II	FLAMMABLE SOLID		None	224	None	10 kg	25 kg	D	61
Self-reactive solid type F temperature controlled	4 1	UN3240	II	FLAMMABLE SOLID		None	224	None	Forbidden	Forbidden	D	2 61
Shale oil	3	UN1288	I	FLAMMABLE LIQUID	T7	None	201	243	1 L	30 L	B	
			II	FLAMMABLE LIQUID	T7, T30	150	202	242	5 L	60 L	B	
			III	FLAMMABLE LIQUID	B1 T7 T30	150	203	242	60 L	220 L	A	
Shaped charges, commercial, see Charges shaped commercial *etc*												
Signal devices hand	1 4G	UN0191	II	EXPLOSIVE 1 4G		None	62	None	Forbidden	75 kg	A	24E

§172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	Packing group	Label(s) required (if not excepted)	Special provisions	(8) Packaging authorizations (§173.***) Exceptions	Non-bulk packaging	Bulk packaging	(9) Quantity limitations Passenger aircraft or railcar	Cargo aircraft only	(10) Vessel stowage requirements Vessel stowage	Other stowage provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Signal devices, hand	1.4S	UN0373	II	EXPLOSIVE 1.4S		None	62	None	25 kg	100 kg	A	
	Signals, distress, ship	1.1G	UN0194	II	EXPLOSIVE 1.1G		None	62	None	Forbidden	Forbidden	B	
	Signals, distress, ship	1.3G	UN0195	II	EXPLOSIVE 1.3G		None	62	None	Forbidden	75 kg	B	
	Signals, highway, see Signal devices, hand; Fireworks, type D												
	Signals, railway track, explosive	1.1G	UN0192	II	EXPLOSIVE 1.1G		None	62	None	Forbidden	Forbidden	B	
	Signals, railway track, explosive	1.4S	UN0193	II	EXPLOSIVE 1.4S		None	62	None	25 kg	100 kg	A	
	Signals, railway track, explosive	1.3G	UN0492		EXPLOSIVE 1.3G		None	62	None	Forbidden	Forbidden	E	1E, 8E
	Signals, railway track, explosive	1.4G	UN0493		EXPLOSIVE 1.4G		None	62	None	Forbidden	75 kg	A	24E
	Signals, ship distress, water-activated, see Contrivances, water-activated, etc.												
	Signals, smoke	1.1G	UN0196	II	EXPLOSIVE 1.1G		None	62	None	Forbidden	Forbidden	B	
	Signals, smoke	1.4G	UN0197	II	EXPLOSIVE 1.4G		None	62	None	Forbidden	75 kg	A	24E
	Signals, smoke	1.2G	UN0313	II	EXPLOSIVE 1.2G		None	62	None	Forbidden	Forbidden	B	
	Signals, smoke	1.3G	UN0487	II	EXPLOSIVE 1.3G		None	62	None	Forbidden	Forbidden	B	
	Silane	2.1	UN2203		FLAMMABLE GAS		None	302	None	Forbidden	Forbidden	E	40, 57, 104
	Silicofluoric acid, see Fluorosilicic acid												
	Silicon chloride, see Silicon tetrachloride												
	Silicon powder, amorphous	4.1	UN1346	III	FLAMMABLE SOLID	A1	None	213	240	25 kg	100 kg	A	
	Silicon tetrachloride	8	UN1818	II	CORROSIVE	A3, A6, B2, B6, T18, T26, T29	154	202	242	1 L	30 L	C	40
	Silicon tetrafluoride	2.3	UN1859		POISON GAS, CORROSIVE.	2, 25	None	302	None	Forbidden	25 kg	D	40
	Silver acetylide (dry)	Forbidden											
	Silver arsenite	6.1	UN1683	II	POISON		None	212	242	25 kg	100 kg	A	
	Silver azide (dry)	Forbidden											
	Silver chlorate (dry)	Forbidden											
	Silver cyanide	6.1	UN1684	II	POISON		None	212	242	25 kg	100 kg	A	26, 40
	Silver fulminate (dry)	Forbidden											
	Silver nitrate	5.1	UN1493	II	OXIDIZER		152	212	242	5 kg	25 kg	A	
	Silver oxalate (dry)	Forbidden											
	Silver picrate (dry)	Forbidden											
	Silver picrate, wetted with not less than 30 percent water, by mass	4.1	UN1347	I	FLAMMABLE SOLID		None	211	None	Forbidden	Forbidden	D	26, 36
	Sludge, acid	8	UN1906	II	CORROSIVE	A3, A7, B9, N34, T9, T27	None	202	242	Forbidden	30 L	C	14
D	Smokeless powder for small arms (100 pounds or less)	4.1	NA3178	I	FLAMMABLE SOLID	10	None	171	None	Forbidden	Forbidden	A	
	Soda lime with more than 4 percent sodium hydroxide	8	UN1907	III	CORROSIVE		154	213	240	25 kg	100 kg	A	
	Sodium	4.3	UN1428	I	DANGEROUS WHEN WET	A7, A8, A19, A20, B9, B48, B68, N34, T15, T29, T48.	None	211	244	1 kg	15 kg	D	
	Sodium aluminate, solid	8	UN2812	III	CORROSIVE		154	213	240	25 kg	100 kg	A	
	Sodium aluminate, solution	8	UN1819	II	CORROSIVE	B2, T8	154	202	242	1 L	30 L	A	
				III	CORROSIVE	T7	154	203	241	5 L	60 L	A	
	Sodium aluminum hydride	4.3	UN2835	II	DANGEROUS WHEN WET.	A8, A19, A20, B100.	None	212	242	Forbidden	50 kg	E	
	Sodium ammonium vanadate	6.1	UN2863	II	POISON		None	212	242	25 kg	100 kg	A	
	Sodium arsanilate	6.1	UN2473	III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A	
	Sodium arsenate	6.1	UN1685	II	POISON		None	212	242	25 kg	100 kg	A	
	Sodium arsenite, aqueous solutions	6.1	UN1686	II	POISON	T15	None	202	243	5 L	60 L	A	
				III	KEEP AWAY FROM FOOD.	T15	153	203	241	60 L	220 L	A	
	Sodium arsenite, solid	6.1	UN2027	II	POISON		None	212	242	25 kg	100 kg	A	
	Sodium azide	6.1	UN1687	II	POISON	B28	None	212	242	25 kg	100 kg	A	36, 52, 91
	Sodium bifluoride, see Sodium hydrogendifluoride												
	Sodium bisulfite, solution, see Bisulfites, aqueous solutions, n o s												
	Sodium borohydride	4.3	UN1426	I	DANGEROUS WHEN WET.	N40	None	211	242	Forbidden	15 kg	E	
	Sodium bromate	5.1	UN1494	II	OXIDIZER		152	212	242	5 kg	25 kg	A	56, 58, 106
	Sodium cacodylate	6.1	UN1688	II	POISON		None	212	242	25 kg	100 kg	A	26
	Sodium chlorate	5.1	UN1495	II	OXIDIZER	A9, N34, T9	152	212	240	5 kg	25 kg	A	56, 58 106
	Sodium chlorate, aqueous solution	5.1	UN1428	II	OXIDIZER	A2, B6, T8	152	202	241	1 L	5 L	B	56 58 106
	Sodium chlorate mixed with dinitrotoluene, see Explosive blasting, type C												

Sodium chlorite	5.1	UN1496	II	OXIDIZER	A9 N34, T8	None	212	242	5 kg	25 kg	A	56, 58 106
Sodium chloroacetate	6.1	UN2659	III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A	
Sodium cuprocyanide solid	6.1	UN2316	I	POISON		None	211	242	5 kg	50 kg	A	26
Sodium cuprocyanide solution	6.1	UN2317	I	POISON	T8, T26	None	201	243	1 L	30 L	B	26, 40
Sodium cyanide	6.1	UN1589	I	POISON	B69, B77, N74, N75, T42	None	211	242	5 kg	50 kg	B	52
Sodium dichloroisocyanurate or Sodium dichloro-s-triazinetrione, see Dichloroisocyanuric acid etc.												
Sodium dinitro-o-cresolate *dry or wetted with less than 15 percent water, by mass*	1.3C	UN0234	II	EXPLOSIVE 1.3C		None	62	None	Forbidden	Forbidden	B	1E, 5E
Sodium dinitro-o-cresolate, wetted *with not less than 15 percent water, by mass*	4.1	UN1348	I	FLAMMABLE SOLID, POISON.	23, A8, A19, A20, N41	None	211	None	1 kg	15 kg	E	28, 36
Sodium dithionite *or* Sodium hydrosulfite	4.2	UN1384	II	SPONTANEOUSLY COMBUSTIBLE.	A19, A20, B106	None	212	241	15 kg	50 kg	E	13
Sodium fluoride	6.1	UN1690	III	KEEP AWAY FROM FOOD.	T8	153	213	240	100 kg	200 kg	A	26
Sodium fluoroacetate	6.1	UN2629	I	POISON		None	211	242	5 kg	50 kg	E	
Sodium fluorosilicate	6.1	UN2674	III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A	26
Sodium hydride, see Sodium hydroxide, solid												
Sodium hydride	4.3	UN1427	I	DANGEROUS WHEN WET	A19, B100, N40	None	211	242	Forbidden	15 kg	E	
Sodium hydrogendifluoride	8	UN2439	II	CORROSIVE	B106, N3, N34	154	212	240	15 kg	50 kg	A	12, 25, 26 40
Sodium hydrogendifluoride *solution*	8	UN2439	II	CORROSIVE	N3, N34	154	202	242	1 L	30 L	A	12, 25 26 40
D Sodium hydrosulfide, solution	8	NA2922	II	CORROSIVE, POISON	B2	154	202	243	1 L	30 L	B	40, 95
Sodium hydrosulfide, *with less than 25 percent water of crystallization*	4.2	UN2318	II	SPONTANEOUSLY COMBUSTIBLE.	A7, A19, A20	None	212	241	15 kg	50 kg	A	
Sodium hydrosulfide *with not less than 25 percent water of crystallization*	8	UN2949	III	CORROSIVE	A7	154	212	240	15 kg	50 kg	A	26
Sodium hydrosulfite, *see* Sodium dithionite												
Sodium hydroxide, solid	8	UN1823	II	CORROSIVE		154	212	240	15 kg	50 kg	A	
Sodium hydroxide solution	8	UN1824	II	CORROSIVE	B2, N34, T8	154	202	242	1 L	30 L	A	
			III	CORROSIVE	N34, T7	154	203	241	5 L	60 L	A	
Sodium hypochlorite, solution, see Hypochlorite solutions *etc.*												
Sodium metal, liquid alloy, see Alkali metal alloys, liquid, n.o.s.												
Sodium methylate	4.2	UN1431	II	SPONTANEOUSLY COMBUSTIBLE, CORROSIVE	A19	None	212	242	15 kg	50 kg	B	
Sodium methylate solutions *in alcohol*	3	UN1289	II	FLAMMABLE LIQUID, CORROSIVE.	T8, T31	None	202	243	1 L	5 L	B	
			III	FLAMMABLE LIQUID, CORROSIVE.	B1, T7, T30	150	203	242	5 L	60 L	A	
Sodium monoxide	8	UN1825	II	CORROSIVE		154	212	240	15 kg	50 kg	A	
Sodium nitrate	5.1	UN1498	III	OXIDIZER	A1, A29	152	213	240	25 kg	100 kg	A	
Sodium nitrate and potassium nitrate mixtures	5.1	UN1499	III	OXIDIZER	A1, A29	152	213	240	25 kg	100 kg	A	
Sodium nitrite	5.1	UN1500	III	OXIDIZER	A1, A29	152	213	240	25 kg	100 kg	A	
Sodium pentachlorophenate	6.1	UN2567	II	POISON		None	212	242	25 kg	100 kg	A	56, 58
Sodium percarbonate	5.1	UN2467	III	OXIDIZER	27, A1, A29	152	213	240	25 kg	100 kg	A	13
Sodium perchlorate	5.1	UN1502	II	OXIDIZER		152	212	242	5 kg	25 kg	A	56 58, 106
Sodium permanganate	5.1	UN1503	II	OXIDIZER		152	212	242	5 kg	25 kg	D	56, 58, 69, 106, 107
Sodium peroxide	5.1	UN1504	I	OXIDIZER	A20, N34	None	211	None	Forbidden	15 kg	B	13, 75, 106
Sodium peroxoborate, anhydrous	5.1	UN3247	II	OXIDIZER		152	212	240	5 kg	25 kg	A	13 25, 106
Sodium persulfate	5.1	UN1505	III	OXIDIZER	A1	152	213	240	25 kg	100 kg	A	
Sodium phosphide	4.3	UN1432	I	DANGEROUS WHEN WET, POISON.	A19, N40	None	211	None	Forbidden	15 kg	E	40, 85
Sodium picramate, *dry or wetted with less than 20 percent water, by mass*	1.3C	UN0236	II	EXPLOSIVE 1.3C		None	62	None	Forbidden	Forbidden	B	1E, 5E
Sodium picramate, wetted *with not less than 20 percent water, by mass*	4.1	UN1349	I	FLAMMABLE SOLID	23, A8, A19, N41	None	211	None	Forbidden	15 kg	E	28, 36
Sodium pinyl peroxide	Forbidden											
Sodium potassium alloys, see Potassium sodium alloys												
Sodium salts of aromatic nitro-derivatives, n.o.s *explosive*	1.3C	UN0203	II	EXPLOSIVE 1.3C		None	62	None	Forbidden	Forbidden	B	1E 5E
Sodium selenate see Selenates *or* Selenites												
D Sodium selenite	6.1	NA2630	II	POISON		None	212	242	25 kg	100 kg	E	
Sodium sulfide, anhydrous *or* Sodium sulfide *with less than 30 percent water of crystallization*	4.2	UN1385	II	SPONTANEOUSLY COMBUSTIBLE.	A19 A20, B105, N34.	None	212	241	15 kg	50 kg	A	
Sodium sulfide hydrated *with not less than30 percent water*	8	UN1849	II	CORROSIVE	T8	154	212	240	15 kg	50 kg	A	26
Sodium superoxide	5.1	UN2547	I	OXIDIZER	A20, N34	None	211	None	Forbidden	15 kg	E	13 75, 106
Sodium *tetranitride*	Forbidden											
Solids containing corrosive liquid n.o.s.	8	UN3244	II	CORROSIVE	49	154	212	240	15 kg	50 kg	B	40
Solids containing flammable liquid n.o.s	4.1	UN3175	II	FLAMMABLE SOLID	47	151	212	240	15 kg	50 kg	B	
Solids containing toxic liquid n.o.s	6.1	UN3243	II	POISON	48	None	212	240	25 kg	100 kg	B	40

§172.101. HAZARDOUS MATERIALS TABLE—Continued

Symbols (1)	Hazardous materials descriptions and proper shipping names (2)	Hazard class or Division (3)	Identification Numbers (4)	Packing group (5)	Label(s) required (if not excepted) (6)	Special provisions (7)	(8) Packaging authorizations (§173 ***) Exceptions (8A)	Non-bulk packaging (8B)	Bulk packaging (8C)	(9) Quantity limitations Passenger-aircraft or railcar (9A)	Cargo aircraft only (9B)	(10) Vessel stowage requirements Vessel stowage (10A)	Other stowage provisions (10B)
	Sounding devices, explosive	1.2F	UN0204	II	EXPLOSIVE 1.2F		None	62	None	Forbidden	Forbidden	E	
	Sounding devices, explosive	1.1F	UN0296	II	EXPLOSIVE 1.1F		None	62	None	Forbidden	Forbidden	E	
	Sounding devices, explosive	1.1D	UN0374	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	
	Sounding devices, explosive	1.2D	UN0375	II	EXPLOSIVE 1.2D		None	62	None	Forbidden	Forbidden	B	
	Sounding devices, explosive												
	Spirits of salt, see Hydrochloric acid												
	Squibs, see Igniters *etc*												
	Stannic chloride, anhydrous	8	UN1827	II	CORROSIVE	B2, T8, T26	154	202	242	1 L	30 L	C	
	Stannic chloride pentahydrate	8	UN2440	III	CORROSIVE		154	213	240	25 kg	100 kg	A	
	Stannic phosphide	4.3	UN1433	I	DANGEROUS WHEN WET, POISON.	A19, B100, N40	None	211	242	Forbidden	15 kg	E	40, 85
	Steel swarf, *see* Ferrous metal borings, *etc.*												
	Stibine	2.3	UN2676		POISON GAS, FLAMMABLE GAS.	1	None	304	None	Forbidden	Forbidden	D	40
	Storage batteries, wet, see Batteries, *wet etc*												
	Strontium arsenite	6.1	UN1691	II	POISON		None	212	242	25 kg	100 kg	A	
	Strontium chlorate	5.1	UN1506	II	OXIDIZER	A1, A9, N34	152	212	242	5 kg	25 kg	A	56, 58, 106
	Strontium chlorate	5.1	UN1507	III	OXIDIZER	A1, A29	152	213	240	25 kg	100 kg	A	
	Strontium nitrate	5.1	UN1508	II	OXIDIZER		152	212	242	5 kg	25 kg	A	56, 58, 106
	Strontium perchlorate	5.1	UN1509	II	OXIDIZER		152	212	242	5 kg	25 kg	A	13, 75, 106
	Strontium peroxide	4.3	UN2013	I	DANGEROUS WHEN WET, POISON.	A19, N40	None	211	None	Forbidden	15 kg	E	40, 85
	Strontium phosphide	6.1	UN1692	I	POISON		None	211	242	5 kg	50 kg	A	40
	Strychnine or Strychnine salts	6.1	UN1692	I	POISON		None	211	242	5 kg	50 kg	A	40
	Styphnic acid *see* Trinitroresorcinol, *etc.*	3	UN2056	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Styrene monomer, inhibited	1.1L	UN0357	II	EXPLOSIVE 1.1L	101	None	62	None	Forbidden	Forbidden	E	2E, 8E, 11E, 17E
	Substances, explosive, n.o.s	1.2L	UN0358	II	EXPLOSIVE 1.2L	101	None	62	None	Forbidden	Forbidden	E	2E, 8E, 11E, 17E
	Substances, explosive, n.o.s.	1.3L	UN0359	II	EXPLOSIVE 1.3L	101	None	62	None	Forbidden	Forbidden	E	2E, 8E, 11E, 17E
	Substances, explosive, n.o.s	1.1A	UN0473	II	EXPLOSIVE 1.1A	101, 111	None	62	None	Forbidden	Forbidden	E	2E, 6E
	Substances, explosive, n.o.s	1.1C	UN0474	II	EXPLOSIVE 1.1C	101	None	62	None	Forbidden	Forbidden	B	1E, 5E
	Substances explosive n.o.s	1.1D	UN0475	II	EXPLOSIVE 1.1D	101	None	62	None	Forbidden	Forbidden	B	1E, 5E
	Substances, explosive, n.o.s	1.1G	UN0476	II	EXPLOSIVE 1.1G	101	None	62	None	Forbidden	Forbidden	E	1E, 8E
	Substances, explosive, n.o.s	1.3C	UN0477	II	EXPLOSIVE 1.3C	101	None	62	None	Forbidden	Forbidden	B	1E, 5E
	Substances, explosive, n.o.s	1.3G	UN0478	II	EXPLOSIVE 1.3G	101	None	62	None	Forbidden	Forbidden	E	1E, 8E
	Substances, explosive, n.o.s	1.4C	UN0479	II	EXPLOSIVE 1.4C	101	None	62	None	Forbidden	75 kg	A	1E, 5E
	Substances, explosive, n.o.s.	1.4D	UN0480	II	EXPLOSIVE 1.4D	101	None	62	None	Forbidden	75 kg	A	1E, 5E, 24E
	Substances, explosive, n.o.s	1.4S	UN0481	II	EXPLOSIVE 1.4S	101	None	62	None	25 kg	75 kg	A	
	Substances explosive n.o.s	1.4G	UN0485	II	EXPLOSIVE 1.4G	101	None	62	None	Forbidden	75 kg	E	1E, 8E
	Substances, explosive, n.o.s.	1.5D	UN0482	II	EXPLOSIVE 1.5D	101	None	62	None	Forbidden	Forbidden	B	1E, 5E
	Substances, explosive, very insensitive, n.o.s., or Substances, EVI, n.o.s												
	Substituted nitrophenol pesticides, liquid, flammable, toxic, *flash point less than 23 degrees C*	3	UN2780	I	FLAMMABLE LIQUID, POISON.		None	201	243	Forbidden	30 L	B	40
				II	FLAMMABLE LIQUID, POISON.		None	202	243	1 L	60 L	B	40
				III	FLAMMABLE LIQUID, KEEP AWAY FROM FOOD.	B1	150	203	242	60 L	220 L	A	
	Substituted nitrophenol pesticides, liquid, toxic	6.1	UN3014	I	POISON	T42	None	201	243	1 L	30 L	B	40
				II	POISON	T14	None	202	243	5 L	60 L	B	40
				III	KEEP AWAY FROM FOOD.	T14	153	203	241	60 L	220 L	A	40
	Substituted nitrophenol pesticides, liquid, toxic, flammable *flashpoint not less than 23 degrees C*	6.1	UN3013	I	POISON, FLAMMABLE LIQUID	T42	None	201	243	1 L	30 L	B	40
				II	POISON, FLAMMABLE LIQUID.	T14	None	202	243	5 L	60 L	B	40
				III	KEEP AWAY FROM FOOD, FLAMMABLE LIQUID.	B1, T14	153	203	242	60 L	220 L	A	40
	Substituted nitrophenol pesticides, solid, toxic	6.1	UN2779	I	POISON		None	211	242	5 kg	50 kg	A	40
				II	POISON		None	212	242	25 kg	100 kg	A	40

				III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A		40
	Sucrose octanitrate (dry)	Forbidden												
	Sulfamic acid	8	UN2967	III	CORROSIVE		154	213	240	25 kg	100 kg	A		
D	Sulfur	9	NA1350	III	CLASS 9	30, A1	None	None	240	25 kg	100 kg	A		19 74
I	Sulfur	4.1	UN1350	III	FLAMMABLE SOLID	A1, N20, T1	151	213	240	25 kg	100 kg	A		19, 74
	Sulfur and chlorate, loose mixtures of	Forbidden												
	Sulfur chlorides	8	UN1828	I	CORROSIVE	5, A3, B10, B77, N34	None	201	243	Forbidden	2.5 L	C		40
	Sulfur dichloride, see Sulfur chlorides													
	Sulfur dioxide, liquefied	2.3	UN1079		POISON GAS, CORROSIVE.	3, B14	None	304	314, 315	Forbidden	25 kg	D		40
	Sulfur dioxide solution see Sulfurous acid													
	Sulfur hexafluoride	2.2	UN1080		NONFLAMMABLE GAS		306	304	314, 315	75 kg	150 kg	A		
D	Sulfur, molten	9	NA2448	III	CLASS 9	T9, T30	None	213	247	Forbidden	Forbidden	C		61
I	Sulfur, molten	4.1	UN2448	III	FLAMMABLE SOLID	T9, T30	None	213	247	Forbidden	Forbidden	C		61
	Sulfur tetrafluoride	2.3	UN2418		POISON GAS, CORROSIVE.	1	None	302	245	Forbidden	25 kg	D		40
+	Sulfur trioxide, inhibited	8	UN1829	I	CORROSIVE, POISON	2, A7, B9, B12, B14, B32, B49, B74, B77, N34, T38, T43, T45.	None	227	244	Forbidden	25 kg	A		40
+, D	Sulfur trioxide, uninhibited	8	NA1829	I	CORROSIVE, POISON	2, A7, B9, B12, B14, B32, B49, B74, B77, N34, T38, T43, T45.	None	227	244	Forbidden	25 kg	C		10, 40
	Sulfuretted hydrogen, see Hydrogen sulfide, liquefied													
	Sulfuric acid, fuming with less than 30 percent free sulfur trioxide	8	UN1831	I	CORROSIVE	A3, A7, B84, N34, T18, T27.	None	201	243	Forbidden	2.5 L	C		14, 40
+	Sulfuric acid, fuming with 30 percent or more free sulfur trioxide	8	UN1831	I	CORROSIVE, POISON	2, A3, A6, A7, B9, B14, B32, B74, B77, B84, N34, T38, T43, T45.	None	227	244	Forbidden	Forbidden	C		14 40
	Sulfuric acid, spent	8	UN1832	II	CORROSIVE	A3, A7, B2, B83, B84, N34, T9, T27.	None	202	242	Forbidden	30 L	C		14
	Sulfuric acid with more than 51 percent acid	8	UN1830	II	CORROSIVE	A3, A7 B3, B83, B84, N34, T9, T27	154	202	242	1 L	30 L	C		14
	Sulfuric acid with not more than 51% acid	8	UN2796	II	CORROSIVE	A3, A7, B2, B15, N6, N34, T9, T27.	154	202	242	1 L	30 L	B		
	Sulfuric and hydrofluoric acid mixtures, see Hydrofluoric and sulfuric acid mixtures													
	Sulfuric anhydride, see Sulfur trioxide, inhibited													
	Sulfurous acid	8	UN1833	II	CORROSIVE	B3, T8	154	202	242	1 L	30 L	B		40
+	Sulfuryl chloride	8	UN1934	I	CORROSIVE, POISON	1, A3, B6, B9, B10, B14, B30, B74, B77, N34, T38, T43, T44.	None	226	244	Forbidden	Forbidden	C		40
	Sulfuryl fluoride	2.3	UN2191		POISON GAS	4	None	304	314, 315	Forbidden	25 kg	D		40
	Tars, liquid including road asphalt and oils, bitumen and cut backs	3	UN1999	II	FLAMMABLE LIQUID	B13, T7, T30	150	202	242	5 L	60 L	B		
				III	FLAMMABLE LIQUID	B1, B13, T7, T30	150	203	242	60 L	220 L	A		
	Tear gas candles	6.1	UN1700	II	POISON, FLAMMABLE SOLID.		None	340	None	Forbidden	50 kg	D		40
	Tear gas cartridges, see Ammunition tear-producing etc.													
D	Tear gas devices with more than 2 percent tear gas substances, by mass	6.1	NA1693	I	POISON		None	340	None	Forbidden	Forbidden	D		40
				II	POISON		None	340	None	Forbidden	Forbidden	D		40
	Tear gas devices, with not more than 2 percent tear gas substances, by mass, see Aerosols, etc.													
	Tear gas grenades, see Tear gas candles													
	Tear gas substances, liquid, n.o.s.	6.1	UN1693	I	POISON		None	201	None	Forbidden	Forbidden	D		40
				II	POISON		None	202	None	Forbidden	5 L	D		40
	Tear gas substances, solid, n.o.s.	6.1	UN1693	I	POISON		None	211	None	Forbidden	Forbidden	D		40
				II	POISON		None	212	None	Forbidden	25 kg	D		40
	Tellurium compound n.o.s.	6.1	UN3284	I	POISON		None	211	242	5 kg	50 kg	B		
				II	POISON	T14	None	212	242	25 kg	100 kg	B		
				III	KEEP AWAY FROM FOOD.	T7	153	213	240	100 kg	200 kg	A		
	Tellurium hexafluoride	2.3	UN2195		POISON GAS, CORROSIVE.	1	None	302	None	Forbidden	Forbidden	D		40
	Terpene hydrocarbons, n.o.s.	3	UN2319	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A		
	Terpinolene	3	UN2541	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A		
	Tetrazido benzene quinone	Forbidden												
	Tetrabromoethane	6.1	UN2504	III	KEEP AWAY FROM FOOD	T7	153	203	241	60 L	220 L	A		

§172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols (1)	Hazardous materials descriptions and proper shipping names (2)	Hazard class or Division (3)	Identification Numbers (4)	Packing group (5)	Label(s) required (if not excepted) (6)	Special provisions (7)	(8) Packaging authorizations (§173.***) Exceptions (8A)	Non-bulk packaging (8B)	Bulk packaging (8C)	(9) Quantity limitations Passenger aircraft or railcar (9A)	Cargo aircraft only (9B)	(10) Vessel stowage requirements Vessel stowage (10A)	Other stowage provisions (10B)
	Tetrachloroethane	6.1	UN1702	II	POISON	N36, T14	None	202	243	5 L	60 L	A	40
	Tetrachloroethylene	6.1	UN1897	III	KEEP AWAY FROM FOOD	N36, T1	153	203	241	60 L	220 L	A	40
	Tetraethyl dithiopyrophosphate	6.1	UN1704	II	POISON		None	212	242	25 kg	100 kg	D	40
D	Tetraethyl lead, liquid	6.1	NA1649	I	POISON, FLAMMABLE LIQUID.		None	201	None	Forbidden	Forbidden	E	40
D	Tetraethyl pyrophosphate, liquid	6.1	NA3018	I	POISON		None	201	243	Forbidden	1 L	A	40
D	Tetraethyl pyrophosphate solid	6.1	NA2783	I	POISON	N77	None	211	242	Forbidden	50 kg	A	40
	Tetraethyl silicate	3	UN1292	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Tetraethylammonium perchlorate (dry)	Forbidden											
	Tetraethylenepentamine	8	UN2320	III	CORROSIVE	T2	154	203	241	5 L	60 L	A	
	1,1,1,2-Tetrafluoroethane	2.2	UN3159		NONFLAMMABLE GAS		306	304	314, 315	75 kg	150 kg	A	
	Tetrafluoroethylene, inhibited	2.1	UN1081		FLAMMABLE GAS		306	304	None	Forbidden	150 kg	E	40
	Tetrafluoromethane R14	2.2	UN1982		NONFLAMMABLE GAS		None	302	None	75 kg	150 kg	A	
	1,2,3,6-Tetrahydrobenzaldehyde	3	UN2498	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Tetrahydrofuran	3	UN2056	II	FLAMMABLE LIQUID	T8	None	202	242	5 L	60 L	B	
	Tetrahydrofurfurylamine	3	UN2943	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Tetrahydrophthalic anhydrides with more than 0.05 percent of maleic anhydride	8	UN2698	III	CORROSIVE		154	213	240	25 kg	100 kg	A	
	1,2,3,6-Tetrahydropyridine	3	UN2410	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	B	
	Tetrahydrothiophene	3	UN2412	II	FLAMMABLE LIQUID	T7	150	202	242	5 L	60 L	B	
	Tetramethylammonium hydroxide	8	UN1835	II	CORROSIVE	B2, T8	154	202	242	1 L	30 L	A	
	Tetramethylene diperoxide dicarbamide	Forbidden											
	Tetramethylsilane	3	UN2749	I	FLAMMABLE LIQUID	T21, T26	None	201	243	Forbidden	30 L	D	
	Tetranitro diglycerin	Forbidden											
	Tetranitroaniline	1.1D	UN0207	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E 5E
+	Tetranitromethane	6.1	UN1510	I	OXIDIZER, POISON	2, B9, B14, B32, B74, T38, T43, T45.	None	227	None	Forbidden	Forbidden	D	40, 66, 106
	2,3,4,6-Tetranitrophenol	Forbidden											
	2,3,4,6-Tetranitrophenyl methyl nitramine	Forbidden											
	2,3,4,6-Tetranitrophenylnitramine	Forbidden											
	Tetranitroresorcinol (dry)	Forbidden											
	2,3,5,6-Tetranitroso-1,4-dinitrobenzene	Forbidden											
	2,3,5,6-Tetranitroso nitrobenzene (dry)	Forbidden											
	Tetrapropylorthotitanate	3	UN2413	III	FLAMMABLE LIQUID	B1, T8	150	203	242	60 L	220 L	A	
	Tetrazene, see Guanyl nitrosaminoguanyltetrazene												
	Tetrazine (dry)	Forbidden											
	Tetrazol-1-acetic acid	1.4C	UN0407	II	EXPLOSIVE 1.4C		None	62	None	Forbidden	75 kg	A	1E, 5E, 24E
	Tetrazolyl azide (dry)	Forbidden											
	Tetryl, see Trinitrophenylmethylnitramine												
	Thallium chlorate	5.1	UN2573	II	OXIDIZER, POISON		None	212	242	5 kg	25 kg	A	58, 59, 106
	Thallium compounds, n.o.s.	6.1	UN1707	II	POISON		None	212	242	25 kg	100 kg	A	
	Thallium nitrate	6.1	UN2727	II	POISON, OXIDIZER		None	212	242	5 kg	25 kg	A	
D	Thallium sulfate, solid	6.1	NA1707	II	POISON		None	212	242	5 kg	50 kg	A	
	4-Thiapentanal	6.1	UN2785	III	KEEP AWAY FROM FOOD.	T8	153	203	241	60 L	220 L	D	25, 49
	Thioacetic acid	3	UN2436	II	FLAMMABLE LIQUID	T8	150	202	242	5 L	60 L	B	
	Thiocarbonylchloride, see Thiophosgene												
	Thioglycol	6.1	UN2966	II	POISON	T8	None	202	243	5 L	60 L	A	
	Thioglycolic acid	8	UN1940	II	CORROSIVE	A7, B2, N34, T8	154	202	242	1 L	30 L	A	
	Thiolactic acid	6.1	UN2936	II	POISON	T8	None	212	242	25 kg	100 kg	A	
	Thionyl chloride	8	UN1836	I	CORROSIVE	A7, B6, B10, N34, T42.	None	201	243	Forbidden	Forbidden	C	40
	Thiophene	3	UN2414	II	FLAMMABLE LIQUID	B101, T2	150	202	242	5 L	60 L	B	40
+	Thiophosgene	6.1	UN2474	II	POISON	2, A7, B9, B14, B32, B74, N33, N34; T38, T43, T45	None	227	244	Forbidden	60 L	B	26, 40
	Thiophosphoryl chloride	8	UN1837	II	CORROSIVE	A3, A7, B2, B6, B25, B101, N34, T12.	None	202	242	Forbidden	30 L	C	40

	Thorium metal, pyrophoric	7	UN2975		RADIOACTIVE, SPONTANEOUSLY COMBUSTIBLE		None	418	None	Forbidden	Forbidden	D		
	Thorium nitrate, solid	7	UN2978		RADIOACTIVE, OXIDIZER.		None	419	None	Forbidden	15 kg	A		
	Tin chloride, fuming, see Stannic chloride, anhydrous													
	Tin perchloride or Tin tetrachloride, see Stannic chloride anhydrous													
	Tinctures, medicinal	3	UN1293	II	FLAMMABLE LIQUID	T8, T31	150	202	242	5 L	60 L	B		
				III	FLAMMABLE LIQUID	B1, T7, T30	150	203	242	60 L	220 L	A		
	Tinning flux see Zinc chloride													
	Titanium disulphide	4.2	UN3174	III	SPONTANEOUSLY COMBUSTIBLE.		None	213	241	25 kg	100 kg	A		
	Titanium hydride	4.1	UN1871	II	FLAMMABLE SOLID	A19, A20, N34	None	212	241	15 kg	50 kg	E		
	Titanium powder, dry	4.2	UN2546	I	SPONTANEOUSLY COMBUSTIBLE.		None	211	242	Forbidden	Forbidden	D		
				II	SPONTANEOUSLY COMBUSTIBLE.	A19, A20, N5, N34	None	212	241	15 kg	50 kg	D		
				III	SPONTANEOUSLY COMBUSTIBLE.		None	213	241	25 kg	100 kg	D		
	Titanium powder, wetted *with not less than 25 percent water (a visible excess of water must be present) (a) mechanically produced, particle size less than 53 microns, (b) chemically produced, particle size less than 840 microns*	4.1	UN1352	II	FLAMMABLE SOLID	A19, A20, N34	None	212	240	15 kg	50 kg	E		
	Titanium sponge granules *or* Titanium sponge powders	4.1	UN2878	II	FLAMMABLE SOLID	A1	None	213	240	25 kg	100 kg	D		
D	Titanium sulfate solution	8	NA1760	II	CORROSIVE	B2, B15	None	202	242	1 L	30 L	B	40	
+	Titanium tetrachloride	8	UN1838	II	CORROSIVE, POISON	2, A3, A6, B7, B9, B14, B32, B41, B74, B77, N41, T38, T43, T45.	None	227	244	Forbidden	30 L	C	40	
	Titanium trichloride mixtures	8	UN2869	II	CORROSIVE	A7, B106, N34	154	212	240	15 kg	50 kg	A	40	
				III	CORROSIVE	A7, N34	154	213	240	25 kg	100 kg	A	40	
	Titanium trichloride, pyrophoric *or* Titanium trichloride mixtures, pyrophoric	4.2	UN2441	I	SPONTANEOUSLY COMBUSTIBLE, CORROSIVE.	A7, A8, A19, A20, N34.	None	181	244	Forbidden	Forbidden	D	40	
	TNT mixed with aluminum, see Tritonal													
	TNT, *see* Trinitrotoluene, *etc.*													
	Toluene	3	UN1294	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B		
	Toluene diisocyanate	6.1	UN2078	II	POISON	B110, T14	None	202	243	5 L	60 L	D		25, 40
	Toluene sulfonic acid, *see* Alkyl, *or* Aryl sulfonic acid *etc.*													
	Toluidines *liquid*	6.1	UN1708	II	POISON	T14	None	202	243	5 L	60 L	A		
	Toluidines *solid*	6.1	UN1708	II	POISON		None	212	242	25 kg	100 kg	A		
	2,4-Toluylenediamine *or* 2,4-Toluenediamine	6.1	UN1709	III	KEEP AWAY FROM FOOD	T7	153	213	240	100 kg	200 kg	A		
	Torpedoes, liquid fueled, *with inert head*	1.3J	UN0450	II	EXPLOSIVE 1.3J			62	None	Forbidden	Forbidden	E	7E, 16E, 23E	
	Torpedoes, liquid fueled, *with or without bursting charge*	1.1J	UN0449	II	EXPLOSIVE 1.1J			62	None	Forbidden	Forbidden	E	7E, 16E, 23E	
	Torpedoes *with bursting charge*	1.1E	UN0329	II	EXPLOSIVE 1.1E			62	None	Forbidden	Forbidden	B		
	Torpedoes *with bursting charge*	1.1F	UN0330	II	EXPLOSIVE 1.1F			62	None	Forbidden	Forbidden	B		
	Torpedoes *with bursting charge*	1.1D	UN0451	II	EXPLOSIVE 1.1D			62	None	Forbidden	Forbidden	B		
	Toxic liquid, corrosive, inorganic, n.o.s.	6.1	UN3289	I	POISON, CORROSIVE	T42	None	201	243	0.5 L	2.5 L	A		
				II	POISON, CORROSIVE	T14	None	202	243	1 L	30 L	A		
	Toxic liquid, corrosive, inorganic, n.o.s. *Inhalation Hazard, Packing Group I, Zone A*	6.1	UN3289	I	POISON, CORROSIVE	1, B9, B14, B30, B72, T38, T43, T44.	None	226	244	Forbidden	Forbidden	B	40	
	Toxic liquid, corrosive, inorganic, n.o.s. *Inhalation Hazard, Packing Group I, Zone B*	6.1	UN3289	I	POISON, CORROSIVE	2, B9, B14, B32, B74, T38, T43, T45.	None	227	244	Forbidden	Forbidden	B	40	
	Toxic liquid inorganic, n.o.s.	6.1	UN3287	I	POISON	T42	None	201	243	1 L	30 L	A		
				II	POISON	T14	None	202	243	5 L	60 L	A		
				III	KEEP AWAY FROM FOOD	T7	153	203	241	60 L	220 L	A		
	Toxic liquid inorganic, n.o.s. *Inhalation Hazard, Packing Group I, Zone A*	6.1	UN3287	I	POISON	1, B9, B14, B30, B72, T38, T43, T44.	None	226	244	Forbidden	Forbidden	B	40	
	Toxic liquid, inorganic, n.o.s. *Inhalation Hazard, Packing Group I, Zone B*	6.1	UN3287	I	POISON	2, B9, B14, B32, B74, T38, T43, T45.	None	227	244	Forbidden	Forbidden	B	40	
	Toxic liquids, corrosive, organic n.o.s.	6.1	UN2927	I	POISON, CORROSIVE	T42	None	201	243	0.5 L	2.5 L	B	40	
				II	POISON, CORROSIVE	T42	None	202	243	1 L	30 L	B	40	

§172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols (1)	Hazardous materials descriptions and proper shipping names (2)	Hazard class or Division (3)	Identification Numbers (4)	Packing group (5)	Label(s) required (if not excepted) (6)	Special provisions (7)	(8) Packaging authorizations (§173.***) Exceptions (8A)	Non-bulk packaging (8B)	Bulk packaging (8C)	(9) Quantity limitations Passenger aircraft or railcar (9A)	Cargo aircraft only (9B)	(10) Vessel stowage requirements Vessel stowage (10A)	Other stowage provisions (10B)
	Toxic liquids, corrosive, organic, n o.s., *Inhalation hazard, Packing Group I, Zone A*	6.1	UN2927	I	POISON, CORROSIVE	1, B9, B14, B30, B72, T38, T43, T44.	None	226	244	Forbidden	Forbidden	D	20, 40, 95
	Toxic liquids, corrosive, organic, n o.s., *Inhalation hazard, Packing Group I, Zone B*	6.1	UN2927	I	POISON, CORROSIVE	2, B9, B14, B32, B74, T38, T43, T45.	None	227	244	Forbidden	Forbidden	D	20, 40 95
	Toxic liquids, flammable, organic, n.o.s.	6.1	UN2929	I	POISON, FLAMMABLE LIQUID.	T42	None	201	243	1 L	30 L	B	40
				II	POISON, FLAMMABLE LIQUID	T15	None	202	243	5 L	60 L	B	40
	Toxic liquids, flammable, organic, n.o.s., *Inhalation hazard, Packing Group I, Zone A*	6.1	UN2929	I	POISON, FLAMMABLE LIQUID.	1, B9, B14, B30, B72, T38, T43, T44	None	226	244	Forbidden	Forbidden	D	20, 40, 95
	Toxic liquids, flammable, organic, n o.s., *Inhalation hazard, Packing Group I, Zone B*	6.1	UN2929	I	POISON, FLAMMABLE LIQUID.	2, B9, B14, B32, B74, T38, T43, T45.	None	227	244	Forbidden	Forbidden	D	20, 40, 95
	Toxic, liquids, organic, n.o.s.	6.1	UN2810	I	POISON	T42	None	201	243	1 L	30 L	B	40
				II	POISON	T14	None	202	243	5 L	60 L	B	40
				III	KEEP AWAY FROM FOOD.	T7	153	203	241	60 L	220 L	A	40
	Toxic, liquids, organic, n.o.s. *Inhalation hazard, Packing Group I, Zone A*	6.1	UN2810	I	POISON	1, B9, B14, B30, B72, T38, T43, T44.	None	226	244	Forbidden	Forbidden	D	20, 40, 95
	Toxic, liquids, organic, n.o.s. *Inhalation hazard, Packing Group I, Zone B*	6.1	UN2810	I	POISON	2, B9, B14, B32, B74, T38, T43, T45	None	227	244	Forbidden	Forbidden	D	20, 40, 95
	Toxic liquids, oxidizing, n.o.s.	6.1	UN3122	I	POISON, OXIDIZER	A4	None	201	243	Forbidden	2.5 L	C	
				II	POISON, OXIDIZER		None	202	243	1 L	5 L	C	
	Toxic liquids, oxidizing, n.o.s. *Inhalation hazard, Packing Group I, Zone A*	6.1	UN3122	I	POISON, OXIDIZER	1, B9, B14, B30, B72, T38, T43, T44.	None	226	244	Forbidden	2.5 L	C	
	Toxic liquids, oxidizing, n.o.s. *Inhalation Hazard, Packing Group I, Zone B*	6.1	UN3122	I	POISON, OXIDIZER	2, B9, B14, B32, T38, T43, T45.	None	227	244	Forbidden	Forbidden	C	
	Toxic liquids, water-reactive, n o.s.	6.1	UN3123	I	POISON, DANGEROUS WHEN WET.	A4	None	201	243	Forbidden	1 L	E	40
				II	POISON, DANGEROUS WHEN WET.		None	202	243	1 L	5 L	E	40
	Toxic liquids, water-reactive, n.o.s. *Inhalation hazard, packing group I, Zone A*	6.1	UN3123	I	POISON, DANGEROUS WHEN WET.	1, B9, B14, B30, B72, T38, T43, T44.	None	226	244	Forbidden	Forbidden	E	40
	Toxic liquids, water-reactive, n o.s. *Inhalation hazard, packing group I, Zone B*	6.1	UN3123	I	POISON, DANGEROUS WHEN WET.	2, B9, B14, B32, B74, T38, T43, T45.	None	227	244	Forbidden	Forbidden	E	40
	Toxic solid, corrosive, inorganic, n.o.s.	6.1	UN3290	I	POISON, CORROSIVE		None	211	242	1 kg	25 kg	A	
				II	POISON, CORROSIVE		None	212	242	15 kg	50 kg	A	
	Toxic solid, inorganic, n o.s.	6.1	UN3288	I	POISON		None	211	242	5 kg	50 kg	A	
				II	POISON		None	212	242	25 kg	100 kg	A	
				III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A	
	Toxic solids, corrosive, organic, n.o.s.	6.1	UN2928	I	POISON, CORROSIVE		None	211	242	1 kg	25 kg	B	40
				II	POISON, CORROSIVE		None	212	242	15 kg	50 kg	B	40
	Toxic solids, flammable, organic, n.o.s.	6.1	UN2930	I	POISON, FLAMMABLE SOLID.	B106	None	211	242	1 kg	15 kg	B	
				II	POISON, FLAMMABLE SOLID.	B106	None	212	242	15 kg	50 kg	B	
	Toxic solids, organic, n.o.s.	6.1	UN2811	I	POISON		None	211	242	5 kg	50 kg	B	
				II	POISON		None	212	242	25 kg	100 kg	B	

				III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A		
	Toxic solids, oxidizing n o s.	6.1	UN3086	I	POISON, OXIDIZER		None	211	242	1 kg	15 kg	C		
				II	POISON, OXIDIZER		None	212	242	15 kg	50 kg	C		
	Toxic solids, self-heating n o s	6 1	UN3124	I	POISON, SPONTANEOUSLY COMBUSTIBLE	A5, B100	None	211	242	5 kg	15 kg	D		40
				II	POISON, SPONTANEOUSLY COMBUSTIBLE		None	212	242	15 kg	50 kg	D		40
	Toxic solids, water-reative, n o.s.	6.1	UN3125	I	POISON, DANGEROUS WHEN WET	A5, B100	None	211	242	5 kg	15 kg	D		40
				II	POISON, DANGEROUS WHEN WET	B101	None	212	242	15 kg	50 kg	D		40
D	Toy Caps	1 4S	NA0337	II	EXPLOSIVE 1.4S		None	62	None	25 kg	100 kg	A		9E
	Tracers for ammunition	1.3G	UN0212	II	EXPLOSIVE 1.3G		None	62	None	Forbidden	Forbidden	B		
	Tracers for ammunition	1 4G	UN0306	II	EXPLOSIVE 1 4G		None	62	None	Forbidden	75 kg	A		24E
	Tractors, see Vehicles, self propelled													
	Tri-(b-nitroxyethyl) ammonium nitrate	Forbidden												
	Triethyl borate	6.1	UN2609	III	KEEP AWAY FROM FOOD.		153	203	241	60 L	220 L	A		13
	Triethylamine	3	UN2610	II	FLAMMABLE LIQUID, CORROSIVE.	B1, T1	None	203	242	5 L	60 L	A		40
	Triazine pesticides, liquid, flammable, toxic, *flash point less than 23 degrees C*	3	UN2764	I	FLAMMABLE LIQUID, POISON.		None	201	243	Forbidden	30 L	B		40
				II	FLAMMABLE LIQUID, POISON		None	202	243	1 L	60 L	B		40
				III	FLAMMABLE LIQUID, KEEP AWAY FROM FOOD	B1	150	203	242	60 L	220 L	A		
	Triazine pesticides, liquid, toxic	6.1	UN2998	I	POISON	T42	None	201	243	1 L	30 L	B		40
				II	POISON	T14	None	202	243	5 L	60 L	B		40
				III	KEEP AWAY FROM FOOD.	T14	153	203	241	60 L	220 L	A		40
	Triazine pesticides, liquid, toxic, flammable, *flashpoint not less than 23 degrees C*	6.1	UN2997	I	POISON, FLAMMABLE LIQUID.	T42	None	201	243	1 L	30 L	B		40
				II	POISON, FLAMMABLE LIQUID	T14	None	202	243	5 L	60 L	B		40
				III	KEEP AWAY FROM FOOD, FLAMMABLE LIQUID.	T14	153	203	242	60 L	220 L	A		40
	Triazine pesticides, solid, toxic	6.1	UN2763	I	POISON		None	211	242	5 kg	50 kg	A		40
				II	POISON		None	212	242	25 kg	100 kg	A		40
				III	KEEP AWAY FROM FOOD.		153	213	240	100 kg	200 kg	A		40
	Tributylamine	8	UN2542	III	CORROSIVE	T2	None	203	241	5 L	60 L	A		
	Tributylphosphane	4.2	UN3254	I	SPONTANEOUSLY COMBUSTIBLE		None	211	242	Forbidden	Forbidden	D		
D	mono-(Trichloro) tetra-(monopotassium dichloro)-penta-s-triazinetrione, dry (*with more than 39 percent available chlorine*)	5 1	NA2468	II	OXIDIZER		152	212	240	5 kg	25 kg	A		13
	Trichloro-s-triazinetrione dry, with more than 39 percent available chlorine, see Trichloroisocyanuric acid, dry													
	Trichloroacetic acid	8	UN1839	II	CORROSIVE	A7, N34	154	212	240	15 kg	50 kg	A		
	Trichloroacetic acid, solution	8	UN2564	II	CORROSIVE	A3, A8, A7, B2, N34, T8.	154	202	242	1 L	30 L	B		
				III	CORROSIVE	A3, A8, A7, N34, T7	154	203	241	5 L	60 L	B		8
+	Trichloroacetyl chloride	8	UN2442	II	CORROSIVE, POISON	2, A3, A7, B9, B14, B32, B74, N34, T38, T43, T45.	None	227	244	Forbidden	Forbidden	D		40
	Trichlorobenzenes, liquid	6.1	UN2321	III	KEEP AWAY FROM FOOD	T7	153	203	241	60 L	220 L	A		
	Trichlorobutene	6 1	UN2322	II	POISON	T8	None	202	243	5 L	60 L	A		25, 40
	1,1,1-Trichloroethane	6.1	UN2831	III	KEEP AWAY FROM FOOD	N36, T7	153	203	241	60 L	220 L	A		40
	Trichloromethylene	6 1	UN1710	III	KEEP AWAY FROM FOOD	N36, T1	153	203	241	60 L	220 L	A		40
	Trichloroisocyanuric acid dry	5 1	UN2468	II	OXIDIZER		152	212	240	5 kg	25 kg	A		13
	Trichloromethyl perchlorate	Forbidden												
	Trichlorosilane	4 3	UN1295	I	DANGEROUS WHEN WET, FLAMMABLE LIQUID, CORROSIVE	A7, N34, T24, T26	None	201	244	Forbidden	Forbidden	D		21 28, 40, 49, 100
	Tricresyl phosphate *with more than 3 percent ortho isomer*	6.1	UN2574	II	POISON	A3, N33, N34, T8	None	202	243	5 L	60 L	A		
	Triethyl phosphite	3	UN2323	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A		

§172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols (1)	Hazardous materials descriptions and proper shipping names (2)	Hazard class or Division (3)	Identification Numbers (4)	Packing group (5)	Label(s) required (if not excepted) (6)	Special provisions (7)	(8) Packaging authorizations (§173.***) Exceptions (8A)	Non-bulk packaging (8B)	Bulk packaging (8C)	(9) Quantity limitations Passenger aircraft or railcar (9A)	Cargo aircraft only (9B)	(10) Vessel stowage requirements Vessel stowage (10A)	Other stowage provisions (10B)
	Triethylamine	3	UN1296	II	FLAMMABLE LIQUID, CORROSIVE	B101, T8	None	202	243	1 L	5 L	B	40
	Triethylenetetramine	8	UN2259	II	CORROSIVE	B2, T8	154	202	242	1 L	30 L	B	40
	Trifluoroacetic acid	8	UN2699	I	CORROSIVE	A3, A6, A7, B4, N3, N34, T18, T27.	None	201	243	0.5 L	2.5 L	B	12, 40
	Trifluoroacetyl chloride	2.3	UN3057		POISON GAS	2, 25, B9, B14	None	304	314, 315	Forbidden	Forbidden	D	40
	Trifluorochloroethylene, inhibited, R1113	2.3	UN1082		POISON GAS	3, 25, B14	None	304	314, 315	Forbidden	150 kg	B	40
	Trifluoroethane, compressed, R143	2.1	UN2035		FLAMMABLE GAS		306	304	314, 315	Forbidden	150 kg	B	40
	Trifluoromethane	2.2	UN1984		NONFLAMMABLE GAS		306	304	314, 315	75 kg	150 kg	A	
D	Trifluoromethane and chlorotrifluoromethane mixture (constant boiling mixture) (R-503). See Refrigerant gases, n.o.s.												
	Trifluoromethane, refrigerated liquid	2.2	UN3136		NONFLAMMABLE GAS		306	None	314, 315	50 kg	500 kg	D	
	5-Trifluoromethylaniline	6.1	UN2948	III	KEEP AWAY FROM FOOD.		153	203	241	60 L	220 L	A	
	3-Trifluoromethylaniline	6.1	UN2948	II	POISON	T14	None	202	243	5 L	60 L	A	40
	Trimonoline trinitrate	Forbidden											
	Trisobutylene	3	UN2324	III	FLAMMABLE LIQUID	B1, T7, T30	150	203	242	60 L	220 L	A	
	Trisocyanatoisocyanurate of isophoronediisocyanate, solution, with 70 percent, by mass	3	UN2906	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Trisopropyl borate	3	UN2616	II	FLAMMABLE LIQUID	T8, T31	150	202	242	5 L	60 L	A	
				III	FLAMMABLE LIQUID	B1, T8, T31	150	203	242	60 L	220 L	A	
D	Trimethoxysilane	6.1	NA9269	I	POISON, FLAMMABLE LIQUID.	2, B9, B14, B32, B74, T38, T45, T45.	None	227	244	Forbidden	Forbidden	E	40
	Trimethyl borate	3	UN2416	II	FLAMMABLE LIQUID	T14	150	202	242	5 L	60 L	B	
	Trimethyl phosphite	3	UN2329	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	1,3,5-Trimethyl-2,4,6-trinitrobenzene	Forbidden											
	Trimethylacetyl chloride	6.1	UN2438	I	POISON, CORROSIVE, FLAMMABLE LIQUID.	2, A3, A6, A7, B3, B9, B14, B32, B74, N34, T38, T45, T45.	None	227	244	Forbidden	Forbidden	D	25, 40
	Trimethylamine, anhydrous	2.1	UN1083		FLAMMABLE GAS		306	304	314, 315	Forbidden	150 kg	B	40
	Trimethylamine, aqueous solutions with not more than 50 percent trimethylamine by mass	3	UN1297	I	FLAMMABLE LIQUID, CORROSIVE.	T42	None	201	243	0.5 L	2.5 L	D	40, 41
				II	FLAMMABLE LIQUID, CORROSIVE.	B1, T14	None	202	243	1 L	5 L	B	40, 41
				III	FLAMMABLE LIQUID, CORROSIVE.	B1	150	203	242	5 L	60 L	A	40, 41
	1,3,5-Trimethylbenzene	3	UN2325	III	FLAMMABLE LIQUID	B1, T1	None	203	242	60 L	220 L	A	
	Trimethylchlorosilane	3	UN1298	II	FLAMMABLE LIQUID, CORROSIVE.	A3, A7, B77, N34, T14, T26.	None	202	243	1 L	5 L	E	40
	Trimethylcyclohexylamine	8	UN2326	III	CORROSIVE	T2	154	203	241	5 L	60 L	A	
	Trimethylene glycol diperchlorate	Forbidden											
	Trimethylhexamethylene diisocyanate	6.1	UN2328	III	KEEP AWAY FROM FOOD.	T8	153	203	241	60 L	220 L	B	
	Trimethylhexamethylenediamines	8	UN2327	III	CORROSIVE	T7	154	203	241	5 L	60 L	A	
	Trimethylol nitromethane trinitrate	Forbidden											
	Trinitro-meta-cresol	1.1D	UN0216	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E
	2,4,6-Trinitro-1,3-diazobenzene	Forbidden											
	2,4,6-Trinitro-1,3,5-triazido benzene (dry)	Forbidden											
	Trinitroacetic acid	Forbidden											
	Trinitroacetonitrile	Forbidden											
	Trinitroamine cobalt	Forbidden											
	Trinitroaniline or Picramide	1.1D	UN0153	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E
	Trinitroanisole	1.1D	UN0213	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E 5E
	Trinitrobenzene, dry or wetted with less than 30 percent water, by mass	1.1D	UN0214	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E

Trinitrobenzene, wetted with not less than 30 percent water, by mass	4.1	UN1354	I	FLAMMABLE SOLID	23, A2, A8, A19, N41.	None	211	None	0.5 kg	0.5 kg	E	28
Trinitrobenzenesulfonic acid	1.1D	UN0386	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	E	1E, 5E
Trinitrobenzoic acid, dry or wetted with less than 30 percent water, by mass	1.1D	UN0215	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E
Trinitrobenzoic acid, wetted with not less than 30 percent water, by mass	4.1	UN1355	I	FLAMMABLE SOLID	23, A2, A8, A19, N41.	None	211	None	0.5 kg	0.5 kg	E	28
Trinitrochlorobenzene or Picryl chloride	1.1D	UN0155	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E
Trinitroethanol	Forbidden											
Trinitroethylnitrate	Forbidden											
Trinitrofluorenone	1.1D	UN0387	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E
Trinitromethane	Forbidden											
1,3,5-Trinitronaphthalene	Forbidden											
Trinitrophenol or Picric acid, dry or wetted with less than 30 percent water, by mass	1.1D	UN0217	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E
Trinitrophenol, wetted with not less than 30 percent water, by mass	1.1D	UN0216	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E
2,4,6-Trinitrophenyl guanidine (dry)	1.1D	UN0154	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E
2,4,6-Trinitrophenyl nitramine	4.1	UN1344	I	FLAMMABLE SOLID	23, A8, A19, N41.	None	211	None	1 kg	15 kg	E	28 36
2,4,6-Trinitrophenyl trimethylol methyl nitramine trinitrate (dry)	Forbidden											
Trinitrophenylmethylnitramine or Tetryl	Forbidden											
Trinitroresorcinol or Styphnic acid, dry or wetted with less than 20 percent water, or mixture of alcohol and water, by mass	1.1D	UN0208	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E
Trinitroresorcinol, wetted or Styphnic acid, wetted with not less than 20 percent water, or mixture of alcohol and water by mass	1.1D	UN0219	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E
2,4,6-Trinitroso-3-methyl nitraminobenzene	1.1D	UN0384	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E
Trinitrotriazine cobalt nitrate	Forbidden											
Trinitrotoluene and Trinitrobenzene mixtures or TNT and trinitrobenzene mixtures or TNT and hexanitrostilbene mixtures or Trinitrotoluene and hexanitrostilbene mixtures	1.1D	UN0388	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E
Trinitrotoluene mixtures containing Trinitrobenzene and Hexanitrostilbene or TNT mixtures containing trinitrobenzene and hexanitrostilbene	1.1D	UN0389	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E
Trinitrotoluene or TNT, dry or wetted with less than 30 percent water, by mass	1.1D	UN0209	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E
Trinitrotoluene, wetted with not less than 30 percent water, by mass	4.1	UN1356	I	FLAMMABLE SOLID	23, A2, A8, A19, N41.	None	211	None	0.5 kg	0.5 kg	E	28
Tripropylamine	3	UN2260	III	FLAMMABLE LIQUID, CORROSIVE.	B1, T8	150	203	242	5 L	60 L	A	40
Tripropylene	3	UN2057	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
			III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
Tris(1-aziridinyl)phosphine oxide, solution	6.1	UN1601	II	POISON	T8	None	202	243	5 L	60 L	A	
			III	KEEP AWAY FROM FOOD.	T7	153	203	241	60 L	220 L	A	
Tris, bis-difluoroamino diethoxy propane (TVOPA)	Forbidden											
Trisnel	1.1D	UN0390	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E
Tungsten hexafluoride	2.3	UN2196		POISON GAS, CORROSIVE.	3	None	336	None	Forbidden	Forbidden	D	40
Turpentine	3	UN1299	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
Turpentine substitute	3	UN1300	I	FLAMMABLE LIQUID	T1	None	201	243	1 L	30 L	B	
			II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
			III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
Undecane	3	UN2330	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
Uranium hexafluoride, fissile excepted or non-fissile	7	UN2978		RADIOACTIVE, CORROSIVE.		421-2	420, 425	420, 426				
Uranium hexafluoride, fissile (with more than 1 percent U-235)	7	UN2977		RADIOACTIVE, CORROSIVE		463	417, 420	417, 420			A	
Uranium metal, pyrophoric	7	UN2979		RADIOACTIVE, SPONTANEOUSLY COMBUSTIBLE.		None	418	None			D	
Uranyl nitrate hexahydrate solution	7	UN2980		RADIOACTIVE, CORROSIVE.		421, 425	415, 416, 417	415, 416, 417			D	
Uranyl nitrate, solid	7	UN2981		RADIOACTIVE, OXIDIZER.		None	419	None	Forbidden	15 kg	A	
Urea hydrogen peroxide	5.1	UN1511	III	OXIDIZER, CORROSIVE	A1, A7, A29	152	213	240	25 kg	100 kg	A	13
Urea nitrate dry or wetted with less than 20 percent water, by mass	1.1D	UN0220	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	1E 5E
Urea nitrate, wetted with not less than 20 percent water, by mass	4.1	UN1357	I	FLAMMABLE SOLID	39, A8, A19, N41	None	211	None	1 kg	15 kg	A	28
Urea peroxide, see Urea hydrogen peroxide												
Valeraldehyde	3	UN2058	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
Valeric acid, see Corrosive liquids n.o.s.												
Valeryl chloride	8	UN2502	II	CORROSIVE, FLAMMABLE LIQUID	A3, A6, A7, B2, N34, T8.	154	202	242	1 L	30 L	C	40
Vanadium compound, n.o.s.	6.1	UN3285	I	POISON		None	211	242	5 kg	50 kg	B	
			II	POISON	T14	None	212	242	25 kg	100 kg	B	

§172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols (1)	Hazardous materials descriptions and proper shipping names (2)	Hazard class or Division (3)	Identification Numbers (4)	Packing group (5)	Label(s) required (if not excepted) (6)	Special provisions (7)	(8) Packaging authorizations (§173.***) Exceptions (8A)	Non-bulk packaging (8B)	Bulk packaging (8C)	(9) Quantity limitations Passenger aircraft or railcar (9A)	Cargo aircraft only (9B)	(10) Vessel stowage requirements Vessel stowage (10A)	Other stowage provisions (10B)
				III	KEEP AWAY FROM FOOD	T7	153	213	240	100 kg	200 kg	A	
	Vanadium oxytrichloride	8	UN2443	II	CORROSIVE	A3, A6, A7, B2, B16, N34, T8, T26.	154	202	242	Forbidden	30 L	C	40
	Vanadium pentoxide, non-fused form	6.1	UN2862	II	POISON		None	212	242	25 kg	100 kg	A	
	Vanadium tetrachloride	8	UN2444	I	CORROSIVE	A3, A6, A7, B4, N34, T8, T26.	None	201	243	Forbidden	2.5 L	C	40
	Vanadium trichloride	8	UN2475	III	CORROSIVE		154	213	240	25 kg	100 kg	A	40
	Vanadyl sulfate	6.1	UN2931	III	POISON		None	212	242	25 kg	100 kg	A	
D	Vehicles, self-propelled including internal combustion engines or other apparatus containing an internal combustion Engine or electric storage battery, see Engines etc. or Battery powered etc. or Wheel chair, electric)												
	Very signal cartridge, see Cartridges, signal												
	Vinyl acetate, inhibited	3	UN1301	II	FLAMMABLE LIQUID	T6	150	202	242	5 L	60 L	B	
	Vinyl bromide, inhibited	2.1	UN1086		FLAMMABLE GAS		306	304	314, 315	Forbidden	150 kg	B	40
	Vinyl butyrate, inhibited	3	UN2838	II	FLAMMABLE LIQUID	T7	150	202	242	5 L	60 L	B	
	Vinyl chloride, inhibited or Vinyl chloride, stabilized	2.1	UN1086		FLAMMABLE GAS	21, B44	306	304	314, 315	Forbidden	150 kg	B	40
	Vinyl chloroacetate	6.1	UN2589	II	POISON, FLAMMABLE LIQUID.	T14	None	202	243	5 L	60 L	A	
	Vinyl ethyl ether, inhibited	3	UN1302	I	FLAMMABLE LIQUID	A3, B100, T14	None	201	243	1 L	30 L	D	
	Vinyl fluoride, inhibited	2.1	UN1860		FLAMMABLE GAS	B43	306	304	314, 315	Forbidden	150 kg	E	40
	Vinyl isobutyl ether, inhibited	3	UN1304	II	FLAMMABLE LIQUID	T6	150	202	242	5 L	60 L	B	
	Vinyl methyl ether, inhibited	2.1	UN1087		FLAMMABLE GAS	B44	306	304	314, 315	Forbidden	150 kg	B	40
	Vinyl nitrate polymer	Forbidden											
	Vinyl toluene, inhibited mixed isomers	3	UN2616	III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Vinylidene chloride, inhibited	3	UN1303	I	FLAMMABLE LIQUID	T23, T29	150	201	243	1 L	30 L	E	40
	Vinylpyridines, inhibited	6.1	UN3073	II	POISON, FLAMMABLE LIQUID.	B100, T8	None	202	243	5 L	60 L	B	40
	Vinyltrichlorosilane	3	UN1305	I	FLAMMABLE LIQUID, CORROSIVE.	A3, A7, B6, N34, T14, T26.	None	201	243	Forbidden	2.5 L	B	40
	Warheads, rocket with burster or expelling charge	1.4D	UN0370	II	EXPLOSIVE 1.4D		None	62	None	Forbidden	75 kg	A	3E, 7E 24E
	Warheads, rocket with burster or expelling charge	1.4F	UN0371	II	EXPLOSIVE 1.4F		None	62	None	Forbidden	Forbidden	E	
	Warheads, rocket with bursting charge	1.1D	UN0286	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	3E, 7E
	Warheads, rocket with bursting charge	1.2D	UN0287	II	EXPLOSIVE 1.2D		None	62	None	Forbidden	Forbidden	B	3E, 7E
	Warheads, rocket with bursting charge	1.1F	UN0369	II	EXPLOSIVE 1.1F		None	62	None	Forbidden	Forbidden	E	
	Warheads, torpedo with bursting charge	1.1D	UN0221	II	EXPLOSIVE 1.1D		None	62	None	Forbidden	Forbidden	B	3E, 7E
	Water-reactive liquid, corrosive, n.o.s	4.3	UN3129	I	DANGEROUS WHEN WET, CORROSIVE.		None	201	243	Forbidden	1 L	D	
				II	DANGEROUS WHEN WET, CORROSIVE.		None	202	243	1 L	5 L	E	85
				III	DANGEROUS WHEN WET, CORROSIVE.		None	203	242	5 L	60 L	E	
	Water-reactive liquid, n.o.s	4.3	UN3148	I	DANGEROUS WHEN WET.		None	201	244	Forbidden	1 L	E	40
				II	DANGEROUS WHEN WET.		None	202	243	1 L	5 L	E	40
				III	DANGEROUS WHEN WET.		None	203	242	5 L	60 L	E	40
	Water-reactive liquid, toxic, n.o.s.	4.3	UN3130	I	DANGEROUS WHEN WET, POISON	A4	None	201	243	Forbidden	1 L	D	
				II	DANGEROUS WHEN WET, POISON.		None	202	243	1 L	5 L	E	85
				III	DANGEROUS WHEN WET, KEEP AWAY FROM FOOD.		None	203	242	5 L	60 L	E	85
	Water-reactive solid, corrosive, n.o.s.	4.3	UN3131	I	DANGEROUS WHEN WET, CORROSIVE.	B100, B40	None	211	242	Forbidden	15 kg	D	
				II	DANGEROUS WHEN WET, CORROSIVE.	B100	None	212	242	15 kg	50 kg	E	85

				III	DANGEROUS WHEN WET, CORROSIVE	B100	None	213	241	25 kg	100 kg	E	85
	Water-reactive solid, flammable n.o.s.	4.3	UN3132	I	DANGEROUS WHEN WET, FLAMMABLE SOLID	B100, N40	None	211	242	Forbidden	15 kg	E	
				II	DANGEROUS WHEN WET, FLAMMABLE SOLID.	B100	None	212	242	15 kg	50 kg	E	
				III	DANGEROUS WHEN WET, FLAMMABLE SOLID	B100	None	213	241	25 kg	100 kg	E	
	Water-reactive solid, n.o.s.	4.3	UN2813	I	DANGEROUS WHEN WET	B100, N40	None	211	242	Forbidden	15 kg	E	40
				II	DANGEROUS WHEN WET.	B100	None	212	242	15 kg	50 kg	E	40
				III	DANGEROUS WHEN WET	B100	None	213	241	25 kg	100 kg	E	40
	Water-reactive solid, oxidizing, n.o.s.	4.3	UN3133		DANGEROUS WHEN WET, OXIDIZER.		None	214	214	Forbidden	Forbidden		
	Water-reactive solid, self-heating, n.o.s.	4.3	UN3135	I	DANGEROUS WHEN WET, SPONTANEOUSLY COMBUSTIBLE	B100, N40	None	211	242	Forbidden	15 kg	E	
				II	DANGEROUS WHEN WET, SPONTANEOUSLY COMBUSTIBLE.	B100	None	212	242	15 kg	50 kg	E	
				III	DANGEROUS WHEN WET, SPONTANEOUSLY COMBUSTIBLE	B100	None	213	241	25 kg	100 kg	E	
	Water-reactive solid, toxic, n.o.s.	4.3	UN3134	I	DANGEROUS WHEN WET, POISON.	A8, B101, N40	None	211	242	Forbidden	15 kg	D	
				II	DANGEROUS WHEN WET, POISON.	B100	None	212	242	15 kg	50 kg	E	85
				III	DANGEROUS WHEN WET, KEEP AWAY FROM FOOD	B105	None	213	241	25 kg	100 kg	E	85
AD	Wheel chair electric (spillable or non-spillable type batteries)	9		III	CLASS 9		1 222	222	None	No limit	No limit	A	
	White acid, see Hydrofluoric acid mixtures												
I	White asbestos (chrysotile, actinolite, anthophyllite, tremolite)	9	UN2590	III	CLASS 9		155	216	240	200 kg	200 kg	A	34, 40
	Wood preservatives, liquid	3	UN1306	II	FLAMMABLE LIQUID	T7, T20	150	202	242	5 L	60 L	B	40
				III	FLAMMABLE LIQUID	B1, T7, T50	150	203	242	60 L	220 L	A	40
	Xenon	2.2	UN2036		NONFLAMMABLE GAS		306	302	None	75 kg	150 kg	A	
	Xenon, refrigerated liquid (cryogenic liquids)	2.2	UN2591		NONFLAMMABLE GAS		320	None	None	50 kg	500 kg	B	
	Xylenes	3	UN1307	II	FLAMMABLE LIQUID	T1	150	202	242	5 L	60 L	B	
				III	FLAMMABLE LIQUID	B1, T1	150	203	242	60 L	220 L	A	
	Xylenols	6.1	UN2261	II	POISON	T9	None	212	242	25 kg	100 kg	A	
	Xylidines, solid	6.1	UN1711	II	POISON	T14	None	212	242	25 kg	100 kg	A	
	Xylidines, solution	6.1	UN1711	II	POISON	T14	None	202	243	5 L	60 L	A	
	Xylyl bromide	6.1	UN1701	II	POISON	A3, A6, A7, N33	None	340	None	Forbidden	60 L	D	40
	p-Xylyl diazide	Forbidden											
	Zinc ammonium nitrite	5.1	UN1512	II	OXIDIZER		None	212	242	5 kg	25 kg	E	
	Zinc arsenate or Zinc arsenite or Zinc arsenite and zinc arsenate mixtures	6.1	UN1712	II	POISON		None	212	242	25 kg	100 kg	A	
	Zinc ashes	4.3	UN1436	III	DANGEROUS WHEN WET	A1, A19, B108	None	213	241	25 kg	100 kg	A	
	Zinc bisulfite solution see Bisulfites, inorganic aqueous solutions, n.o.s.												
	Zinc bromate	5.1	UN2469	III	OXIDIZER	A1, A29	152	213	240	25 kg	100 kg	A	56 58 106
	Zinc chlorate	5.1	UN1513	II	OXIDIZER	A8, N34	152	212	242	5 kg	25 kg	A	56 58 106
	Zinc chloride, anhydrous	8	UN2331	III	CORROSIVE		None	213	240	25 kg	100 kg	A	
	Zinc chloride, solution	8	UN1840	III	CORROSIVE	T7	154	203	241	5 L	60 L	A	
	Zinc cyanide	6.1	UN1713	I	POISON		None	211	242	5 kg	50 kg	A	26
	Zinc dithionite or Zinc hydrosulfite	9	UN1931	III	None		155	204	240	100 kg	200 kg	A	49
	Zinc ethyl see Diethylzinc												
	Zinc fluorosilicate	6.1	UN2855	III	KEEP AWAY FROM FOOD		153	213	240	100 kg	200 kg	A	26
	Zinc hydrosulfite see Zinc dithionite												
	Zinc manate solution see Zinc chloride solution												
	Zinc nitrate	5.1	UN1514	II	OXIDIZER		152	212	242	5 kg	25 kg	A	
	Zinc permanganate	5.1	UN1515	II	OXIDIZER		152	212	242	5 kg	25 kg	D	56 58 89 106, 107
	Zinc peroxide	5.1	UN1516	II	OXIDIZER		152	212	242	5 kg	25 kg	A	13 75, 106
	Zinc phosphide	4.3	UN1714	I	DANGEROUS WHEN WET, POISON	A19, N40	None	211	None	Forbidden	15 kg	E	40, 85
	Zinc powder or Zinc dust	4.3	UN1436	I	DANGEROUS WHEN WET, SPONTANEOUSLY COMBUSTIBLE.	A19, B100, N40	None	211	242	Forbidden	15 kg	A	

§172.101 HAZARDOUS MATERIALS TABLE—Continued

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	Packing group	Label(s) required (if not excepted)	Special provisions	(8) Packaging authorizations (§173 ***)			(9) Quantity limitations		(10) Vessel stowage requirements	
							Exceptions	Non-bulk packaging	Bulk packaging	Passenger aircraft or railcar	Cargo aircraft only	Vessel stowage	Other stowage provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
				II	DANGEROUS WHEN WET, SPONTANEOUSLY COMBUSTIBLE.	A19, B108	None	212	242	15 kg	50 kg	A	
				III	DANGEROUS WHEN WET, SPONTANEOUSLY COMBUSTIBLE.	B108	None	213	242	25 kg	100 kg	A	
	Zinc resinate	4.1	UN2714	III	FLAMMABLE SOLID	A1	151	213	240	25 kg	100 kg	A	
	Zinc selenate, see Selenates or Selenites												
	Zinc selenite, see Selenates or Selenites												
	Zinc silicofluoride see Zinc fluorosilicate												
	Zirconium, dry, coiled wire, finished metal sheets, strip (thinner than 254 microns but not thinner than 18 microns)	4.1	UN2858	III	FLAMMABLE SOLID	A1	151	213	240	25 kg	100 kg	A	
	Zirconium, dry, finished sheets, strip or coiled wire	4.2	UN2009	III	SPONTANEOUSLY COMBUSTIBLE.	A1, A19	None	213	240	25 kg	100 kg	D	
	Zirconium hydride	4.1	UN1437	II	FLAMMABLE SOLID	A19, A20, N34	None	212	240	15 kg	50 kg	E	
	Zirconium nitrate	5.1	UN2728	III	OXIDIZER	A1, A29	152	213	240	25 kg	100 kg	A	
	Zirconium picramate, dry or wetted with less than 20 percent water, by mass	1.3C	UN0236	II	EXPLOSIVE 1.3C		None	62	None	Forbidden	Forbidden	B	1E, 5E
	Zirconium picramate, wetted with not less than 20 percent water, by mass	4.1	UN1517	I	FLAMMABLE SOLID	23, N41	None	211	None	1 kg	15 kg	D	28, 36
	Zirconium powder, dry	4.2	UN2008	I	SPONTANEOUSLY COMBUSTIBLE.		None	211	242	Forbidden	Forbidden	D	
				II	SPONTANEOUSLY COMBUSTIBLE.	A19, A20, N5, N34	None	212	241	15 kg	50 kg	D	
				III	SPONTANEOUSLY COMBUSTIBLE.		None	213	241	25 kg	100 kg	D	
	Zirconium powder, wetted with not less than 25 percent water (a visible excess of water must be present) (a) mechanically produced, particle size less than 53 microns, (b) chemically produced particle size less than 840 microns	4.1	UN1358	II	FLAMMABLE SOLID	A19, A20, N34	None	212	241	15 kg	50 kg	E	
	Zirconium scrap	4.2	UN1932	III	SPONTANEOUSLY COMBUSTIBLE.	N34	None	213	240	Forbidden	Forbidden	D	
D	Zirconium sulfate	8	NA9163	III	CORROSIVE	N34	None	213	240	50 kg	No limit	A	
	Zirconium suspended in a liquid	3	UN1308	I	FLAMMABLE LIQUID		None	201	243	Forbidden	Forbidden	B	
				II	FLAMMABLE LIQUID		None	202	242	5 L	60 L	B	
				III	FLAMMABLE LIQUID	B1	150	203	242	60 L	220 L	B	
	Zirconium tetrachloride	8	UN2503	III	CORROSIVE		154	213	240	25 kg	100 kg	A	

BILLING CODE 4910-60-F

12. In Appendix B to § 172 101, two notes are added to the notes preceding the List of Marine Pollutants to read as follows:

Appendix B to § 172.101—List of Marine Pollutants

* * * * *

4. If a material not listed in this appendix meets the criteria for a marine pollutant, as provided in the General Introduction of the IMDG Code, Guidelines for the Identification of Harmful Substances in Packaged Form, the material may be transported as a marine pollutant in accordance with the applicable requirements of this subchapter.

5 If approved by the Associate Administrator for Hazardous Materials Safety, a material listed in this appendix which does not meet the criteria for a marine pollutant, as provided in the General Introduction of the IMDG Code, Guidelines for the Identification of Harmful Substances in Packaged Form, is excepted from the requirements of this subchapter as a marine pollutant.

* * * * *

13. In addition, in Appendix B to § 172.101, the List of Marine Pollutants is amended by removing the entry "Ammonium arsenate" and adding the following entries to the List of Marine Pollutants in appropriate alphabetical order to read as follows:

Appendix B to § 172.101—List of Marine Pollutants

* * * * *

S M P.—(1)	Marine pollutant—(2)
[ADD]	
* * * * *	
	Acetal.
	Alkyl (C12–C14) dimethylamine
	Alkyl (C7–C9) nitrates.
	n-Amylbenzene.
	Benomyl.
	Bromoacetone.
	1-Butanethiol.
	n-Butyl butyrate.
	Carbendazim.
	Chloroacetone, stabilized.
	2-Chloro-6-nitrotoluene.
	alpha-Chloropropylene.
	Copper arsenate.
	Copper chloride (solution).
	Copper metal powder.
	Cupric sulfate
PP	1,5,9-Cyclododecatriene.
	Decyloxytetrahydrothiophene dioxide.
PP	Diethylbenzenes (mixed isomers).
	Diisopropylnaphthalene.
	Dimethyl glyoxal (butanedione).
	Dimethyl sulphide.
	4,4'-Diaminodiphenylmethane.
	1,4-Di-tert-butylbenzene.
	Dinoseb acetate.
	Dodecyl diphenyl oxide disulphonate.
	Dodecyl hydroxypropyl sulfide.
	1-Dodecylamine.
	Epibromohydrin.
	Epichlorohydrin.
	Esfenvalerate.
	Ethyl mercaptan.
	1-Ethyl-2-methylbenzene.
	2-Ethylhexyl nitrate.
	Fenbutatin oxide.
	n-Heptylbenzene.
	n-Hexylbenzene.
	Iron oxide, spent.
	Isobenzan.
	Isobutyl propionate.
	Isobutyl isobutyrate.
	Isobutyl butyrate.
	Isobutylbenzene.
	Isopropyltoluene.
	1-Methyl-2-ethylbenzene.
	3-Methylpyradine.
	Mononitrobenzene (nitro benzene).
	Nitrotoluenes (o-: m-: p-).
	Oleylamine
	n-Pentylbenzene.
	d-Phenothrin.
	Propachlor.
	n-Propylbenzene.
	Propanethiols.
	Quizalofop.
	Quizalofop-p-ethyl.
	Tetrachlorvinphos.
	Tetramethrin.
	Tetramethylbenzenes.
	Trisopropylated phenyl phosphates.
	1,2,3-Trimethylbenzene.
	1,2,4-Trimethylbenzene.
	1,3,5-Trimethylbenzene.
* * * * *	

14. In § 172.102, in paragraph (c)(1), Special Provisions 25 and 41 are removed, Special Provisions 16 and 23 are revised, and Special Provisions 24, 26, 32, 34 through 37, 39, 40, 43 through 52, and 54 are added; in paragraph (c)(2), Special Provision A33 is removed; and in paragraph (c)(3) Special Provisions B53 and B110 are revised to read as follows:

§ 172.102 Special provisions.

* * * * *

(c) * * *

(1) * * *

* * * * *

16. This description applies to smokeless powder and other solid propellants that are used as powder for small arms and have been classed as Division 1.3 and 4.1 in accordance with § 173.56 of this subchapter.

* * * * *

23 This material may be transported under the provisions of Division 4.1 only if it is so packed that the percentage of diluent will not fall below that stated in the shipping description at any time during transport

24. Alcoholic beverages containing more than 70 percent alcohol by volume must be transported as materials in Packing Group II. Alcoholic beverages containing more than 24 percent but not more than 70 percent alcohol by volume must be transported as materials in Packing Group III.

* * * * *

26. This entry does not include ammonium permanganate, the transport of which is prohibited except when approved by the Associate Administrator for Hazardous Materials Safety.

* * * * *

32. These beads are made from polystyrene, poly(methyl methacrylate) or other polymeric material.

* * * * *

34. The commercial grade of calcium nitrate fertilizer, when consisting mainly of a double salt (calcium nitrate and ammonium nitrate) containing not more than 10 percent ammonium nitrate and at least 12 percent water of crystallization, is not subject to the requirements of this subchapter

35. Antimony sulphides and oxides which do not contain more than 0.5 percent of arsenic calculated on the total mass are not subject to the requirements of this subchapter.

36. The maximum net quantity per package is 5 liters (1 gallon) or 5 kg (11 pounds).

37. Unless it can be demonstrated by testing that the sensitivity of the substance in its frozen state is no greater than in its liquid state, the substance must remain liquid during normal transport conditions. It must not freeze at temperatures above −15°C (5°F).

* * * * *

39. This substance may be carried under provisions other than those of Class 1 only if it is so packed that the percentage of water will not fall below that stated at any time during transport. When phlegmatized with water and inorganic inert material, the content of urea nitrate must not exceed 75 percent by mass and the mixture should not be capable of being detonated by test 1(a)(i) or test 1(a) (ii) in the UN Recommendations Tests and Criteria.

40. Polyester resin kits consist of two components: a base material (Class 3, Packing Group II or III) and an activator (organic peroxide), each separately packed in an inner packaging. The organic peroxide must be type D, E, or F, not requiring temperature control, and be limited to a quantity of 125 ml

(4.22 ounces) per inner packaging if liquid, and 500 g (1 pound) if solid. The components may be placed in the same outer packaging provided they will not interact dangerously in the event of leakage. Packing group will be II or III, according to the criteria for Class 3, applied to the base material.

* * * * *

43. The nitrogen content of the nitrocellulose must not exceed 11 5 percent. Each single filter sheet must be packed between sheets of glazed paper. The portion of glazed paper between the filter sheets must not be less than 65 percent, by mass. The membrane filters/paper arrangement must not be liable to propagate a detonation as tested by one of the tests described in the UN Recommendations, Tests and Criteria, Part I, Test series 1 (a).

44. The formulation must be prepared so that it remains homogeneous and does not separate during transport. Formulations with low nitrocellulose contents and neither showing dangerous properties when tested for their ability to detonate, deflagrate or explode when heated under defined confinement by the appropriate test methods and criteria in the UN Recommendations, Tests and Criteria, nor being a flammable solid when tested in accordance with Appendix E to Part 173 of this subchapter (chips, if necessary, crushed and sieved to a particle size of less than 1.25 mm) are not subject to this subchapter.

45. Temperature should be maintained between 18°C (64.4°F) and 40°C (104°F). Tanks containing solidified methacrylic acid must not be reheated during transport.

46. This material must be packed in accordance with packing method OP6B (see § 173.225 of this subchapter). During transport, it must be protected from direct sunshine and stored (or kept) in a cool and well-ventilated place, away from all sources of heat.

47. Mixtures of solids which are not subject to this subchapter and flammable liquids may be transported under this entry without first applying the classification criteria of Division 4.1, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. Each packaging must correspond to a design type that has passed a leakproofness test at the Packing Group II level.

48. Mixtures of solids which are not subject to this subchapter and toxic liquids may be transported under this entry without first applying the classification criteria of Division 6.1, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. Each packaging must correspond to a design type that has passed a leakproofness test at the Packing Group II level. This entry may not be used for solids containing a Packing Group I liquid.

49. Mixtures of solids which are not subject to this subchapter and corrosive liquids may be transported under this entry without first applying the classification criteria of Class 8, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. Each packaging must correspond to a design type that has passed a leakproofness test at the Packing Group II level.

50. Cases, cartridge, empty with primer which are made of metallic or plastic casings and meeting the classification criteria of Division 1.4 are not regulated for domestic transportation.

51. This description applies to items previously described as "Toy propellant devices, Class C" and includes reloadable kits.

52. Ammonium nitrate fertilizers may not meet the definition and criteria of Class 1 (explosive) material (see § 173.150 of this subchapter).

* * * * *

54. Maneb or maneb preparations not meeting the definition of Division 4.3 or any other hazard class are not subject to the requirements of this subchapter when transported by motor vehicle, rail car, or aircraft.

* * * * *

(c) * * *

(3) * * *

* * * * *

B53 Except for IBCs, packagings must be made of either aluminum or steel.

* * * * *

B110 This material also may be packaged in IBCs authorized in § 173.242(d) of this subchapter.

* * * * *

15. In § 172.203, the list of shipping names in paragraph (k)(3) is revised and new paragraphs (l)(3) and (o) are added to read as follows:

§ 172.203 Additional description requirements.

* * * * *

(k) * * *

(3) * * *

Alcoholates solution, n o s., *in alcohol*
Alcohols, toxic, n.o.s.
Aldehydes, toxic, n.o s
Alkali metal alcoholates, self-heating, corrosive, n.o.s.
Alkaline earth metal alcoholates, n o s
Amines, flammable, corrosive, n o s *or* Polyamines, flammable, corrosive, n o.s.
Amines, liquid, corrosive, flammable, n.o.s. *or* Polyamines, liquid, corrosive, flammable, n.o.s.
Amines, liquid, corrosive, n o s. *or* Polyamines, liquid, corrosive, n.o s.
Amines, solid, corrosive, n o s *or* Polyamines, solid, corrosive, n.o.s.
Articles, explosive, n.o s.
Caustic alkali liquids, n.o.s.
Charges, propelling
Chloroformates, toxic, corrosive, n.o.s.
Combustible liquid, n.o.s.
Components, explosive train, n o.s.
Compounds, cleaning liquid, *corrosive, flammable, toxic*
Compounds, tree *or* weed killing, liquid, *flammable, corrosive, toxic*
Compressed *or* Liquefied gases, flammable, n o s.
Compressed *or* Liquefied gases, n o s.
Compressed *or* Liquefied gases, oxidizing, n.o.s.
Compressed *or* Liquefied gases, toxic, flammable, n.o.s.
Compressed *or* Liquefied gases, toxic, n.o.s
Contrivances, water-activated
Corrosive, liquid, acidic, inorganic *or* organic, n.o.s.
Corrosive, liquid, basic, inorganic *or* organic, n.o.s
Corrosive liquids, flammable, n.o.s.
Corrosive liquids, n.o.s.
Corrosive liquids, oxidizing, n.o.s.
Corrosive liquids, toxic, n.o.s.
Corrosive liquids, water-reactive, n.o.s.
Corrosive, solid, acidic, inorganic *or* organic, n o.s.
Corrosive, solid, basic, inorganic *or* organic, n o s.
Corrosive solids, flammable, n.o s.
Corrosive solids, n.o.s.
Corrosive solids, oxidizing, n o s.
Corrosive solids, self-heating, n o.s.
Corrosive solids, toxic, n.o.s.
Corrosive solids, water-reactive, n.o s.
Disinfectants, liquid, corrosive, n.o.s.
Disinfectants, liquid, toxic, n o s.
Disinfectants, solids, toxic, n o s.
Dispersant gas, n.o.s.
Dyes, liquid, corrosive, n.o.s. *or* Dye intermediates, liquid, corrosive, n.o s.
Dyes, liquid, toxic, n.o.s. *or* Dye intermediates, liquid, toxic, n o.s.
Dyes, solid, corrosive, n.o.s *or* Dye intermediates, solid, corrosive, n o.s.
Dyes, solid, toxic, n o.s *or* Dye intermediates, solid, toxic, n.o.s.
Environmentally hazardous substances, liquid *or* solid, n.o s.
Flammable gases, solid, corrosive, n o s
Flammable liquids, corrosive, n.o.s.
Flammable liquids, n.o.s.
Flammable liquids, toxic, corrosive, n o.s.
Flammable liquids, toxic, n.o s.
Flammable solids, corrosive, organic *or* inorganic, n o.s.
Flammable solids, organic, molten, n o.s.
Flammable solids, organic *or* inorganic, n.o s.
Flammable solids, toxic, organic *or* inorganic, n.o s.
Halogenated irritating liquids, n o s.
Hazardous waste, liquid *or* solid, n o.s
Hydrocarbons, liquid, n o.s.

Infectious substances, affecting animals
Infectious substances, affecting humans
Insecticide gases, n.o s.
Insecticide gases, toxic, n o.s
Isocyanates, flammable, toxic, n.o s. *or* Isocyanates solutions, flammable, toxic, n o s
Isocyanates, toxic, flammable, n.o s. *or* Isocyanates solutions, toxic, flammable, n o s.
Medicines, liquid, flammable, toxic, n.o s.
Medicines, liquid, toxic, n o.s.
Medicine, solid, toxic, n o s.
Metal powder, self-heating, n o.s.
Metal salts of organic compounds, flammable, n.o.s.
Metallic substance, water-reactive, n.o.s.
Metallic substance, water-reactive, self-heating, n o s.
Nitriles, flammable, toxic, n o s
Nitriles, toxic, flammable, n.o s.
Nitriles, toxic, n o.s
Organic peroxide type B, liquid
Organic peroxide type B, liquid, temperature controlled
Organic peroxide type B, solid
Organic peroxide type B, solid, temperature controlled
Organic peroxide type C, liquid
Organic peroxide type C, liquid, temperature controlled
Organic peroxide type C, solid
Organic peroxide type C, solid, temperature controlled
Organic peroxide type D, liquid
Organic peroxide type D, liquid, temperature controlled
Organic peroxide type D, solid
Organic peroxide type D, solid, temperature controlled
Organic peroxide type E, liquid
Organic peroxide type E, liquid, temperature controlled
Organic peroxide type E, solid
Organic peroxide type E, solid, temperature controlled
Organic peroxide type F, liquid
Organic peroxide type F, liquid, temperature controlled
Organic peroxide type F, solid
Organic peroxide type F, solid, temperature controlled
Organometallic compound, toxic, n.o.s.
Organometallic compound dispersion, water-reactive, flammable, n o.s.
Organometallic compound solution, water-reactive, flammable, n.o.s.
Other regulated substances, liquid, n.o.s
Other regulated substances, solid, n.o.s.
Oxidizing liquid, corrosive, n.o.s.
Oxidizing liquid, n.o.s.
Oxidizing liquid, toxic, n.o.s.
Oxidizing solid, corrosive, n.o.s.
Oxidizing solid, flammable, n o.s.
Oxidizing solid, n.o.s
Oxidizing solid, self-heating, n.o.s.
Oxidizing solid, toxic, n.o s
Oxidizing solid, water-reactive, n.o.s
Pesticides, liquid, flammable, toxic, n o s.
Pesticides, liquid, toxic, flammable, n o.s
Pesticides, liquid, toxic, n.o s.
Pesticides, solid, toxic, n.o.s.
Propellant, liquid
Propellant, solid
Pyrophoric liquids, organic *or* inorganic, n o.s
Pyrophoric metals, n o s *or* Pyrophoric alloys, n o.s
Pyrophoric organometallic compound, n o s.
Pyrophoric solids, organic *or* inorganic, n o.s.
Refrigerant gases, n o s.
Samples, explosive (*other than initiating explosives*)
Self-heating liquid, corrosive, inorganic, n.o s
Self-heating liquid, corrosive, organic, n.o s.
Self-heating liquid, inorganic, n.o s.
Self-heating liquid, organic, n.o.s.
Self-heating liquid, toxic, inorganic, n.o.s.
Self-heating liquid, toxic, organic, n.o.s.
Self-heating solid, corrosive, inorganic, n.o.s.
Self-heating solid, corrosive, organic, n.o.s.
Self-heating solid, organic or inorganic, n.o.s.
Self-heating solid, oxidizing, n.o s.
Self-heating solid, toxic, organic or inorganic, n.o.s.
Self-reactive liquid type B
Self-reactive liquid type B, temperature controlled
Self-reactive liquid type C
Self-reactive liquid type C, temperature controlled
Self-reactive liquid type D
Self-reactive liquid type D, temperature controlled
Self-reactive liquid type E
Self-reactive liquid type E, temperature controlled
Self-reactive liquid type F
Self-reactive liquid type F, temperature controlled
Self-reactive solid type B
Self-reactive solid type B, temperature controlled
Self-reactive solid type C
Self-reactive solid type C, temperature controlled
Self-reactive solid type D
Self-reactive solid type D, temperature controlled
Self-reactive solid type E
Self-reactive solid type E, temperature controlled
Self-reactive solid type F
Self-reactive solid type F, temperature controlled
Solids containing corrosive liquid, n o.s.
Solids containing flammable liquid, n.o.s.
Solids containing toxic liquid, n.o s.
Substances, explosive, n.o.s.
Substances, explosive, very insensitive (substances, EVI), n.o.s.
Tear gas substances, liquid *or* solid, n.o s.
Toxic liquids, corrosive, organic *or* inorganic, n o.s.
Toxic liquids, flammable, organic *or* inorganic, n.o.s.
Toxic liquids, organic *or* inorganic, n.o.s.
Toxic liquids, oxidizing, n o s.
Toxic liquids, water-reactive, n.o s.
Toxic solids, corrosive, organic *or* inorganic, n.o.s.
Toxic solids, flammable, organic *or* inorganic, n.o.s.
Toxic solids, organic *or* inorganic, n o s
Toxic solids, oxidizing, n.o s
Toxic solids, self-heating, n.o s
Toxic solids, water-reactive, n o s.
Water-reactive, liquid, corrosive, n o s
Water-reactive, liquid, n o s.
Water-reactive, liquid, toxic, n o s
Water-reactive, solid, corrosive, n o.s
Water-reactive, solid, flammable, n.o s.
Water-reactive, solid, n o s.
Water-reactive, solid, oxidizing, n o s
Water-reactive, solid, self-heating, n o s
Water-reactive, solid, toxic, n o s

* * * * *

(l) * * *

(3) Except for transportation by vessel, marine pollutants subject to the provisions of 49 CFR 130 11 are excepted from the requirements of paragraph (l) of this section if a phrase indicating the material is an oil is placed in association with the basic description.

* * * * *

(o) *Organic peroxides and self-reactive materials.* The description on a shipping paper for a Division 4 1 (self-reactive) material or a Division 5 2 (organic peroxide) material must include the following additional information, as appropriate·

(1) If notification or competent authority approval is required, the shipping paper must contain a statement of approval of the classification and conditions of transport.

(2) For Division 4.1 (self-reactive) and Division 5.2 (organic peroxide) materials that require temperature control during transport, the control and emergency temperature must be included on the shipping paper.

(3) The word "SAMPLE" must be included in association with the basic description when a sample of a Division 4.1 (self-reactive) material (see § 173.224(c)(4) of this subchapter) or Division 5.2 (organic peroxide) material (see § 173.225(c)(4) of this subchapter) is offered for transportation or transported

§ 172.203 [Amended]

16. In addition, in § 172.203, in paragraph (m)(1), the wording "Poison" is revised to read "Poison or Toxic".

§ 172.204 [Amended]

17. In § 172.204, in paragraph (a)(2), the following changes are made·

a. The wording "packed, marked and labeled," is revised to read "packed, marked and labeled/placarded,".

b. The wording "by [*]" and footnote * at the end of paragraph (a)(2) are removed.

§ 172.320 [Amended]

18. In § 172.320, in paragraph (b), the wording "or identifying information" is revised to read "or identifying information, such as a product code".

19. In § 172.325, in paragraph (c), the illustration at the end of the paragraph is revised to read as follows:

§ 172.325 Elevated temperature materials.

* * * * *

(c) * * *

BILLING CODE 4910-60-P

HOT

3257

BILLING CODE 4910-60-C

20. In § 172.400a, new paragraphs (c) and (d) are added to read as follows.

§ 172 400a Exceptions from labeling

* * * * *

(c) Notwithstanding the provisions of § 172 402(a), a subsidiary hazard label is not required on a package containing a Class 8 (corrosive) material which has a subsidiary hazard of Division 6 1 (poisonous) if the toxicity of the material is based solely on the corrosive destruction of tissue rather than systemic poisoning.

(d) For Division 6.1 Packing Group III materials, a POISON label may be used in place of a KEEP AWAY FROM FOOD label.

21 In § 172 402, paragraph (a)(1) is revised and new paragraphs (f) and (g) are added to read as follows:

§ 172 402 Additional labeling requirements

(a) * * *

(1) Shall be labeled with primary and subsidiary hazard labels as specified in Column 6 of the § 172.101 Table (unless excepted in paragraph (a)(2) of this section); and

* * * * *

(f) *Division 2.2 materials.* In addition to the label specified in Column 6 of the § 172.101 Table, each package of Division 2.2 material that also meets the definition for an oxidizing gas (see § 171.8 of this subchapter) must be labeled OXIDIZER.

(g) *Division 2.3 materials.* In addition to the label specified in Column 6 of the § 172.101 Table, each package of Division 2.3 material that also meets the definition for:

(1) Division 2.1, must be labeled Flammable Gas,

(2) Division 5.1, must be labeled Oxidizer; and

(3) Class 8, must be labeled Corrosive.

§ 172.402 [Amended]

22. In addition, in § 172.402, the following changes are made:

a. In paragraph (a)(2), in the text preceding the table, the wording "For other than Class 2 or Class 1 materials (for subsidiary labeling requirements for Class 1 materials see paragraph (e) of this section)" are revised to read "For other than Class 1 or Class 2 materials (for subsidiary labeling requirements for Class 1 or Class 2 materials see paragraph (e) or paragraphs (f) and (g), respectively, of this section)"

b. In the paragraph (a)(2) table, for the entry "III", the footnote reference "N" is removed and replaced with an "X" each place it appears, and footnote N is removed.

c. In the paragraph (a)(2) table, in the column "8", for the entry "III", the footnote reference "***" is removed and replaced with "X", and footnote ** is removed and reserved

d. In paragraph (a)(2), in the footnotes following the table, the footnote identified as "*" is revised to read "If the flash point of a material is at or above 38°C (100°F), required for transport by air or vessel only.".

§ 172.411 [Amended]

23. In § 172 411, in the third sentence of paragraph (d), the wording "measuring at least 12.7 mm (0 5 inches) in height" is removed

24. In § 172.416, a new sentence is added as the last sentence of paragraph (b) to read as follows:

§ 172.416 POISON GAS label

* * * * *

(b) * * * The words "TOXIC GAS" may be used in lieu of the words "POISON GAS".

25. In § 172.430, a new sentence is added as the last sentence of paragraph (b) to read as follows:

§ 172.430 POISON label

* * * * *

(b) * * * The word "TOXIC" may be used in lieu of the word "POISON".

26 In § 172 540, a new sentence is added to the end of paragraph (b) to read as follows:

§ 172.540 POISON GAS placard

* * * * *

(b) * * * The words "TOXIC GAS" may be used in lieu of the words "POISON GAS"

§ 172.547 [Amended]

27. In § 172.547, in paragraph (b), the wording "25 mm (0 98 inches)" is removed and replaced with "12 mm (0.5 inch)".

28. In § 172.554, a new sentence is added to the end of paragraph (b) to read as follows:

§ 172.554 POISON placard

* * * * *

(b) * * * The word "TOXIC" may be used in lieu of the word "POISON".

PART 173—SHIPPERS—GENERAL REQUIREMENTS FOR SHIPMENTS AND PACKAGINGS

29. The authority citation for Part 173 continues to read as follows:

Authority: 49 App U S.C. 5101–5127, 49 CFR 1.53.

30. In § 173.2a, in the paragraph (b) table, two notes are added at the end of the table following the footnotes to read as follows:

§ 173.2a Classification of a material having more than one hazard

* * * * *

(b) * * *

Precedence of Hazard Table

* * * * *

Note 1: The most stringent packing group assigned to a hazard of the material takes precedence over other packing groups, for example, a material meeting Class 3 PG II and Division 6 1 PG I (oral toxicity) is classified as Class 3 PG I.

Note 2: A material which meets the definition of Class 8 and has an inhalation toxicity by dusts and mists which meets criteria for Packing Group I specified in § 173 133(a)(1) must be classed as Division 6.1 if the oral or dermal toxicity meets criteria for Packing Group I or II. If the oral or dermal toxicity meets criteria for Packing Group III or less, the material must be classed as Class 8.

* * * * *

§ 173.2a [Amended]

31. In addition, in the paragraph (b) table, the following changes are made

a. At the intersection of the line entry "4.2 II" and the column entry "8, I liquid", the wording "(3)" is revised to read "8".

b. At the intersection of the line entry "4.2 II" and the column entry "8, II liquid", the wording "(3)" is revised to read "4.2".

c. At the intersection of the line entry "4.2 II" and the column entry "8, III liquid", the wording "(3)" is revised to read "4 2".

d. At the intersection of the line entry "4.2 III" and the column entry "8, I liquid", the wording "(3)" is revised to read "8".

e At the intersection of the line entry "4.2 III" and the column entry "8, II liquid", the wording "(3)" is revised to read "8".

f. At the intersection of the line entry "4.2 III" and the column entry "8, III liquid", the wording "(3)" is revised to read "4.2".

32. In § 173.9, a new paragraph (e) is added to read as follows:

§ 173.9 Cars, truck bodies, freight containers, or trailers containing lading which has been fumigated or treated with Class 3, Division 2.1, 2.3, or 6 1 materials

* * * * *

(e) See § 176.76(i) of this subchapter for requirements for fumigated transport units on vessels.

§ 173.21 [Amended]

33. In § 173.21, in the first sentence of paragraph (f)(2), the wording "Columns 4a and 4b," is revised to read "Columns 5 and 6,"

34. In § 173.22, paragraphs (a)(2)(iii) and (a)(2)(iv) are redesignated as paragraphs (a)(2)(iv) and (a)(2)(v), respectively, a new paragraph (a)(2)(iii) is added, and paragraphs (a)(3)(i) and (a)(4) are revised, to read as follows:

§ 173.22 Shipper's responsibility

(a) * * *

(2) * * *

(iii) National or international regulations based on the UN Recommendations on the Transport of Dangerous Goods, as authorized in § 173.24(d)(2);

* * * * *

(3) * * *

(i) Except for the marking on the bottom of a metal or plastic drum with a capacity over 100 liters which has been reconditioned, remanufactured or otherwise converted, the manufacturer's certification, specification, approval, or exemption marking (see §§ 173.2 and 179.1 of this subchapter); or

* * * * *

(4) For a DOT specification or UN standard packaging subject to the requirements of part 178 of this subchapter, a person shall perform all functions necessary to bring that package into compliance with part 178 of this subchapter, as identified by the packaging manufacturer or subsequent distributor, in accordance with § 178.2 of this subchapter.

* * * * *

35. In § 173.24, paragraph (d) is revised to read as follows:

§ 173.24 General requirements for packagings and packages.

* * * * *

(d) *Specification packagings and UN standard packagings manufactured outside the U.S.*—(1) *Specification packagings.* A specification packaging, including a UN standard packaging manufactured in the United States, must conform in all details to the applicable specification or standard in part 178 or part 179 of this subchapter.

(2) *UN standard packagings manufactured outside the United States.* A UN standard packaging manufactured outside the United States, in accordance with national or international regulations based on the UN Recommendations on the Transport of Dangerous Goods, may be imported and used as an authorized packaging under the provisions of paragraph (c)(1) of this section, subject to the following conditions and limitations:

(i) The packaging fully conforms to applicable provisions in the UN Recommendations on the Transport of Dangerous Goods and the requirements of this subpart, including reuse provisions,

(ii) The packaging is capable of passing the prescribed tests in part 178 of this subchapter applicable to that standard; and

(iii) The competent authority of the country of manufacture provides reciprocal treatment for UN standard packagings manufactured in the U.S.

* * * * *

§ 173.24 [Amended]

36. In addition, in § 173.24, the following changes are made:

a. In paragraph (c)(1), the wording "(including U.N. standard packagings)" is revised to read "(including U.N. standard packagings manufactured in the United States)".

b. In paragraph (e)(4)(ii), the wording "flammable or poisonous gases;" is revised to read "flammable, poisonous, or asphyxiant gases;".

37. In § 173.25, paragraph (a) introductory text is revised and a new paragraph (b) is added to read as follows:

§ 173.25 Authorized packages and overpacks

(a) Authorized packages containing hazardous materials may be offered for transportation in an overpack as defined in § 171.8 of this subchapter, if all of the following conditions are met:

* * * * *

(b) Shrink-wrapped or stretch-wrapped trays may be used as outer packagings for inner packagings prepared in accordance with the limited quantity provisions or consumer commodity provisions of this subchapter, provided that the complete package is capable of meeting performance standards at the Packing Group III performance level. Each package may not exceed 20 kg (44 lbs) gross weight.

* * * * *

38. In § 173.28, paragraph (b)(4) is revised and new paragraphs (b)(7) and (c)(4) are added to read as follows:

§ 173.28 Reuse, reconditioning and remanufacture of packagings.

* * * * *

(b) * * *

(4) Metal and plastic drums and jerricans used as single packagings or the outer packagings of composite packagings are authorized for reuse only when they are marked in a permanent manner (e.g., embossed) in millimeters with the nominal (for metal packagings) or minimum (for plastic packagings) thickness of the packaging material, as required by § 178.503(a)(9) of this subchapter, and conform to the following minimum thickness criteria:

Minimum thickness of packaging material	Maximum capacity not over	
	Metal drum or jerrican	Plastic drum or jerrican
20 L	0.63 mm (0.025 inch)	1.1 mm (0.043 inch)
30 L	0.73 mm (0.029 inch)	1.1 mm (0.043 inch)
40 L	0.73 mm (0.029 inch)	1.8 mm (0.071 inch)
60 L	0.92 mm (0.036 inch)	1.8 mm (0.071 inch)
120 L	0.92 mm (0.036 inch)	2.2 mm (0.087 inch)
220 L	[1] 0.92 mm (0.036 inch)	2.2 mm (0.087 inch)
450 L	1.77 mm (0.070 inch)	5.0 mm (0.197 inch)

[1] Metal drums or jerricans constructed with a minimum thickness of 0.80 mm (0.03 inch) body and 1.10 mm (0.043 inch) heads are authorized.

* * * * *

(7) Notwithstanding the provisions of paragraph (b)(2) of this section, a packaging otherwise authorized for reuse may be reused without being subjected to the leakproofness test with air provided the packaging:

(i) Is refilled with a material compatible with the previous lading;

(ii) Is offered for transportation or transported by a private carrier, contract carrier, or by a common carrier in a transport vehicle or freight container used exclusively for such service, within a distribution chain controlled by the offeror; and

(iii) Is constructed of—

(A) stainless steel, monel or nickel with a thickness not less than one and one-half times the minimum thickness prescribed in paragraph (b)(4) of this section;

(B) plastic, provided the packaging is not refilled for reuse on a date more than five years from the date of manufacture marked on the packaging in accordance with § 178.503(a)(6) of this subchapter; or

(C) another material or thickness, if approved by the Associate Administrator for Hazardous Materials Safety for reuse without retesting in accordance with the provisions of this paragraph.

(c) * * *

(4) The markings applied by the reconditioner may be different from those applied by the manufacturer at the time of original manufacture, but may not identify a greater performance capability than that for which the original design type had been tested (for example, the reconditioner may mark a drum which was originally marked as 1A1/Y1.8 as 1A1/Y1.2 or 1A1/Z2 0).

* * * * *

§ 173.28 [Amended]

39. In addition, in § 173.28, the following changes are made:

a. In paragraph (c)(1)(i), the wording "any coatings" is revised to read "any external coatings".

b. In paragraph (c)(3), in the first sentence, the reference "§ 178.503(c)" is revised to read "§ 178.503 (c) and (d)".

§ 173.33 [Amended]

40. In § 173.33, in paragraph (c)(5), the wording "Division 6.1" is revised to read "Division 6.1, Packing Group I or II".

§ 173.52 [Amended]

41. In § 173.52, in paragraph (b), Table 1, the following changes are made:

a. In the second entry, the wording "Some articles, such as detonators for blasting, detonator assemblies for blasting and primers, cap-type, are included, even though they do not contain primary explosives." is added at the end of the entry following the wording "features.".

b In the fifth and sixth entries, the wording ", gel" is added immediately following the wording "flammable liquid" and immediately preceding the wording "or hypergolic liquid".

42. In § 173.59, the following definitions are added in appropriate alphabetical order to read as follows:

§ 173 59 Descriptions of terms for explosives

* * * * *

Charges, propelling for cannon. Articles consisting of a propellant charge in any physical form, with or without a casing, for use in a cannon.

* * * * *

Propellant, liquid. Substances consisting of a deflagrating liquid explosive, used for propulsion.

Propellant, solid. Substances consisting of a deflagrating solid explosive, used for propulsion.

* * * * *

§ 173.59 [Amended]

43. In addition, in § 173.59, the following changes are made:

a. For the description "*Charges, propelling*", the wording "or for reducing drag for projectiles" is added immediately following "in cannon".

b. For the description "*Powder, smokeless*", in the first sentence, the word "generally" is removed, and the wording "and *charges propelling for cannon*" is added at the end of the last sentence, immediately following the wording "*charges, propelling*".

c. For the description "*Propellants*", the wording "or for reducing the drag of projectiles" is added at the end of the sentence immediately following the word "propulsion".

44. In § 173.60, paragraph (b)(15) is added to read as follows:

§ 173.60 General packaging requirements for explosives

* * * * *

(b) * * *

(15) Plastic packagings must not be liable to generate or accumulate sufficient static electricity that a discharge could cause the packaged explosive to ignite or the packaged article to function.

45. In § 173.62, paragraph (a) is revised, a new third sentence is added after the second sentence in paragraph (b), the Explosives Table in paragraph (b) is amended by adding or removing entries in appropriate alpha-numerical sequence, and the Table of Packing Methods in paragraph (c) and paragraph (d) are revised to read as follows:

§ 173.62 Specific packaging requirements

(a) Except as provided in paragraph (e) of this section, when the § 172.101 Table specifies that an explosive must be packaged in accordance with this section, only non-bulk packagings which conform to the provisions of paragraphs (b), (c), and (d) of this section, and the applicable requirements in §§ 173.60 and 173.61 may be used, unless otherwise approved by the Associate Administrator for Hazardous Materials Safety. (b) * * * However, the packing method authorized under E–103 may be used in place of the packing method listed in the Explosives Table. * * *

EXPLOSIVES TABLE

Identification No.	Packing methods
[Remove]:	
UN0075	US001.
UN0143	US001.
UN0273	E–158(a), (b), (c).
UN0274	E–158(a), (b), (c).
NA0273	E–22(a), (b), (c).
NA0274	E–22(a), (b), (c).
[Add]:	
UN0075	E–159.
UN0143	E–159.
UN0491	E–158.
UN0492	E–151.
UN0493	E–151.
UN0494	US006.
UN0495	E–159.
UN0496	E–13
UN0497	E–159.
UN0498	E–22.
UN0499	E–22.
NA0276	E–114.
NA0323	E–114
NA0337	E–134.

(c) * * *

TABLE OF PACKING METHODS

Packing method (1)	Inner packaging (2)	Outer packaging (3)	Particular packaging exception/requirement (4)
E–1(a)	Not necessary	Bags: Paper, multiwall, water resistant (5M2) Textile, sift-proof (5L2) Textile, water resistant (5L3) Plastic, woven, sift-proof (5H2) Plastic, woven, water resistant (5H3) Plastic, film (5H4).	

TABLE OF PACKING METHODS—Continued

Packing method (1)	Inner packaging (2)	Outer packaging (3)	Particular packaging exception/requirement (4)
E-1(b)	Bags: Paper, Kraft Plastic Sheets: Plastic	Barrels. Wood, removable head (2C2) Boxes: Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Drums: Steel, removable head (1A2).	
E-2	Receptacles: Metal Paper Plastic Sheets: Plastic Bags: Paper, multiwall, water resistant Woven plastics	Barrels: Wood, removable head (2C2) Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Drums: Fiber (1G) Steel, removable head (1A2) Note: Removable head plastic drums (1H2) are authorized for UN 0219	1 for all entries; 2 for all entries except UN 0402.
E-3	Bags Plastic Rubber Textile Rubberized textile Intermediate: Bags: Plastic Rubber Textile Rubberized textile. Barrels: Wood Receptacles: Plastic	Barrels: Wood, removable head (2C2) Drums: Plastic, removable head (1H2) Steel, removable head (1A2)	3, 4, D1.
E-4(a)	Receptacles: Fiberboard Metal Paper Plastic Rubberized textile	Barrels: Wood, removable head (2C2) Boxes: Steel (4A) Fiberboard (4G) Natural wood, ordinary (4C1) Wood, sift-proof (4C2) Plywood (4D) Reconstituted wood (4F)	
E-4(b)	Optional	Drums: Aluminum, removable head (1B2) Fiber (1G) Steel, removable head (1A2) Note: steel drums (1A2) must be dust tight	
E-5	Bags: Plastic Sheets: Paper, kraft Paper, waxed	Boxes: Fiberboard (4G) Wood, sift-proof (4C2) Plywood (4D) Reconstituted wood (4F)	
E-6(a)(i)	For wetted explosives: Bags: Plastic Rubberized, textile	Barrels: Wood, removable head (2C2) Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Drums: Steel, removable head (1A2) Fiber (1G)	

TABLE OF PACKING METHODS—Continued

Packing method (1)	Inner packaging (2)	Outer packaging (3)	Particular packaging exception/requirement (4)
E-6(a)(ii)	For wetted explosives: Bags: Rubber Textile Rubberized textile Intermediate: Bags: Rubber Rubberized textile Plastics	Barrels. Wood, removable head (2C2) Drums: Steel, removable head (1A2) Fiber (1G)	
E-6(b)	For desensitized explosives: Same as for wetted explosives except that any fiberboard boxes may be used as inner packaging and any textile bags as intermediate packaging	For desensitized explosives: Same as for wetted explosives except that any fiberboard boxes may be used as inner packagings and any textile bags as intermediate packaging	
E-8	Receptacles: Waterproof material Sheets: Waterproof	Barrels: Wood, removable head (2C2) Boxes: Steel (4A) Aluminum (4B) Plastics, solid (4H2) Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Drums: Fiber (1G) Steel, removable head (1A2) Aluminum, removable head (1B2)	D15, D13.
E-9	Bags: Oil-resistant Sheets: Plastic Cans: Metal	Bags: Paper, multiwall water resistant (5M2) Textile, sift-proof (5L2) Textile, water resistant (5L3) Woven plastic, without inner lining or coating (5H1) Woven plastic, sift-proof (5H2) Woven plastic, water resistant (5H3) Plastic film (5H4) Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Drums: Fiber (1G) Steel, removable head (1A2) Note: If bags of 5H2, 5H3, 5H4, or 5M2 are used, no inner packaging necessary	D13.
E-10	Bags: Paper, waxed Plastic Rubberized textile Sheets: Paper, waxed Plastic Rubberized textile	Barrels: Wood, removable head (2C2) Boxes: Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F)	
E-11	Bags: Paper, waxed Plastic Rubberized textile Sheets: Paper, waxed Plastic Textile Rubberized textile	Barrels: Wood, removable head (2C2) Boxes: Wood, ordinary (4C1) Fiberboard (4G) Plywood (4D) Reconstituted wood (4F) Drums: Fiber (1G)	

TABLE OF PACKING METHODS—Continued

Packing method (1)	Inner packaging (2)	Outer packaging (3)	Particular packaging exception/requirement (4)
E-12	Bags: Oil-resistant Sheets: Plastic	Bags: Paper, multiwall, water resistant (5M2) Woven plastic, without inner lining or coating (5H1) Woven plastic, sift-proof (5H2) Woven plastic, water resistant (5H3) Plastic film (5H4) Textile, sift-proof (5L2) Textile, water resistant (5L3) Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B) Plastics, solid (4H2) Drums: Fiber (1G) Steel, removable head (1A2) Aluminum, removable head (1B2) Note: If bags of 5H2 or 5H3 are used, no inner packaging is necessary	D-14.
E-13(a)	For wetted explosives: Bags: Plastic Woven plastics Paper, multiwall, water resistant Sheets: Plastic	Barrels: Wood, removable head (2C2) Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Drums: Fiber (1G)	
E-13(b)	For dry explosives: Bags: Paper Plastic Woven plastics Paper, multiwall, water resistant Boxes: Fiberboard Sheets. Plastic	Barrels: Wood, removable head (2C2) Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Drums: Fiber (1G)	
E-15(a)	Not necessary	Drums: Aluminum, removable head (1B2) Steel, removable head (1A2)	
E-15(b)	Bags Waterproof paper Plastic Rubberized textile Sheets: Plastic Rubberized textile	Barrels: Wood, removable head (2C2) Boxes: Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Fiberboard (4G) Drums: Fiber (1G)	
E-17	Cans: Metal Receptacles: Glass Plastic	Boxes: Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F)	
E-18	Bags: Paper Plastic Sheets Plastic	Barrels: Wood, removable head (2C2) Boxes Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Drums: Fiber (1G) Plywood (1D) Steel, removable head (1A2)	

TABLE OF PACKING METHODS—Continued

Packing method (1)	Inner packaging (2)	Outer packaging (3)	Particular packaging exception/requirement (4)
E-19(a)	Not necessary	Drums: Aluminum, removable head (1B2) Steel, removable head (1A2) Plastic, removable head (1H2)	7.
E-19(b)	Bags: Plastic Sheets: Plastic	Barrels: Wood, removable head (2C2) Boxes: Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Drums: Fiber (1G)	
E-20	Receptacles: Metal Plastic Wood Fiberboard	Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B) Plastics, solid (4H2) Drums: Fiber (1G)	55.
E-21	Boxes: Fiberboard Cans: Metal Receptacles: Waterproof paper Plastic Note: Plastic used must not be liable to generate static electricity by contained substances	Boxes: Wood, sift-proof (4C2) Plywood (4D) Reconstituted wood (4F)	2.
E-22(a)	Bags: Paper, kraft Plastic Textile Rubberized textile	Barrels: Wood, removable head (2C2) Boxes: Fiberboard (4G) Wood, ordinary (4C1) Wood, sift-proof (4C2) Plywood (4D) Reconstituted wood (4F) Steel (4A) Drums: Fiber (1G) Plywood (1D)	11 for UN 0411
E-22(b)	Receptacles: Fiberboard Metal Plastic	Boxes: Fiberboard (4G) Wood, ordinary (4C1) Wood, sift-proof (4C2) Plywood (4D) Reconstituted wood (4F)	10.
E-22(c)	Not necessary	Drums: Steel, removable head (1A2) Fiber (1G) Plywood (1D) Jerricans: Steel (3A1) Steel, removable head (3A2)	8, 9, 10.
E-24(a)	Bags: Rubber Rubberized textile Plastic	Boxes: Fiberboard (4G)	
E-24(b)	Bags: Rubber Rubberized textile Plastic Intermediate: Bags: Rubber Rubberized textile Plastic	Drums: Steel, removable head (1A2) with coating other than lead	

TABLE OF PACKING METHODS—Continued

Packing method (1)	Inner packaging (2)	Outer packaging (3)	Particular packaging exception/requirement (4)
E-25	Bags. Plastic	Drums: Fiber (1G) Steel, removable head (1A2)	
E-26	Bags. Plastic Paper Paper, multiwall, water resistant Sheets Plastic Receptacles: Metal Paper Plastic	Barrels: Wood, removable head (2C2) Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Drums: Fiber (1G) Bags: Plastic, siftproof (5H2)	53.
E-102	Optional	Boxes: Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B) Expanded plastics (4H1) Fiberboard (4G) Plastics, solid (4H2) Crates: (For large articles) Drums: Steel, removable head (1A2) Fiber (1G) Aluminum, removable head (1B2)	13, 48, 49
E-103	Must be specifically authorized by the Associate Administrator for Hazardous Materials Safety prior to transportation. See §§ 173.57 and 173.58. For an international shipment, the package must be marked with "Packaging authorized by competent authority of the United States of America (USA)"		
E-106	Not necessary Boxes: Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B) Plastics, solid (4H2) Drums: Steel, removable head (1A2)	49 for all entries except UN 0434 and UN 0435.	
E-107(a)	Not necessary Note. This packaging method is to be used for boosters which are finished articles consisting of closed metal, plastic, or fiberboard receptacles that contain a detonating explosive, or consisting of a plastic-bonded detonating explosive.	Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B) Note: This packaging method is to be used for boosters which are finished articles consisting of closed metal, plastic, or fiberboard receptacles that contain a detonating explosive, or consisting of a plastic-bonded, detonating explosive.	57
E-107(b)	Receptacles: Fiberboard Metal Plastic Sheets: Plastic Paper Note This packaging method is to be used for cast or pressed boosters in tubes or capsules without end closures.	Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B) Note: This packaging method is to be used for cast or pressed boosters in tubes or capsules without end closures.	57.

TABLE OF PACKING METHODS—Continued

Packing method (1)	Inner packaging (2)	Outer packaging (3)	Particular packaging exception/requirement (4)
E-108	Receptacles Metal Plastic Wooden Note. Dividing partitions in the outer packaging may be used in place of inner packagings.	Boxes Wooden, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B)	23
E-109	Receptacles: Metal Plastic Wood Paper Fiberboard	Boxes: Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B)	28.
E-113	Receptacles. Fiberboard Plastic Metal Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Natural wood, with sift-proof walls (4C2) Steel (4A)		
E-114	Receptacles: Fiberboard Plastic Metal Wood	Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B) Natural wood, with sift-proof walls (4C2) Drums: Steel, removable head (1A2)	60.
E-115	Receptacles: Fiberboard Metal Paper, raft (for cartridge of 1.4G and 1.4S) Plastic Wood	Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B) Expanded plastics (4H1) Plastics, solid (4H2)	
E-116	Bags Plastic Textile Boxes: Fiberboard Plastic Wood Note: (1) Bags are authorized for small cases only. (2) Dividing partitions in the outer packaging may be used in place of inner packagings.	Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B)	
E-117	Not necessary	Boxes Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B) Fiberboard (4G) Drums Steel, removable head	57.

TABLE OF PACKING METHODS—Continued

Packing method (1)	Inner packaging (2)	Outer packaging (3)	Particular packaging exception/requirement (4)
E-119	Not necessary	Boxes Wood, ordinary (4C1) Wood, sift-proof (4C2) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B) Fiberboard (4G) Plastics, solid (4H2) Drums: Steel, removable head (1A2) Aluminum, removable head (1B2) Note: Packaging 4C1 is authorized for cased charges only	
E-120	Tubes Fiberboard Other materials Note: Dividing partitions in the outer packaging may be used in place of inner packagings.	Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F)	30, 31
E-121	Not necessary	Boxes Fiberboard (4G1) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B) Drums: Steel, removable head (1A2) Aluminum (1B2)	32, 57
E-122	Boxes: Metal Plastic Wood Fiberboard	Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B)	
E-123	Receptacles: Fiberboard Metal Plastics Note. Dividing partitions in the outer packaging may be used in place of inner packagings.	Boxes: Wood, ordinary (4C1), with metal liner Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B) Expanded plastics (4H1)	35, 49.
E-124	Reels Receptacles: Metal	Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Aluminum (4B) Steel (4A) Drums: Steel, removable head (1A2) Aluminum (1B2) Fiber (1G)	33
E-125	Bags: Plastic Sheets: Paper, Kraft Plastic Note. Reels may be used in place of inner packagings	Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B) Drums: Steel, removable head (1A2) Aluminum (1B2)	34.

TABLE OF PACKING METHODS—Continued

Packing method (1)	Inner packaging (2)	Outer packaging (3)	Particular packaging exception/requirement (4)
E-126	Receptacles: Fiberboard Note Reels may be used in place of inner packagings	Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B) Drums: Steel, removable head (1A2) Aluminum (1B2)	
E-127	Receptacles Fiberboard Metals Plastics	Boxes: Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B) Fiberboard (4G)	
E-128	Boxes: Fiberboard Plastic Wood Trays: Fiberboard Plastic Wood Cans: Metal Note: All inner packagings must be fitted with dividing partitions	Boxes: Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B) Fiberboard (4G)	23, 36
E-129	Receptacles: Fiberboard Plastic Sheets: Paper	Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Drums: Fiber (1G)	
E-130	Receptacles: Fiberboard Plastic Metal Sheets: Paper	Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B) Expanded plastics (4H1) Drums: Fiber (1G) Plastic, removable head (1H2) Steel, removable head (1A2) Aluminum, removable head (1B2)	
E-133	Receptacles: Fiberboard Metal Plastic Sheets: Paper, kraft Note: Dividing partitions in the outer package may be used in place of inner packagings	Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B) Expanded plastics (4H1) Solid plastics (4H2) Drums: Fiber (1G) Plastic, removable head (1H2) Steel, removable head (1A2) Aluminum, removable head (1B2)	

TABLE OF PACKING METHODS—Continued

Packing method (1)	Inner packaging (2)	Outer packaging (3)	Particular packaging exception/requirement (4)
E-134	Receptacles: Fiberboard Metal Plastic Wood	Boxes Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B) Drums: Steel, removable head (1A2) Aluminum (4B)	
E-135	Bags: Plastic Reels Sheets Paper, kraft Plastic	Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F)	
E-136	Not necessary	Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B) Expanded solid (4H2) Drums: Fiber (1G) Steel, removable head (1A2) Aluminum, removable head (1B2)	32, 57.
E-137	Receptacles: Fiberboard Metal Plastic Wood Trays: Plastic Wood Note Dividing partitions in the outer packaging may be used in place of inner packagings	Boxes: Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B) Fiberboard (4G) Plastics, solid (4H2) Drums: Steel, removable head (1A2)	56, 38 for UN 0106, 0107, 0257, 0367, 0408, 0409 and 0410 only.
E-138	Optional	Boxes: Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B) Plastics, solid (4H2)	
E-139	Receptacles: Metal Plastic Wood Fiberboard	Boxes: Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B) Drums: Steel, removable head (1A2)	28 for UN 0121 only.
E-141	Receptacles: Fiberboard Metal Wood Sheets: Paper Trays: Plastic	Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B) Solid plastics (4H2)	

TABLE OF PACKING METHODS—Continued

Packing method (1)	Inner packaging (2)	Outer packaging (3)	Particular packaging exception/requirement (4)
E–142	Boxes: Fiberboard Metal Plastic Wood Cans Metal Trays: Fiberboard, sleeved Plastic, sleeved Intermediate: (Optional with inner boxes but mandatory with trays)	Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B)	40, D11, D39
E–143	Boxes: Fiberboard Metal Wood Tubes Fiberboard Trays: Plastic	Boxes: Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B)	
E–145	Receptacles: Fiberboard Metal (for rivets, explosives) Plastic Wood	Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B)	
E–146(a)	Not necessary	Boxes: Fiberboard (4G) Plywood (4D) Reconstituted wood (4F) Wood, ordinary (4C1) Steel (4A) Aluminum (4B)	
E–146(b)	Not necessary	Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B)	
E–146(c)	Not necessary	Boxes: Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B)	
E–147	Receptacles: Fiberboard Metal	Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Drums: Fiber (1G)	
E–149	Optional	Boxes: Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Solid plastics (4H2) Steel (4A) Aluminum (4B)	42, 50

TABLE OF PACKING METHODS—Continued

Packing method (1)	Inner packaging (2)	Outer packaging (3)	Particular packaging exception/requirement (4)
E-150	Boxes: Fiberboard Metal Receptacles: Metal Plastic Sheets: Paper, kraft	Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B) Expanded plastics (4H1) Plastics, solid (4H2) Drums: Fiber (1G) Steel, removable head (1A2) Aluminum, removable head (1B2) Plastics, removable head (1H2)	12.
E-151	Receptacles: Metal Plastic Wood Fiberboard	Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B) Drums: Fiber (1G)	43, 44, 45
E-153[2]	Sheets: Fiberboard, corrugated Tubes: Fiberboard Intermediate: Receptacles: Fiberboard Metal Plastic	Boxes: Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B)	46.
E-156	Bags: Plastic Boxes: Fiberboard Tubes: Fiberboard Plastic Metal Note. Dividing partitions in the outer packaging may be used in place of inner packaging	Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B)	
E-157	Not necessary	Boxes: Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B)	
E-158(a)	Bags: Paper, kraft Plastics Textile Rubberized textile	Boxes: Fiberboard (4G) Wood, ordinary (4C1) Wood, silt-proof (4C2) Plywood (4D) Reconstituted wood (4F) Solid plastics (4H2) Drums: Steel, removable head (1A2) Fiber (1G) Plywood (1D)	8, 10.
E-158(b)	Receptacles: Fiberboard Metal Plastics	Boxes: Fiberboard (4G) Wood, ordinary (4C1) Wood, silt-proof (4C2) Plywood (4D) Reconstituted wood (4F) Solid plastics (4H2)	10.
E-158(c)	Not necessary	Composite packagings: Plastic receptacle with outer solid plastic box (6HH2)	

TABLE OF PACKING METHODS—Continued

Packing method (1)	Inner packaging (2)	Outer packaging (3)	Particular packaging exception/requirement (4)
E-159(a)	Receptacles: Plastics Intermediate: Bags Plastic, in metal cans	Boxes: Natural wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Note DOT Spec. MC-200, motor vehicle container may be used as the outer packaging	58.
E-159(b)	Receptacles Plastics Intermediate: Drums Metal	Drums: Steel, removable head (1A2) Aluminum, removable head (1B2) Note: DOT Spec. MC-200, motor vehicle container may be used as the outer packaging	59.
US002	Receptacles. Fiberboard Metal Paper	Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B)	D2, D3.
US003	Receptacles: Fiberboard Metal Plastic Intermediate: Boxes: Fiberboard Wood Sheets: Paper, Kraft Plastic	Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B)	D2, D3, D4, D10.
US004	Receptacles: Fiberboard Metal Paper	Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B)	D2, D5, D6, D7, D8.
US005	Boxes: Fiberboard Metal Plastic Wood Note. Metal clips or dividing partitions in the outer packaging may be used in place of inner packagings	Boxes: Fiberboard (4G) Wood, ordinary (4C1) Plywood (4D) Reconstituted wood (4F) Steel (4A) Aluminum (4B) Drums: Steel, removable head (1A2)	13.
US006 [1]			

[1] A jet perforating gun, charged, oil well may be transported under the following conditions:

a. Initiation devices carried on the same motor vehicle or offshore supply vessel must be segregated; each kind from every other kind, and from any gun, tool or other supplies. Initiation devices must be carried in a container having individual pockets for each such device or in a fully enclosed steel container lined with a non-sparking material. No more than two initiation devices per gun may be carried on the same motor vehicle.

b. Each shaped charge affixed to the gun may not contain more than 112 g (4 ounces) of explosives.

c. Each shaped charge if not completely enclosed in glass or metal, must be fully protected by a metal cover after installation in the gun.

d. A jet perforating gun classed as 1.1D or 1.4D may be transported by highway by private or contract carriers engaged in oil well operations.

1. A motor vehicle transporting a gun must have specially built racks or carrying cases designed and constructed so that the gun is securely held in place during transportation and is not subject to damage by contact, one to the other or any other article or material carried in the vehicle, and;

2. The assembled gun packed on the vehicle may not extend beyond the body of the motor vehicle.

e. A jet perforating gun classed as 1.4D may be transported by a private offshore supply vessel only when the gun is carried in a motor vehicle as specified in paragraph (d) of this packing method or on offshore down-hole tool pallets provided that:

1. All the conditions specified in paragraphs (a), (b), and (c) of this packing method are met;

2. The total explosive contents do not exceed 9.1 kg (20 pounds) per pallet;

3. Each cargo vessel compartment may contain up to 90.8 kg (200 pounds) of explosive content if the segregation requirements in § 176.83(b)(3) of this subchapter are met; and

4. When more than one vehicle or pallet is stowed "on deck" a minimum horizontal separation of 3 m (9.8 feet) must be provided.

(d) *Table of particular packaging requirements or exceptions*

Number identifying packaging requirement or exception	Explanation of packaging requirement or exception
1	Water soluble substances must be packed in waterproof receptacles.
2	Packages must be lead-free
3	The barrels and drums must have a watertight seal
4	The intermediate and outer packagings must be filled with water or an appropriate water-saturated material when the intermediate packaging is a rubber or rubberized textile bag.
7	Metal drums used for powder paste must be so constructed that explosion is not possible by reason of increase in internal pressure from internal or external causes.
8	The inside of drums and jerricans must be galvanized, painted or otherwise protected Bare steel may not come into contact with smokeless powder.
9	Drums or jerricans of steel must be constructed without pockets or crevices in which smokeless powder could be trapped or nipped.
10	Metal receptacles must be so constructed that the risk of explosion, by reason of increase in internal pressure from internal or external causes, is reduced.
11	The inner packagings must be sealed.
12	Outer boxes of natural wood may be provided with a tin-plate liner having a sealed lid.
13	Open ends of inner packagings must be fitted with padded end caps or the outer packaging must be padded.
22	The inner packagings must be separated from the outer packaging by a gap of not less than 25 mm (1 inch) of cushioning material, e.g., sawdust, wood, wool.
28	Metal inner packagings must be padded with cushioning material.
30	The shaped charges must be packed so that contact between them is prevented.
31	The conical cavities of the shaped charges must face inward in pairs or groups to minimize the shaped charge (jetting) effect in the event of accidental initiation.
32	The ends of the articles must be sealed or the use of bags, plastics, as inner packaging is mandatory.
33	The ends of the detonating cord must be sealed and tied fast
34	The ends of the detonating cord must be sealed. Spaces must be filled with packing material.
35	Packagings must be sealed against the ingress of water.
36	The detonators must be cushioned to prevent significant movement and contact between them.
38	The detonating fuses must be separated from each other in the inner packaging
41	The primers must be packed with shock-absorbent layers of felt, paper or plastic to prevent propagation within the outer packaging.
42	The outer plastic packagings must be reinforced with metal at corners and edge.
43	The signals must be separated to prevent contact with one another and kept apart from the bottom, walls, and lid of the outer packaging, e g., by cushioning material.
44	Where the signals are contained in magazines for fitting into automatic units, the magazine may replace the inner packaging if adequate cushioning material is used.
45	Tin-plate inner packagings must be sealed.
46	The sounding device must be wrapped individually in corrugated fiberboard sheets or inserted in fiberboard tubes.
47	Absorbent cushioning material must be inserted.
48	Large articles without propelling charge and without means of ignition or initiation may be carried unpacked.
49	Large articles without their means of initiation, or with their means of initiation containing at least two effective protective features, may be carried unpackaged.
50	Large articles without their means of ignition may be carried unpackaged.
53	Bags, sift-proof (5H2) recommended only for flake or prilled TNT in the dry state and a maximum net mass of 30 kg (66 pounds).
55	Not more than 50 g (1.8 ounces) of a substance may be packed in an inner packaging.
56	Fiberboard boxes (4G) are not authorized outer packagings for UN0106 or UN0107.
57	Liner or inner coating is required for metal outer packagings unless another means, such as the use of an inner packaging or cushioning material protects the explosive substance from contact with the metal outer packaging during normal conditions of transport.
58	Plastic receptacles must have taped screw cap closures and be of not more than 5 liters capacity each. Each receptacle must be contained within an intermediate packaging. Each plastic bag must be surrounded on all sides with at least 50 mm of non-combustible absorbent cushioning material: metal cans in the outer packaging must also be cushioned from each other in all directions. Net mass of propellent must be limited to 30 kg for each package.
59	The intermediate drum must be surrounded on all sides with at least 50 mm of non-combustible absorbent cushioning material. A composite packaging consisting of a plastic receptacle in a metal drum may be used instead of the inner and intermediate packagings. The net volume of propellent in each packaging must not exceed 120 liters.
60	Plastic bags may be used as inner packagings for model rocket motors.
D1	The intermediate packaging must be entirely surrounded by wetted cushioning material within the outer packaging

Number identifying packaging requirement or exception	Explanation of packaging requirement or exception
D2	Quantity limitations for all detonators are as follows unless specifically defined for each type of detonator: (a) For detonators containing no more than 10 g of explosive (excluding ignition and delay charges): (i) No more than 50 detonators may be packed in one inner packaging. (ii) No more than 500 detonators may be packed in one outer packaging. (b) For detonators containing no more than 3 g of explosive (excluding ignition and delay charges): (i) No more than 100 detonators may be packed in one inner packaging. (ii) No more than 1000 detonators may be packed in one outer packaging. (c) There are no quantity limitations for detonators classed as 1.4B or 1.4S. The number of detonators that may be packed in each inner or outer (if inner packaging is not required) packaging is determined by: (i) The ability of that package to pass certain tests (see § 173.57) that qualify the detonators to be classed as 1.4B or 1.4S; or (ii) The gross weight limitations of the packaging used.
D3	Inner packaging is not required for electric detonators when packed in pasteboard tubes, or when their leg wires are wound on spools with the caps either placed inside the spool or securely taped to the wire on the spool, so as to restrict freedom of movement of the caps and to protect them from impact forces. No more than 500 electric blasting caps may be contained in one outer packaging.
D4	Intermediate packagings are required only for non-electric detonators that are blasting caps or delay connectors in metal tubes.
D5	Detonators are not required to be attached to the safety fuse, metal-clad mild detonating cord, detonating cord; or shock tube
D6	Inner packagings are not required if the packing configuration restricts freedom of movement of the caps and protects them from impact forces.
D7	Quantity limitations for detonator assemblies with detonating cord are: (a) No more than 50 detonator assemblies may be packed in one inner packaging. (b) No more than 500 detonator assemblies may be packed in one outer packaging.
D8	Quantity limitations for detonator assemblies with safety fuse or shock tube are: (a) No more than 50 detonator assemblies may be packed in one inner packaging. (b) No more than 1,000 detonator assemblies may be packed in one outer packaging.
D9	Primers fitted with anvil, composition not covered with a disc of metal foil or other material (varnished only). (a) The primers must be packed in rows in single layers in trays of fiberboard or plastic. (b) Not more than 500 primers may be packed in an inner packaging.
D10	Detonators that are non-electric (including percussion activated) or detonating relays in metal tubes must be packed as follows: (a) The detonators must be packed in an inner packaging with the open end of any detonator covered with appropriate cushioning material; (b) Inner packagings must be snugly packed in an intermediate packaging; (c) Intermediate packagings must be separated from the outside packaging by at least 25 mm (1 inch) of cushioning material, (d) Detonators containing no more than 10 g of explosive (excluding ignition and delay charges) must be packed as follows: (i) No more than 50 detonators in one inner packaging. (ii) No more than 500 detonators in one outer packaging. (e) Detonators containing no more than 3 g of explosive (excluding ignition and delay charges) must be packed as follows: (i) No more than 110 detonators in one inner packaging (ii) No more than 5,000 detonators in one outer packaging.
D11	Primers not fitted with an anvil, composition covered, not more than 5,000 primers may be packed in an inner packaging.
D12	Large articles may be carried unpackaged.
D13	No inner packaging required for drums, fiber (1G).
D14	Inner packaging is not required with fiberboard boxes (4G) for packaging UN 0332.
D15	Sheets, waterproof, when used, must also be impervious to any liquid explosive ingredients of the substance.

* * * * *

§ 173.62 [Amended]

46 In addition, in § 173.62, in paragraph (e), the phrase "January 1, 1988" is removed and replaced with the phrase "January 1, 1990" each place it appears.

47 In § 173.115, the heading and the introductory text of paragraph (b) are revised to read as follows

§ 173.115 Class 2, Divisions 2.1, 2 2, and 2.3—Definitions

* * * * *

(b) *Division 2 2 (non-flammable, nonpoisonous compressed gas—including compressed gas, liquefied gas, pressurized cryogenic gas, compressed gas in solution, asphyxiant gas and oxidizing gas).* For the purpose of this subchapter, a non-flammable, nonpoisonous compressed gas (Division 2.2) means any material (or mixture) which—

* * * * *

48. Section 173.120 is amended by revising paragraph (a) and adding a sentence at the end of paragraph (b)(2) to read as follows:

§ 173.120 Class 3—Definitions

(a) *Flammable liquid.* For the purpose of this subchapter, a *flammable liquid* (Class 3) means a liquid having a flash point of not more than 60.5°C (141°F), or any material in a liquid phase with a flash point at or above 37.8°C (100°F) that is intentionally heated and offered for transportation or transported at or above its flash point in a bulk packaging, with the following exceptions:

(1) Any liquid meeting one of the definitions specified in § 173.115.

(2) Any mixture having one or more components with a flash point of 60 5°C (141°F) or higher, that make up at least 99 percent of the total volume of the mixture, if the mixture is not offered for transportation or transported at or above its flash point.

(3) Any liquid with a flash point greater than 35°C (95°F) which does not sustain combustion. A procedure for determining if a material sustains combustion when heated under test conditions and exposed to an external source of flame is provided in Appendix H of this part.

(4) Any liquid with a flash point greater than 35°C (95°F) and with a fire point greater than 100°C (212°F) according to ISO 2592.

(5) Any liquid with a flash point greater than 35°C (95°F) which is in a water-miscible solution with a water content of more than 90 percent by mass.

(b) * * *

(2) * * * An elevated temperature material that meets the definition of a Class 3 material because it is intentionally heated and offered for transportation or transported at or above its flash point may not be reclassed as a combustible liquid

* * * * *

§ 173.120 [Amended]

49. In addition, in § 173.120, the following changes are made: a. In paragraph (c)(1)(i)(A), the wording "ASTM D56–79" is revised to read "ASTM D 56".

b. In paragraphs (c)(1)(i)(B) and (c)(1)(ii)(B), the wording "ASTM D3278–78" is revised to read "ASTM D 3278".

c. In paragraph (c)(1)(ii)(A), the wording "ASTM D93–80" is revised to read "ASTM D 93" each place it appears.

50. Section 173 121 is amended by adding a parenthetical note at the end of paragraph (b)(1)(ii) before the semicolon and revising the paragraph (b)(1)(iv) table and paragraph (b)(2)(i) to read as follows:

§ 173.121 Class 3—Assignment of packing group

* * * * *

(b) * * *

(1) * * *

(ii) * * * (Note: The mixture is not necessarily required to bear a POISON or CORROSIVE subsidiary risk label.);

* * * * *

(iv) * * *

Flow time t in seconds	Jet diameter in mm	Flash point c.c.
20<t≤60	4	above 17°C (62.6°F).
60<t≤100	4	above 10°C (50°F).
20<t≤32	6	above 5°C (41°F).
32<t≤44	6	above −1°C (31.2°F).
44<t≤100	6	above −5°C (23°F).
100<t	6	−5°C (23°F) and below.

(2) * * *

(i) *Viscosity test.* The flow time in seconds is determined at 23°C (73.4°F) using the ISO standard cup with a 4 mm (0 16 inch) jet (ISO 2431-1984). Where the flow time exceeds 100 seconds, a further test is carried out using the ISO standard cup with a 6 mm (0.24 inch) jet.

* * * * *

51. In § 173.124, the section heading and paragraph (a)(2) are revised to read as follows

§ 173.124 Class 4, Divisions 4 1, 4 2 and 4 3—Definitions

(a) * * *

(2)(i) Self-reactive materials are materials that are thermally unstable and that can undergo a strongly exothermic decomposition even without participation of oxygen (air). A material is excluded from this definition if any of the following applies:

(A) The material meets the definition of an explosive as prescribed in subpart C of this part, in which case it must be classed as an explosive;

(B) The material is forbidden from being offered for transportation according to § 172.101 of this subchapter or § 173.21;

(C) The material meets the definition of an oxidizer or organic peroxide as prescribed in subpart D of this part, in which case it must be so classed;

(D) The material meets one of the following conditions:

(1) Its heat of decomposition is less than 300 J/g; or

(2) Its self-accelerating decomposition temperature (SADT) is greater than 75°C (167°F); or

(E) The Associate Administrator for Hazardous Materials Safety has determined that the material does not present a hazard which is associated with a Division 4.1 material.

(ii) *Generic types.* Division 4.1 self-reactive materials are assigned to a generic system consisting of seven types. A self-reactive substance identified by technical name in the Self-Reactive Materials Table in § 173.224 is assigned to a generic type in accordance with that Table. Self-reactive materials not identified in the Self-Reactive Materials Table in § 173.224 are assigned to generic types under the procedures of paragraph (a)(2)(iii) of this section.

(A) *Type A.* Self-reactive material type A is a self-reactive material which, as packaged for transportation, can detonate or deflagrate rapidly. Transportation of type A self-reactive material is forbidden.

(B) *Type B.* Self-reactive material type B is a self-reactive material which, as packaged for transportation, neither detonates nor deflagrates rapidly, but is liable to undergo a thermal explosion in a package.

(C) *Type C* Self-reactive material type C is a self-reactive material which, as packaged for transportation, neither detonates nor deflagrates rapidly and cannot undergo a thermal explosion.

(D) *Type D.* Self-reactive material type D is a self-reactive material which—

(1) Detonates partially, does not deflagrate rapidly and shows no violent effect when heated under confinement;

(2) Does not detonate at all, deflagrates slowly and shows no violent effect when heated under confinement, or

(3) Does not detonate or deflagrate at all and shows a medium effect when heated under confinement.

(E) *Type E.* Self-reactive material type E is a self-reactive material which, in laboratory testing, neither detonates nor deflagrates at all and shows only a low or no effect when heated under confinement.

(F) *Type F.* Self-reactive material type F is a self-reactive material which, in laboratory testing, neither detonates in the cavitated state nor deflagrates at all and shows only a low or no effect when heated under confinement as well as low or no explosive power.

(G) *Type G.* Self-reactive material type G is a self-reactive material which, in laboratory testing, does not detonate in the cavitated state, will not deflagrate at all, shows no effect when heated under confinement, nor shows any explosive power. A type G self-reactive material is not subject to the requirements of this subchapter for self-reactive material of Division 4.1 provided that it is thermally stable (self-accelerating decomposition temperature is 50 °C (122 °F) or higher for a 50 kg (110 pounds) package). A self-reactive material meeting all characteristics of type G except thermal stability is classed as a type F self-reactive, temperature control material.

(iii) *Procedures for assigning a self-reactive material to a generic type.* A self-reactive material must be assigned to a generic type based on—

(A) Its physical state (i.e. liquid or solid), in accordance with the definition of liquid and solid in § 171.8 of this subchapter;

(B) A determination as to its control temperature and emergency temperature, if any, under the provisions of § 173.21(f);

(C) Performance of the self-reactive material under the test procedures specified in the UN Recommendations on the Transport of Dangerous Goods, Tests and Criteria and the provisions of paragraph (a)(2)(iii) of this section, and

(D) Except for a self-reactive material which is identified by technical name in the Self-Reactive Materials Table in § 173.224(b) or a self-reactive material which may be shipped as a sample under the provisions of § 173.224, the self-reactive material is approved in writing by the Associate Administrator for Hazardous Materials Safety. The person requesting approval shall submit to the Associate Administrator for Hazardous Materials Safety the tentative

shipping description and generic type and—

(1) All relevant data concerning physical state, temperature controls, and tests results, or

(2) An approval issued for the self-reactive material by the competent authority of a foreign government

(iv) *Tests.* The generic type for a self-reactive material must be determined using the testing protocol from Figure 14.2 (Flow Chart for Assigning Self-Reactive Substances to Division 4 1) from the UN Recommendations on the Transport of Dangerous Goods, Tests and Criteria.

* * * * *

52 In § 173.128, paragraph (b)(7) is revised, paragraph (c)(4) is removed, paragraph (d) is redesignated as paragraph (e), and a new paragraph (d) is added to read as follows:

§ 173.128 Class 5, Division 5 2—Definitions and types

* * * * *

(b) * * *

(7) *Type G.* Organic peroxide type G is an organic peroxide which will not detonate in a cavitated state, will not deflagrate at all, shows no effect when heated under confinement, and shows no explosive power. A type G organic peroxide is not subject to the requirements of this subchapter for organic peroxides of Division 5.2 provided that it is thermally stable (self-accelerating decomposition temperature is 50 °C (122 °F) or higher for a 50 kg (110 pounds) package). An organic peroxide meeting all characteristics of type G except thermal stability and requiring temperature control is classed as a type F, temperature control organic peroxide

* * * * *

(d) *Approvals.* (1) An organic peroxide must be approved, in writing, by the Associate Administrator for Hazardous Materials Safety, before being offered for transportation or transported, including assignment of a generic type and shipping description, except for—

(i) An organic peroxide which is identified by technical name in the Organic Peroxides Table in § 173.225(b);

(ii) A mixture of organic peroxides prepared according to § 173.225(c)(5); or

(iii) An organic peroxide which may be shipped as a sample under the provisions of § 173.225(c).

(2) A person applying for an approval must submit all relevant data concerning physical state, temperature controls, and tests results or an approval issued for the organic peroxide by the competent authority of a foreign government.

* * * * *

§ 173.128 [Amended]

53 In addition, in § 173.128, the following changes are made

a In paragraph (a) introductory text, the word "apply" is revised to read "applies".

b. In paragraph (c)(2), the word "and" is added at the end of the paragraph, and in paragraph (c)(3), at the end of the paragraph, the wording "; and" is removed and replaced with a period.

54. In § 173.136, paragraph (a) is revised to read as follows:

§ 173.136 Class 8—Definitions

(a) For the purpose of this subchapter, "corrosive material" (Class 8) means a liquid or solid that causes full thickness destruction of human skin at the site of contact within a specified period of time. A liquid that has a severe corrosion rate on steel or aluminum based on the criteria in § 173.137(c)(2) is also a corrosive material.

* * * * *

55. In § 173.137, the second sentence of the introductory text, and paragraphs (a), (b), and (c) are revised to read as follows:

§ 173.137 Class 8—Assignment of packing group

* * * When the § 172.101 Table provides more than one packing group for a Class 8 material, the packing group must be determined using data obtained from tests conducted in accordance with the 1992 OECD Guideline for Testing of Chemicals, Number 404 "Acute Dermal Irritation/Corrosion" as follows:

(a) *Packing Group I.* Materials that cause full thickness destruction of intact skin tissue within an observation period of up to 60 minutes starting after the exposure time of three minutes or less.

(b) *Packing Group II.* Materials that cause full thickness destruction of intact skin tissue within an observation period of up to 14 days starting after the exposure time of more than three minutes but not more than 60 minutes.

(c) *Packing Group III.* Materials, other than those meeting Packing Group I or II criteria—

(1) That cause full thickness destruction of intact skin tissue within an observation period of up to 14 days starting after the exposure time of more than 60 minutes but not more than 4 hours; or

(2) That do not cause full thickness destruction of intact skin tissue but exhibit a corrosion rate on steel or aluminum surfaces exceeding 6.25 mm (0 25 inch) a year at a test temperature of 55°C (130°F) For the purpose of testing steel P3 (ISO 9328–1) or a similar type, and for testing aluminum, non-clad types 7075–T6 or AZ5GU-T6 should be used. An acceptable test is described in ASTM G 31–72 (Reapproved 1990).

56 In § 173 150, the section heading and paragraph (d) are revised to read as follows.

§ 173.150 Exceptions for Class 3 (flammable) and combustible liquids

* * * * *

(d) *Alcoholic beverages* An alcoholic beverage (wine and distilled spirits as defined in 27 CFR 4:10 and 5.11) is not subject to the requirements of this subchapter if it—

(1) Contains 24 percent or less alcohol by volume;

(2) Is in a packaging of five liters or less; or

(3) Is a Packing Group III alcoholic beverage in a packaging of 250 L (66 gallons) or less, unless transported by air.

* * * * *

§ 173.150 [Amended]

57. In addition, in § 173.150, the following changes are made:

a. In paragraph (a), the wording "another hazard class." is revised to read "another hazard class except Division 6.1, Packing Group III or Class 8, Packing Group III.".

b. In the introductory text of paragraph (b), the wording "flammable liquids (Class 3)" is revised to read "flammable liquids (Class 3) and combustible liquids".

c. In paragraph (b)(3), the wording "flammable liquids in Packing Group III," is revised to read "flammable liquids in Packing Group III and combustible liquids,".

58. In § 173.152, paragraph (b)(3) is revised to read as follows:

§ 173.152 Exceptions for Division 5.1 (oxidizers) and Division 5.2 (organic peroxides)

* * * * *

(b) * * *

(3) For organic peroxides which do not require temperature control during transportation—

(i) For Type D, E, or F organic peroxides, inner packagings not over 125 ml (4 22 ounces) net capacity each for liquids or 500 g (17.64 ounces) net capacity for solids, packed in strong outer packagings.

(ii) For Type B or C organic peroxides, inner packagings not over 25 ml (0.845 ounces) net capacity each for liquids or 100 g (3.528 ounces) net capacity for

solids packed in strong outer packagings.

* * * * *

59 In § 173 158, a new paragraph (f)(3) is added to read as follow

§ 173 158 Nitric acid

* * * * *

(f) * * *

(3) In combination packagings with 1A2, 1B2, 1D, 1G, 1H2, 3H2, 4C1, 4C2, 4D, 4F or 4G outer packagings and plastic inner packagings not over 2 5 L (0 66 gallon) capacity further individually overpacked in tightly closed metal packagings

* * * * *

60. Section 173.164 is amended by redesignating paragraphs (b), (c) and (d) as paragraphs (c), (d) and (e) respectively, revising newly designated paragraph (c) introductory text and the last sentence of newly designated paragraph (c)(1), and adding a new paragraph (b) to read as follows:

§ 173 164 Mercury (metallic and articles containing mercury)

* * * * *

(b) Manufactured articles or apparatuses, each containing not more than 100 mg (0.0035 ounce) of mercury and packaged so that the quantity of mercury per package does not exceed 1 g (0.035 ounce) are not subject to the requirements of this subchapter.

(c) Manufactured articles or apparatuses containing not more than 100 mg (0.0035 ounce) mercury are excepted from the specification packaging requirements of this subchapter when packaged as follows:

(1) * * * Mercury switches and relays are excepted from these packaging requirements, if they are totally enclosed, leakproof and in sealed metal or plastic units.

* * * * *

§ 173.164 [Amended]

61 In addition, in § 173.164, the following changes are made:

a In paragraph (a)(1), in the first sentence, the wording "not more than 250 ml (8 oz) capacity each" is revised to read "not more than 3.5 kg (7 7 pounds) capacity each".

b In paragraphs (a)(1) and (a)(2), the wording "or reconstituted wood (4F) boxes," is revised to read ", reconstituted wood (4F) or solid plastic (4H2) boxes," each place it appears.

c. In paragraph (a)(2), immediately following the wording "'quicksilver flasks'" the wording "of not more than 3 5 kg (7.7 pounds) capacity each" is added.

62 Section 173.166 is amended by revising the section heading, adding a new last sentence in paragraph (a), revising paragraph (b), the last sentence of paragraph (c) and paragraph (d)(1) to read as follows.

§ 173 166 Air bag inflators, air bag modules seat-belt pre-tensioners, and seat-belt modules

(a) * * * A seat-belt pre-tensioner contains similar hazardous materials and is used in the operation of a seat-belt restraining system in a motor vehicle A seat-belt module is the seat belt pre-tensioner plus seat-belt hardware

(b) *Classification* An air bag inflator, air bag module, seat-belt pre-tensioner or seat-belt module may be classed as Class 9 only if it meets the following requirements—

(1) The manufacturer has submitted each design type air bag inflator or seat-belt pre-tensioner to the Bureau of Explosives (BOE) or the Bureau of Mines (BOM) for examination and testing The submission must contain a detailed description of the inflator or pre-tensioner (or, if more than a single inflator or pre-tensioner is involved, the maximum parameters of each particular inflator or pre-tensioner design type for which approval is sought) and details on the complete package.

(2) Samples of the inflator or pre-tensioner, packaged as for transport, have been subjected to test series 6(c) of the UN Recommendations on the Transport of Dangerous Goods, Tests and Criteria, Second Edition, 1990 with no explosion of the device, no fragmentation of device casings, and no projection hazard or thermal effect which would significantly hinder fire-fighting or other emergency response efforts in the immediate vicinity.

(3) The manufacturer submits an application, including—

(i) The BOE or BOM test results and report recommending the shipping description and classification for each device or design type; or

(ii) An approved classification issued by the competent authority of a foreign government, to the Associate Administrator for Hazardous Materials Safety, and is notified in writing by the Associate Administrator that the device has been classed as Class 9 and approved for transportation.

(4) No approval applications are required for air bag or seat-belt modules containing an approved air bag inflator or seat-belt pre-tensioner.

(5) Air bag inflators or seat belt pre-tensioners previously reclassed from Class 1 to Division 4.1 under the terms of an exemption may be reclassed as Class 9 materials without further testing.

(c) * * * A module must be identified with the same EX number or product code of the approved inflator or pre-tensioner

(d) * * * (1) An air bag or seat-belt module that has been approved by the Associate Administrator for Hazardous Materials Safety and is installed in a motor vehicle or in completed vehicle components, such as steering columns or door panels, is not subject to the requirements of this subchapter

* * * * *

§ 173.166 [Amended]

63. In addition, in § 173 166, the following changes are made

a. In paragraph (c), in the first and second sentences, the wording "or pre-tensioner" is added immediately following the wording "inflator" each place it appears.

b In paragraph (d)(2), the wording "or seat-belt" is added immediately following the wording "air bag" and the wording "or pre-tensioner" is added immediately following the wording "inflator".

c. In paragraph (f), the wording "FLAMMABLE SOLID label" is revised to read "CLASS 9 label"

§ 173.171 [Amended]

64 In § 173.171, in paragraph (a), the wording "Division 1.3 classification" is revised to read "Division 1 3 and Division 4.1 classification", and the reference "§ 173 56" is revised to read "§§ 173.56 and 173.58"

65. In § 173.173, the section heading and paragraph (b) introductory text are revised to read as follows.

§ 173.173 Paint, paint-related material, adhesives, ink and resins

* * * * *

(b) Paint, paint-related material, adhesives, ink and resins must be packaged as follows:

* * * * *

66 Section 173 185 is revised to read as follows·

§ 173 185 Lithium cells and batteries

(a) Except as otherwise provided in this subpart, a lithium cell or battery is authorized for transportation only if it conforms to the provisions of this section.

(b) *Exceptions* Cells and batteries are not subject to the requirements of this subchapter if they meet the following requirements:

(1) Each cell with a liquid cathode may contain no more than 0.5 g (0 02 ounce) of lithium or lithium alloy, and each cell with a solid cathode may contain no more than 1 0 g (0 04 ounce) lithium or lithium alloy.

(2) Each battery with a liquid cathode may contain an aggregate quantity of no more than 1.0 g (0 04 ounce) lithium or lithium alloy, and each battery with a solid cathode may contain an aggregate quantity of no more than 2.0 g (0.07 ounce) of lithium or lithium alloy.

(3) Each cell must be hermetically sealed;

(4) Cells and batteries must be separated so as to prevent short circuits and must be packed in strong packagings, except when installed in equipment, and

(5) If a liquid cathode battery contains more than 0.5 g (0.02 ounce) of lithium or lithium alloy or a solid cathode battery contains more than 1.0 g (0.04 ounce) lithium or lithium alloy, it may not contain a liquid or gas that is a hazardous material according to this subchapter unless the liquid or gas, if free, would be completely absorbed or neutralized by other materials in the battery.

(c) Cells and batteries also are not subject to this subchapter if they meet the following requirements:

(1) Each cell contains not more than 5 g (0.18 ounces) of lithium or lithium alloy;

(2) Each battery contains not more than 25 g (0.88 ounces) of lithium or lithium alloy;

(3) Each cell or battery is of the type proven to be non-dangerous by testing in accordance with tests in Part IV of the UN Recommendations on the Transport of Dangerous Goods, Tests and Criteria, such testing must be carried out on each type prior to the initial transport of that type; and

(4) Cells and batteries are designed or packed in such a way as to prevent short circuits under conditions normally encountered in transportation.

(d) Cells and batteries and equipment containing cells and batteries which were first transported prior to January 1, 1995, and were assigned to Class 9 on the basis of the requirements of this subchapter in effect on October 1, 1993, may continue to be transported in accordance with the applicable requirements in effect on October 1, 1993.

(e) Cells and batteries may be transported as items of Class 9 if they meet the requirements in paragraphs (e)(1) through (e)(9) of this section:

(1) Cells must not contain more than 12 g (0.42 ounce) of lithium or lithium alloy. When transported by passenger aircraft cells must not contain more than 3 g (0.11 ounces) of lithium or lithium alloy.

(2) Batteries must not contain more than 500 g (17.6 ounces) of lithium or lithium alloy. When transported by passenger aircraft, batteries must not contain more than 125 g (4.4 ounces) of lithium or lithium alloy

(3) Each cell and battery must be equipped with an effective means of preventing external short circuits.

(4) Each cell and battery must incorporate a safety venting device or be designed in a manner that will preclude a violent rupture under conditions normally incident to transportation.

(5) Batteries containing cells or series of cells connected in parallel must be equipped with diodes to prevent reverse current flow.

(6) Cells and batteries must be packed in strong inner packagings containing not more than 500 g (17 6 ounces) of lithium or lithium alloy. When transported by passenger aircraft, inner packagings must not contain more than 125 g (4.4 ounces) of lithium or lithium alloy.

(7) Cells and batteries must be packed in inner packagings in such a manner as to effectively prevent short circuits and to prevent movement which could lead to short circuits.

(8) Cells and batteries must be packaged in packagings conforming to the requirements of part 178 of this subchapter at the Packing Group II performance level:

(i) Inner packagings must be packed within a wooden box (4C1, 4C2, 4D, or 4F), fiberboard box (4G), fiber drum (1G), or metal drum (1A2 or 1B2);

(ii) Cells and batteries intended for air transportation must be packaged in metal drums (1A2 or 1B2) fitted with gas-tight gaskets; and

(iii) When the outer packaging is metal, the inner packagings must be separated from each other and from the outer packaging by at least 25 mm (1 inch) of non-combustible cushioning material.

(9) One of the following criteria must be met:

(i) Each cell or battery is of the type proven to meet the criteria of Class 9 by testing in accordance with tests in Part IV of the UN Recommendations on the Transport of Dangerous Goods, Tests and Criteria;

(ii) Ten cells and one battery of each type taken from production each week should be subjected to extreme temperature exposure and the short circuit test procedures in Part IV of the UN Recommendations on the Transport of Dangerous Goods, Tests and Criteria, or, equivalent tests approved by the Associate Administrator for Hazardous Materials Safety. There should be no evidence of distortion, leakage or internal heating in conducting the extreme temperature exposure test procedure. In conducting the short circuit test procedure, if venting occurs, an open flame applied to venting fumes should not produce an explosive condition, or

(iii) Cells and batteries that are hermetically sealed are excepted from paragraphs (e)(8)(ii) and (e)(8)(iii) of this section if the cells and batteries are subjected to the altitude simulation, extreme temperature exposure, vibration, and shock tests described in the UN Recommendations on the Transport of Dangerous Goods, Tests and Criteria, or equivalent tests approved by the Associate Administrator for Hazardous Materials Safety, and show no visible evidence of out-gassing, leakage, loss of mass or distortion.

(10) Except as provided in paragraph (i) of this section, cells or batteries may not be offered for transportation or transported if any cell has been discharged to the extent that the open circuit voltage is less than two volts or is less than ⅔ of the voltage of the fully charged cell, whichever is less.

(f) Equipment containing or packed with cells and batteries meeting the requirements of paragraph (b) or (c) of this section is excepted from all other requirements of this subchapter.

(g) Equipment containing or packed with cells and batteries may be transported as items of Class 9 if the batteries and cells meet all the requirements of paragraph (e) of this section and are packaged as follows:

(1) Equipment containing cells and batteries must be packed in a strong outer packaging that is waterproof or is made waterproof through the use of a liner. The equipment must be secured within the outer packaging and be packed as to effectively prevent movement, short circuits, and accidental operation during transport; and

(2) Cells and batteries packed with equipment must be packed in inner packagings conforming to paragraph (e)(9) of this section in such a manner as to effectively prevent movement and short circuits. Not more than 5 kg of cells and batteries may be packed with each item of equipment.

(h) Cells and batteries, for disposal, may be offered for transportation or transported to a permitted storage facility and disposal site by motor vehicle when they meet the following requirements:

(1) Cells must not contain more than 12 g (0.42 ounce) and batteries must not contain more than 500 g (17.6 ounces) of lithium or lithium alloy;

(2) Be equipped with an effective means of preventing external short circuits; and

(3) Be packed in a strong outer packaging conforming to the requirements of §§ 173.24 and 173.24a The packaging need not conform to performance requirements of part 178 of this subchapter.

(i) Cells and batteries and equipment containing or packed with cells and batteries which do not comply with the provisions of this section may be transported only if they are approved by the Associate Administrator for Hazardous Materials Safety.

(j) For testing purposes, cells containing not more than 12 g (0 42 ounce) of lithium or lithium alloy and batteries containing not more than 500 g (17.6 ounces) of lithium or lithium alloy may be offered for transportation or transported by highway only as items of Class 9. Packaging must conform with paragraphs (e)(8)(i) and (iii) of this section with not more than 100 cells per package.

67. Section 173.189 is added to read as follows.

§ 173 189 Batteries containing sodium or cells containing sodium

(a) Batteries and cells may not contain any hazardous material other than sodium, sulfur or polysulfides Cells not forming a component of a completed battery may not be offered for transportation at a temperature at which any liquid sodium is present in the cell. Batteries may only be offered for transportation, or transported, at a temperature at which any liquid sodium present in the battery conforms to the conditions prescribed in paragraph (d) of this section.

(b) Cells must consist of hermetically sealed metal casings which fully enclose the hazardous materials and which are so constructed and closed as to prevent the release of the hazardous materials under normal conditions of transport Cells must be placed in suitable outer packagings with sufficient cushioning material to prevent contact between cells and between cells and the internal surfaces of the outer packaging, and to ensure that no dangerous movement of the cells within the outer packaging occurs in transport. Cells must be packaged in 1A2, 1B2, 1D, 1G, 1H2, 4C, 4D, 4F, 4G or 4H2 outer packagings which meet the requirements of part 178 of this subchapter at the Packing Group II performance level

(c) Batteries must consist of cells secured within, and fully enclosed by a metal casing so constructed and closed as to prevent the release of the hazardous materials under normal conditions of transport. Batteries may be offered for transportation, and transported, unpacked or in protective packagings that are not subject to the requirements of part 178 of this subchapter.

(d) Batteries containing any liquid sodium may not be offered for transportation, or transported, by aircraft. Batteries containing liquid sodium may be transported by motor vehicle, rail car or vessel under the following conditions.

(1) Batteries must be equipped with an effective means of preventing external short circuits, such as by providing complete electrical insulation of battery terminals or other external electrical connectors. Battery terminals or other electrical connectors penetrating the heat insulation fitted in battery casings must be provided with thermal insulation sufficient to prevent the temperature of the exposed surfaces of such devices from exceeding 55°C (130°F).

(2) No battery may be offered for transportation if the temperature at any point on the external surface of the battery exceeds 55°C (130°F).

(3) If any external source of heating is used during transportation to maintain sodium in batteries in a molten state, means must be provided to ensure that the internal temperature of the battery does not reach or exceed 400°C (752°F).

(4) When loaded in a transport vehicle or freight container:

(i) Batteries must be secured so as to prevent significant movement within the transport vehicle or freight container under conditions normally incident to transportation;

(ii) Adequate ventilation and/or separation between batteries must be provided to ensure that the temperature at any point on the external surface of the battery casing will not exceed 240°C (464°F) during transportation; and

(iii) No other hazardous materials, with the exception of cells containing sodium, may be loaded in the same transport vehicle or freight container. Batteries must be separated from all other freight by a distance of not less than 0 5 meters (1.6 feet).

(e) Batteries containing sodium or cells containing sodium, when installed as part of a motor vehicle, are not subject to the requirements of this subchapter.

§ 173.196 [Amended]

68. In § 173 196, in paragraph (f), the wording "the primary receptacle and secondary packaging" is revised to read "the primary receptacle or secondary packaging".

§ 173.211 [Amended]

69. In § 173.211, in paragraph (c), for the entry "Steel box with liner", the wording "4A2" is revised to read "4A", and for the entry "Aluminum box with liner" the wording "4B2" is revised to read "4B"

§ 173.212 [Amended]

70. In § 173 212, in paragraph (c), for the entry "Steel box" the wording "4A1" is revised to read "4A" for the entry "Steel box with liner" the wording "4A2" is revised to read "4A"; for the entry "Aluminum box" the wording "4B1" is revised to read "4B", and for the entry "Aluminum box with liner:" the wording "4B2" is revised to read "4B".

§ 173.213 [Amended]

71. In § 173.213, in paragraph (c), for the entry "Steel box with liner" the wording "4A2" is revised to read "4A", for the entry "Steel box." the wording "4A1" is revised to read "4A", and for the entry "Aluminum box with liner:" the wording "4B2" is revised to read "4B".

72. Section 173.224 is revised to read as follows.

§ 173.224 Packaging and control and emergency temperatures for self-reactive materials

(a) *General.* When the § 172.101 Table of this subchapter specifies that a Division 4.1 material be packaged in accordance with this section, only packagings which conform to the provisions of this section may be used. Each packaging must conform to the general packaging requirements of subpart B of this part and the applicable requirements of part 178 of this subchapter. Non-bulk packagings must meet Packing Group II performance levels. To avoid unnecessary confinement, metallic non-bulk packagings meeting Packing Group I are not authorized. Self-reactive materials which require temperature control are subject to the provisions of § 173.21(f) Packagings required to bear a Class 1 subsidiary label must conform to §§ 173.60 through 173 62

(b) *Self-Reactive Materials Table* The Self-Reactive Materials Table specifies, by technical name, those self-reactive materials that are authorized for transportation and not subject to the approval provisions of § 173.124(a)(2)(vii). A self-reactive material identified by technical name in the following table is authorized for transportation only if it conforms to all applicable provisions of the table The column headings of the Self-Reactive Materials Table are as follows:

(1) *Technical name* Column 1 specifies the technical name

(2) *ID number.* Column 2 specifies the identification number which is used to identify the proper shipping name in the § 172.101 Table.

(3) *Concentration of self-reactive material.* Column 3 specifies the concentration (percent) limitations, if any, in mixtures or solutions for the self-reactive material. Limitations are given as minimums, maximums, or a range, as appropriate. A range includes the lower and upper limits (i.e., "53–100" means from, and including, 53 percent to, and including 100 percent)

(4) *Packing method.* Column 4 specifies the highest packing method which is authorized for the self-reactive material. A packing method corresponding to a smaller package size may be used, but a packing method corresponding to a larger package size may not be used. The Table of Packing Methods in § 173.225(d) defines the packing methods. Additional bulk packagings are authorized in paragraph (d) of this section for Type F self-reactive materials.

(5) *Control temperature.* Column 5 specifies the control temperature in °C. Temperatures are specified only when temperature controls are required (see § 173.21(f)).

(6) *Emergency temperature.* Column 6 specifies the emergency temperature in °C. Temperatures are specified only when temperature controls are required (see § 173.21(f)).

(7) *Notes.* Column 7 specifies other applicable provisions, as set forth in notes following the table.

SELF-REACTIVE MATERIALS TABLE

Self-reactive substance (1)	Identification number (2)	Concentration—(%) (3)	Packing method (4)	Control temperature—(°C) (5)	Emergency temperature—(°C) (6)	Notes (7)
Azodicarbonamide formulation type B	3232	<100	OP5B			
Azodicarbonamide formulation type C	3234	<100	OP6A			
Azodicarbonamide formulation type D	3236	<100	OP7B			
2,2'-Azodi(2,4-dimethyl-4-methoxyvaleronitrile)	3236	100	OP7B	−5	+5	
2,2'-Azodi(2,4-dimethylvaleronitrile)	3236	100	OP7B	+10	+15	
2,2'-Azodi(ethyl 2-methylpropionate)	3235	100	OP7A	+20	+25	
1,1-Azodi(hexahydrobenzonitrile)	3236	100	OP7B			
2,2'-Azodi(isobutyronitrile)	3234	100	OP6B	+40	45	
2,2'-Azodi(2-methylbutyronitrile)	3236	100	OP7B	+35	+40	
Benzene-1,3-disulphohydrazide, as a paste	3236	52	OP7B			
Benzene sulphohydrazide	3236	100	OP7B			
4-(Benzyl(ethyl)amino)-3-ethoxybenzenediazonium zinc chloride	3236	100	OP7B			
4-(Benzyl(methyl)amino)-3-ethoxybenzenediazonium zinc chloride	3236	100	OP7B	+40	+45	
3-Chloro-4-Diethylamino-benzenediazonium zinc chloride	3236	100	OP7B			
2-Diazo-1-Naphthol-4-sulphochloride	3222	100	OP5B			
2-Diazo-1-Naphthol-5-sulphochloride	3222	100	OP5B			
2,5-Diethoxy-4-morpholino-benzenediazonium zinc chloride	3236	67–100	OP7B	+35	+40	
2,5-Diethoxy-4-morpholino-benzenediazonium zinc chloride	3236	66	OP7B	+40	+45	
2,5-Diethoxy-4-morpholino-benzenediazonium tetrafluoroborate	3236	100	OP7B	+30	+35	
2,5-Diethoxy-4-(phenylsulphonyl)benzenediazonium zinc chloride	3236	67	OP7B	+40	+45	
2,5-Dimethoxy-4-(4-methylphenylsulphony)benzene-diazonium zinc chloride.	3236	79	OP7B	+40	+45	
4-Dimethylamino-6-(2-dimethylaminoethoxy)toluene-2-diazonium zinc chloride.	3236	100	OP7B	+40	+45	
N,N'-Dinitroso-N,N'-dimethyl-terephthalamide, as a paste	3224	72	OP6B			
N,N'Dinitrosopentamethylenetetramine	3224	82	OP6B			1
Diphenyloxide-4,4-Disulphohydrazide	3226	100	OP7B			
4-Dipropylaminobenzenediazonium zinc chloride	3226	100	OP7B			
2-(N,N-Ethoxycarbonylphenylamino)-3-methoxy-4-(N-methyl-N-cyclohexylamino)benzenediazonium zinc chloride.	3236	63–92	OP7B	+40	+45	
2-(N,N-Ethoxycarbonylphenylamino)-3-methoxy-4-(N-methyl-N-cyclohexylamino)benzenediazonium zinc chloride.	3236	62	OP7B	+35	+40	
N-Formyl-2-(nitromethylene)-1,3-perhydrothiazine	3236	100	OP7B	+45	+50	
2-(2-Hydroxyethoxy)-1-(pyrrolidin-1-yl)benzene-4-diazonium zinc chloride.	3236	100	OP7B	+45	+50	
3-(2-Hydroxyethoxy)-4-(pyrrolidin-1-yl)benzenediazonium zinc chloride	3236	100	OP7B	+40	+45	
2-(N,N-Methylaminoethylcarbonyl)-4-(3,4-dimethylphenylsulphonyl)benzene-diazonium zinc chloride.	3236	96	OP7B	+45	+50	
4-Methylbenzenesulphonylhydrazide	3226	100	OP7B	+40	+45	
3-Methyl-4-(pyrrolidin-1-yl) benzenediazonium, tetrafluoroborate	3234	95	OP6B	+45	+50	
4-Nitrosophenol	3236	100	OP7B	+35	+40	
Self-reactive liquid, sample	3223		OP2A			2
Self-reactive liquid, sample, temperature control	3233		OP2A			2
Self-reactive solid, sample	3224		OP2B			2
Self-reactive solid, sample, temperature control	3234		OP2B			2
Sodium 2-diazo-1-naphthol-4-sulphonate	3226	100	OP7B			
Sodium 2-diazo-1-naphthol-5-sulphonate	3226	100	OP7B			
Tetramine palladium (II) nitrate	3234	100	OP6B	+30	+35	

Notes:
1. With a compatible diluent having a boiling point of not less than 150° C.

2 Samples may only be offered for transportation when all available data indicate that the sample is no more dangerous than a self-reactive substance type C, and the sample is packaged using packaging method OP2A for liquids or OP2B for solids, as appropriate, in quantities less than 10 kg per shipment, employing any necessary temperature controls

(c) *New self-reactive materials, formulations and samples* (1) Except as provided for samples in paragraph (c)(4) of this section, no person may offer, accept for transportation, or transport a self-reactive material which is not identified by technical name in the Self-Reactive Materials Table of this section, or a formulation of one or more self-reactive materials which are identified by technical name in the table, unless the self-reactive material is assigned a generic type and shipping description and is approved by the Associate Administrator for Hazardous Materials Safety under the provisions of § 173 124(a)(2)(vii)

(2) Except as provided by an approval issued under § 173.124(a)(2)(vii), intermediate bulk and bulk packagings are not authorized.

(3) Non-bulk packagings are authorized as specified in the Packing Method Table for Generic Types, as follows. Column 1 of the table specifies the generic type by identification number. Column 2 of the table specifies the generic proper shipping name from the § 172.101 Table. Column 3 of the table specifies the series of packing methods authorized for use. The Table of Packing Methods in § 173.225(d) defines the packing methods The Packing Method Table for Generic Types is as follows:

PACKING METHOD TABLE FOR GENERIC TYPES

UN No. (1)	Proper shipping name (2)	Packing method (3)
3221 ...	Self-reactive liquid Type B	OP1A–OP5A
3222	Self-reactive solid Type B.	OP1B–OP5B.
3223	Self-reactive liquid Type C.	OP1A–OP6A.
3224 ...	Self-reactive solid Type C.	OP1B–OP6B.
3225 .. .	Self-reactive liquid Type D.	OP1A–OP7A
3226 .. .	Self-reactive solid Type D.	OP1B–OP7B
3227	Self-reactive liquid Type E.	OP1A–OP8A

PACKING METHOD TABLE FOR GENERIC TYPES—Continued

UN No (1)	Proper shipping name (2)	Packing method (3)
3228	Self-reactive solid Type E	OP1B–OP8B
3229	Self-reactive liquid Type F	OP1A–OP8A
3230	Self-reactive solid Type F	OP1B–OP8B.
3231	Self-reactive liquid Type B, temperature controlled.	OP1A–OP5A.
3232	Self-reactive solid Type B, temperature controlled.	OP1B–OP6B.
3233	Self-reactive liquid Type C, temperature controlled.	OP1A–OP6A.
3234	Self-reactive solid Type C, temperature controlled.	OP1B–OP7B
3235	Self-reactive liquid Type D, temperature controlled.	OP1A–OP7A.
3236	Self-reactive solid Type D, temperature controlled.	OP1B–OP8B.
3237	Self-reactive liquid Type E, temperature controlled.	OP1A–OP8A.
3238	Self-reactive solid Type E, temperature controlled.	OP1B–OP8B.
3239	Self-reactive liquid Type F, temperature controlled.	OP1A–OP8A
3240	Self-reactive solid Type F, temperature controlled.	OP1B–OP8B.

(4) *Samples* Samples of new self-reactive materials or new formulations of self-reactive materials identified in the Self-Reactive Materials Table in paragraph (b) of this section, for which complete test data are not available, and which are to be transported for further testing or evaluation, may be assigned an appropriate shipping description for Self-reactive materials Type C, packaged and offered for transportation under the following conditions

(i) Data available to the person offering the material for transportation must indicate that the sample would pose a level of hazard no greater than that of a self-reactive material Type B and that the control temperature, if any, is sufficiently low to prevent any dangerous decomposition and sufficiently high to prevent any dangerous phase separation,

(ii) The sample must be packaged in accordance with packing method OP2A or OP2B, for a liquid or a solid, respectively;

(iii) Packages of the self-reactive material may be offered for transportation and transported in a quantity not to exceed 10 kg (22 pounds) per transport vehicle; and

(iv) One of the following shipping descriptions must be assigned:

(A) Self-reactive, liquid, type C, 4 1, UN3223.

(B) Self-reactive, solid, type C, 4.1, UN3224.

(C) Self-reactive, liquid, type C, temperature controlled, 4.1, UN3233.

(D) Self-reactive, solid, type C, temperature controlled, 4.1, UN3234.

(d) Self-reactive substances of Type F may not be transported in bulk or intermediate bulk containers except as approved, in writing, by the Associate Administrator for Hazardous Materials Safety.

73. In § 173.225, the fourth sentence of paragraph (a) and the Organic Peroxides Table in paragraph (b) are revised, a new paragraph (c)(5) is added, and paragraph (e)(3)(ii) is revised to read as follows *§ 173 225 Packaging requirements and other provisions for organic peroxides.*

(a) * * * To avoid unnecessary confinement, metallic non-bulk packagings meeting Packing Group I are not authorized. * * *

(b) * * *

BILLING CODE 4910-60-P

ORGANIC PEROXIDES TABLE

Technical Name. (1)	ID Number (2)	Concentration (Mass %) (3)	Diluent (Mass %) A (4a)	B (4b)	I (4c)	Water (Mass %) (5)	Packing Method (6)	Temperature(°C) Control (7a)	Emergency (7b)	Notes (8)
Acetyl acetone peroxide	UN3105	≤42	≥48			≥8	OP7A			2

ORGANIC PEROXIDES TABLE—Continued

Technical Name (1)	ID Number (2)	Concentration (Mass %) (3)	Diluent (Mass %) A (4a)	B (4b)	I (4c)	Water (Mass %) (5)	Packing Method (6)	Temperature (°C) Control (7a)	Emergency (7b)	Notes (8)
Acetyl acetone peroxide as a paste	UN3106	≤32					OP7B			21
Acetyl benzoyl peroxide	UN3105	≥45	≥55				OP7A			
Acetyl cyclohexanesulfonyl peroxide	UN3112	≤82				≥12	OP4B	-10	0	
Acetyl cyclohexanesulfonyl peroxide	UN3115	≤32		≥68			OP7A	-10	0	
tert-Amyl hydroperoxide	UN3107	≤88	≥6			≥6	OP8A			
tert-Amyl peroxyacetate	UN3107	≤62	≥38				OP8A			
tert-Amyl peroxybenzoate	UN3105	≤96	≥4				OP7A			
tert-Amyl peroxy-2-ethylhexanoate	UN3115	≤100					OP7A	+20	+25	
tert-Amyl peroxy-2-ethylhexyl carbonate	UN3105	≤100					OP7A			
tert-Amyl peroxyneodecanoate	UN3115	≤77		≥23			OP7A	0	+10	
tert-Amyl peroxypivalate	UN3113	≤77		≥23			OP5A	+10	+15	
tert-Amylperoxy-3,5,5-trimethylhexanoate	UN3101	≤100					OP5A			
2,2-Bis(4,4-di(tert-butylperoxy)cyclohexyl)propane	UN3107	≤25		≥75			OP8A			
tert-Butyl cumyl peroxide	UN3108	>42 - 100					OP7A			1, 9
tert-Butyl cumyl peroxide	UN3106	≤42			≥58		OP7B			1, 9
n-Butyl-4,4-di-(tert-butylperoxy)valerate	UN3103	>52 - 100					OP5A			
n-Butyl-4,4-di-(tert-butylperoxy)valerate	UN3108	>42 - 52			≥48		OP7B			
n-Butyl-4,4-di-(tert-butylperoxy)valerate	UN3108	≤42			≥58		OP8B			
tert-Butyl hydroperoxide	UN3103	>79 - 90				≥10	OP5A			13
tert-Butyl hydroperoxide	UN3105	≤80	≥20				OP7A			4, 13
tert-Butyl hydroperoxide	UN3107	≤79				≤14	OP8A			13, 16
tert-Butyl hydroperoxide	UN3109	≤72				≥28	OP8A			7, 13
tert-Butyl hydroperoxide and Di-tert-butylperoxide	UN3105	<82 + >9				≥7	OP5A			13
tert-Butyl monoperoxymaleate	UN3102	>52 - 100					OP5B			
tert-Butyl monoperoxymaleate	UN3103	≤52	≥48				OP6A			
tert-Butyl monoperoxymaleate	UN3108	≤82			≥48		OP6B			
tert-Butyl monoperoxymaleate as a paste	UN3108	≤52					OP6B			21
tert-Butyl monoperoxymaleate as a paste	UN3010	≤42					OP6B			21
tert-Butyl monoperoxyphthalate	UN3102	≥100					OP5B			
tert-Butyl peroxyacetate	UN3101	>52 - 77	≥23				OP5A			
tert-Butyl peroxyacetate	UN3103	>32 - 52	≥48				OP6A			6
tert-Butyl peroxyacetate	UN3109	≤32	≥68				OP8A			10
tert-Butyl peroxyacetate	UN3119	≤32		≥68				+30	+35	7
tert-Butyl peroxyacetate	UN3109	≤22		≥78			OP8A			14
tert-Butyl peroxybenzoate	UN3103	>77 - 100	≥22				OP5A			
tert-Butyl peroxybenzoate	UN3105	>52 - 77	≥23				OP7A			1
tert-Butyl peroxybenzoate	UN3108	≤52			≥48		OP7B			
tert-Butyl peroxybutyl fumarate	UN3105	≤52	≥48				OP7A			
tert-Butyl peroxycrotonate	UN3105	≤77	≥23				OP7A			
tert-Butyl peroxydiethylacetate	UN3113	≤100					OP5A	+20	+25	
tert-Butyl peroxydiethylacetate and tert-Butyl peroxybenzoate	UN3105	≥33 + ≤33	≥33				OP7 A			
tert-Butyl peroxy-2-ethylhexanoate	UN3113	>88 - 100					OP5A	+20	+25	
tert-Butyl peroxy-2-ethylhexanoate	UN3117	>32 - 52		≥48			OP6A	+30	+35	
tert-Butyl peroxy-2-ethylhexanoate	UN3118	≤52			≥48		OP6B	+20	+25	
tert-Butyl peroxy-2-ethylhexanoate	UN3119	≤32		≥68			OP6A	+40	+45	
tert-Butyl peroxy-2-ethylhexanoate	UN3119	≤52		≥48				+30	+35	10
tert-Butyl peroxy-2-ethylhexanoate	UN3119	≤32		≥68				+10	+15	14
tert-Butyl peroxy-2-ethylhexanoate and 2,2-di-(tert-Butylperoxy)butane	UN3115	≤31 + ≤36		≥33			OP7A	+35	+40	
tert-Butyl peroxy-2-ethylhexanoate and 2,2-di-(tert-Butylperoxy)butane	UN3108	≤12 + ≤14	≥14		≥60		OP7B			
tert-Butyl peroxy-2-ethylhexylcarbonate	UN3105	≤100					OP7A			
tert-Butyl peroxyisobutyrate	UN3111	>52 - 77		≥23			OP5A	+15	+20	
tert-Butyl peroxyisobutyrate	UN3115	≤52		≥48			OP7A	+15	+20	
tert-Butylperoxy isopropylcarbonate	UN3103	≤77	≥23				OP5A			
1-(2-tert-Butylperoxy isopropyl)-3-isopropenylbenzene	UN3105	≤77	≥23				OP7A			
1-(2-tert-Butylperoxy isopropyl)-3-isopropenylbenzene	UN3108	≤42			≥58		OP8B			
tert-Butyl peroxy-2-methylbenzoate	UN3103	≤100					OP5A			
tert-Butyl peroxyneodecanoate	UN3115	>77 - 100					OP7A	-5	+5	
tert-Butyl peroxyneodecanoate	UN3115	≤77		≥23			OP7A	0	+10	
tert-Butyl peroxyneodecanoate as a paste	UN3117	≤42					OP6A	0	+10	21
tert-Butyl peroxyneodecanoate as a paste (frozen)	UN3118	≤42					OP6B	0	+10	21
tert-Butyl peroxyneoheptanoate	UN3115	≤77	≥23				OP7A	+10	+15	
3-tert-Butylperoxy-3-phenylphthalide	UN3108	≤100					OP7B			
tert-Butyl peroxypivalate	UN3113	>67 - 77	≥23				OP5A	0	+10	
tert-Butyl peroxypivalate	UN3115	>27 - 67		≥33			OP7A	0	+10	
tert-Butyl peroxypivalate	UN3119	≤27		≥73			OP8A	+30	+35	
tert-Butyl peroxypivalate	UN3119	≤27		≥73				+10	+15	10
tert-Butyl peroxypivalate	UN3119	≤27		≥73				-5	+5	14
tert-Butylperoxy stearylcarbonate	UN3108	≤100					OP7B			
tert-Butyl peroxy-3,5,5-trimethylhexanoate	UN3105	>32 - 100					OP7A			
tert-Butyl peroxy-3,5,5-trimethylhexanoate	UN3109	≤32	≥68				OP8A			10
tert-Butyl peroxy-3,5,5-trimethylhexanoate	UN3119	≤32		≥68				+35	+40	14
3-Chloroperoxybenzoic acid	UN3102	>57 - 86			≥14		OP1B			
3-Chloroperoxybenzoic acid	UN3106	≤72			≥10	≥18	OP7B			
3-Chloroperoxybenzoic acid	UN3106	≤57			≥3	≥40	OP7B			
Cumyl hydroperoxide	UN3107	>90 - 98	≤10				OP8A			13
Cumyl hydroperoxide	UN3109	≤90	≥10				OP8A			7, 13, 15
Cumyl peroxyneodecanoate	UN3115	≤77		≥23			OP7A	-10	0	
Cumyl peroxyneoheptanoate	UN3115	≤77	≥23				OP7A	0	-10	
Cumyl peroxypivalate	UN3115	≤77		≥23			OP7A	-5	+5	
Cyclohexanone peroxide(s)	UN3104	≤91				≥9	OP8B			13
Cyclohexanone peroxide(s)	UN3105	≤72		≥28			OP7A			5
Cyclohexanone peroxide(s)	Exempt	≤32			≥68		Exempt			
Cyclohexanone peroxide(s) as a paste	UN3106	≤72					OP7B			5, 21
Diacetone alcohol peroxides	UN3115	≤57		≥26		≥8	OP7A	+40	+45	5
Diacetyl peroxide	UN3115	≤27		≥73			OP7A	+20	+25	8

ORGANIC PEROXIDES TABLE—Continued

Technical Name (1)	ID Number (2)	Concentration (Mass %) (3)	Diluent (Mass %) A (4a)	B (4b)	I (4c)	Water (Mass %) (5)	Packing Method (6)	Temperature(°C) Control (7a)	Emergency (7b)	Notes (8)
Diacetyl peroxide	UN3115	≤27		≥73			OP7A	+20	+25	8, 13
Di-tert-amyl peroxide	UN3107	≤100					OP8A			
1 1-Di-(tert-amylperoxy)cyclohexane	UN3103	≤82	≥18				OP6A			
Dibenzoyl peroxide	UN3102	>51 - 100			≤48		OP2B			3
Dibenzoyl peroxide	UN3102	>77 - 94				≥6	OP4B			3
Dibenzoyl peroxide	UN3104	≤77				≥23	OP5B			
Dibenzoyl peroxide	UN3106	≤62			≥28	≥10	OP7B			
Dibenzoyl peroxide	UN3106	>35 - 52			≥48		OP7B			
Dibenzoyl peroxide	UN3107	>36 - 42	≥18			≤40	OP8A			
Dibenzoyl peroxide	UN3107	>36 - 42	≥58				OP8A			
Dibenzoyl peroxide as a paste	Exempt	≤35			≥65		Exempt			
Dibenzoyl peroxide as a paste	UN3106	>52 - 62					OP7B			
Dibenzoyl peroxide as a paste	UN3108	≤56				≥15	OP8B			21
Dibenzoyl peroxide as a paste	UN3108	≤62					OP8B			
Dibenzyl peroxydicarbonate	Exempt	≤50				≥18	Exempt			21
Di-(4-tert-butylcyclohexyl)peroxydicarbonate	UN3112	≤87				≥13	OP5B	+25	+30	21
Di-(4-tert-butylcyclohexyl)peroxydicarbonate as a stable dispersion in water	UN3114	≤100					OP6B	+30	+35	
Di-tert-butyl peroxide	UN3119	≤42					OP8A	+30	+35	10
Di-tert-butyl peroxide	UN3107	>32 - 100					OP8A			
Di-tert-butyl peroxide	UN3109	≤32	≥68				OP8A			7
Di-tert-butyl peroxyazelate	UN3109	≤22		≥78			OP8A			7
2,2-Di-(tert-butylperoxy)butane	UN3105	≤52	≥48				OP7A			
1 1-Di-(tert-butylperoxy)cyclohexane	UN3103	≤52	≥48				OP5A			
1 1-Di-(tert-butylperoxy)cyclohexane	UN3101	>80 - 100					OP5A			
1,1-Di-(tert-butylperoxy)cyclohexane	UN3103	>52 - 80	≥20				OP5A			
1,1-Di-(tert-butylperoxy)cyclohexane	UN3105	≤52	≥48				OP7A			
1,1-Di-(tert-butylperoxy)cyclohexane	UN3106	≤42	≥13		≥45		OP7B			
1,1-Di-(tert-butylperoxy)cyclohexane	UN3107	≤27	≥36				OP8A			
1 1-Di-(tert-butylperoxy)cyclohexane	UN3109	≤25	≥25	≥50			OP8A			22
Di-n-butyl peroxydicarbonate	UN3109	≤13	≥13	≥74			OP8A			7
Di-n-butyl peroxydicarbonate	UN3115	>27 - 52		≥48			OP7A	-15	-5	7
Di-sec-butyl peroxydicarbonate	UN3117	≤27		≥73			OP8A	-10	0	
Di-sec-butyl peroxydicarbonate	UN3113	>52 - 100					OP4A	-20	-10	6
Di-(2-tert-butylperoxyisopropyl)benzene(s)	UN3115	≤52		≥48			OP7A	-15	-5	
Di-(2-tert-butylperoxyisopropyl)benzene(s)	UN3108	>42 - 100			≤57		OP7B			1 9
Di-(tert-butylperoxy)phthalate	Exempt	≤42			≥58		Exempt			
Di-(tert-butylperoxy)phthalate	UN3105	>42 - 52	≥48				OP7A			
Di-(tert-butylperoxy)phthalate as a paste	UN3107	≤42	≥58				OP8A			
2,2-Di-(tert-butylperoxy)propane	UN3106	≤52					OP7B			
2,2-Di-(tert-butylperoxy)propane	UN3105	≤52	≥48				OP7A			21
1,1-Di-(tert-butylperoxy)-3,3,5-trimethylcyclohexane	UN3106	≤42	≥13		≥45		OP7B			
1 1-Di-(tert-butylperoxy)-3,3 5-trimethylcyclohexane	UN3101	>90 - 100					OP5A			
1 1-Di-(tert-butylperoxy)-3,3,5-trimethylcyclohexane	UN3103	>57 - 90	≥10				OP5A			
1,1-Di-(tert-butylperoxy)-3,3 5-trimethylcyclohexane	UN3106	≤57			≥43		OP7B			
1,1-Di-(tert-butylperoxy)-3,3,5-trimethylcyclohexane	UN3107	≤57	≥43				OP8A			
Dicetyl peroxydicarbonate	UN3107	≤32	≥68	≥42			OP8A			
Dicetyl peroxydicarbonate as a stable dispersion in water	UN3116	≤100					OP7B	+20	+25	
Di-4-chlorobenzoyl peroxide	UN3119	≤42					OP8A	+30	+35	10
Di-4-chlorobenzoyl peroxide	UN3102	≤77				≥23	OP5B			
Di-4-chlorobenzoyl peroxide as a paste	Exempt	≤32			≥68		Exempt			
Dicumyl peroxide	UN3106	≤52					OP7B			21
Dicumyl peroxide	UN3109	>42 - 100					OP8A			7, 9, 11
Dicumyl peroxide	UN3110	>42 - 100			≤57		OP8B			7, 9, 11
Dicumyl peroxide	Exempt	≤52	≥48				Exempt			
Dicyclohexyl peroxydicarbonate	Exempt	≤42			≥58		Exempt			
Dicyclohexyl peroxydicarbonate	UN3112	>91 - 100					OP3B	+5	+10	
Didecanoyl peroxide	UN3114	≤91				≥9	OP5B	+5	+10	
2,2-Di-(4,4-di(tert-butylperoxy)cyclohexyl)propane	UN3106	≤100					OP6B	+30	+35	
Di-2,4-dichlorobenzoyl peroxide	UN3106	≤42			≥58		OP7B			
Di-2,4-dichlorobenzoyl peroxide as a paste with silicone oil	UN3102	≤77				≥23	OP5B			
Di-(2-ethylhexyl) peroxydicarbonate	UN3106	≤52					OP7B			
Di-(2-ethylhexyl) peroxydicarbonate	UN3113	>77 - 100					OP5A	-20	-10	
Di-(2-ethylhexyl) peroxydicarbonate as a stable dispersion in water	UN3115	≤77					OP7A	-15	-5	
Di-(2-ethylhexyl) peroxydicarbonate as a stable dispersion in water (frozen)	UN3117	≤42					OP8A	-15	-5	
Diethyl peroxydicarbonate	UN3118	≤42					OP8B	-15	-5	
2,2-Dihydroperoxypropane	UN3115	≤27	≥73				OP7A	-10	0	
Di-(1-hydroxycyclohexyl)peroxide	UN3102	≤27		≥73			OP5B			
Diisobutyryl peroxide	UN3106	≤100					OP7B			
Diisobutyryl peroxide	UN3111	>32 - 52	≥48				OP5A	-20	-10	
Di-isopropylbenzene dihydroperoxide	UN3115	≤32	≥68				OP7A	-20	-10	
Diisopropyl peroxydicarbonate	UN3106	≤82				≥5	OP7B			17
Diisopropyl peroxydicarbonate	UN3112	>52 - 100					OP2B	-15	-5	
Diisotridecyl peroxydicarbonate	UN3115	≤52	≥48				OP7A	-10	0	
Dilauroyl peroxide	UN3115	≤100					OP7A	-10	0	
Dilauroyl peroxide as a stable dispersion in water	UN3106	≤100					OP7B			
Di-(2-methylbenzoyl) peroxide	UN3109	≤42					OP8A			10
Di-(4-methylbenzoyl)peroxide as a paste with silicone oil	UN3112	≤87				≥13	OP5B	+30	+35	
2,5-Dimethyl-2,5-di-(benzoylperoxy)hexane	UN3106	≤52					OP7B			
2 5-Dimethyl-2,5-di-(benzoylperoxy)hexane	UN3102	>82 - 100					OP5B			
2 5-Dimethyl-2,5-di-(benzoylperoxy)hexane	UN3104	≤82				≥18	OP5B			
2 5-Dimethyl-2,5-di-(tert-butylperoxy)hexane	UN3106	≤82		≥18			OP7B			
2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexyne-3	UN3105	>52 - 100					OP7A			
2 5-Dimethyl-2,5-di-(tert-butylperoxy)hexane	UN3103	>52 - 100					OP5A			
2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexane	UN3106	≤70		≥30			OP7B			
2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexyne-3	UN3109	≤52	≥48				OP8A			7
2 5-Dimethyl-2,5-di-(tert-butylperoxy)hexane as a paste	UN3106	≤52		≥48			OP8B			
2 5-Dimethyl-2,5-di-(2-ethylhexanoylperoxy)hexane	UN3109	≤47					OP8B			
2,5-Dimethyl-2,5-dihydroperoxyhexane	UN3115	≤100					OP7A	+20	+25	
	UN3104	≤82				≥18	OP8B			

ORGANIC PEROXIDES TABLE—Continued

Technical Name (1)	ID Number (2)	Concentration (Mass %) (3)	Diluent (Mass %) A (4a)	B (4b)	I (4c)	Water (Mass %) (5)	Packing Method (6)	Temperature(°C) Control (7a)	Emergency (7b)	Notes (8)
2,5-Dimethyl-2 5-di-(3 5 5-trimethylhexanoylperoxy)hexane	UN3105	≤77	≥23				OP7A			
1 1-Dimethyl-3-hydroxybutylperoxyneoheptanoate	UN3117	≤52		≥48			OP8A	+0	+10	
Dimyristyl peroxydicarbonate	UN3116	≤100					OP7B	+20	+25	
Dimyristyl peroxydicarbonate *as a stable dispersion in water*	UN3119	≤42					OP8A	+20	+25	
Dimyristyl peroxydicarbonate *as a stable dispersion in water*	UN3119	≤42						+15	+25	10
Di-(2-neodecanoylperoxyisopropyl) benzene	UN3115	≤52	≥48				OP7A	-10	0	
Di-n-nonanoyl peroxide	UN3116	≤100					OP7B	0	+10	
Di-n-octanoyl peroxide	UN3114	≤100					OP5B	+10	+15	
Diperoxy azelaic acid	UN3116	≤27			≥73		OP7B	+35	+40	
Diperoxy dodecane diacid	UN3118	>13 - 42			≥58		OP7B	+40	+45	
Diperoxy dodecane diacid	Exempt	≤13			≥87		Exempt			
Di-(2-phenoxyethyl)peroxydicarbonate	UN3102	>85 - 100					OP5B			
Di-(2-phenoxyethyl)peroxydicarbonate	UN3106	≤85				≥15	OP7B			
Dipropionyl peroxide	UN3117	≤27		≥73			OP8A	+15	+20	
Di-n-propyl peroxydicarbonate	UN3113	≤100					OP4A	-25	-15	
Distearyl peroxydicarbonate	UN3106	≤87			≥13		OP7B			
Disuccinic acid peroxide	UN3102	>72 - 100					OP4B			18
Disuccinic acid peroxide	UN3116	≤72				≥28	OP7B	+10	+15	18
Di-(3,5,5-trimethyl-1,2-dioxolanyl-3) peroxide *as a paste*	UN3116	≤52					OP7B	+30	+35	21
Di-(3,5,5-trimethylhexanoyl)peroxide	UN3115	>38 - 82	≥18				OP7A	0	+10	
Di-(3,5,5-trimethylhexanoyl)peroxide	UN3119	≤38	≥62				OP8A	+20	+25	
Di-(3,5,5-trimethylhexanoyl)peroxide	UN3119	≤38	≥62					+10	+15	10
Di-(3,5,5-trimethylhexanoyl)peroxide	UN3119	≤38	≥62					-10	0	14
Di-(3,5,5-trimethylhexanoyl)peroxide *as a stable dispersion in water*	UN3117	≤52					OP8A	+10	+15	
Ethyl 3,3-di-(tert-amylperoxy)butyrate	UN3105	≤67	≥33				OP7A			
Ethyl 3,3-di-(tert-butylperoxy)butyrate	UN3103	>77 - 100					OP5A			
Ethyl 3,3-di-(tert-butylperoxy)butyrate	UN3105	≤77	≥23				OP7A			
Ethyl 3,3-di-(tert-butylperoxy)butyrate	UN3106	≤52			≥48		OP7B			
3,3,6,6,9,9-Hexamethyl-1,2,4,5-tetraoxacyclononane	UN3102	>52 - 100					OP4B			
3,3,6,6,9,9-Hexamethyl-1,2,4,5-tetraoxacyclononane	UN3105	≤52	≥48				OP7A			
3,3,6,6,9,9-Hexamethyl-1,2,4,5-tetraoxacyclononane	UN3106	≤52			≥48		OP7B			
Isopropylcumyl hydroperoxide	UN3109	≤72	≥28				OP8A			7 13
p-Menthyl hydroperoxide	UN3105	> 56 - 100					OP7A			13
p-Menthyl hydroperoxide	UN3109	< 56	≤ 44				OP8A			7
Methyl ethyl ketone peroxide(s)	UN3101	≤52	≥48				OP5A			5, 13
Methyl ethyl ketone peroxide(s)	UN3105	≤45	≥55				OP7A			5
Methyl ethyl ketone peroxide(s)	UN3107	≤40	≥60				OP8A			5
Methyl isobutyl ketone peroxide(s)	UN3105	≤62	≥19				OP7A			5, 23
Methylcyclohexanone peroxide(s)	UN3115	≤67		≥33			OP7A	+35	+40	
Organic peroxide, liquid, sample	UN3103						OP2A			12
Organic peroxide, liquid, sample, temperature controlled	UN3113						OP2A			12
Organic peroxide solid, sample	UN3104						OP2B			12
Organic peroxide solid, sample, temperature controlled	UN3114						OP2B			12
Peracetic acid with 20% hydrogen peroxide	Exempt	< 6				≥60	Exempt			
Peracetic acid with 7% hydrogen peroxide	UN3107	≤36				≥15	OP8A			
Peroxyacetic acid, type D, stabilized	UN3105	≤43					OP7A			13, 20
Peroxyacetic acid, type E, stabilized	UN3107	≤43					OP8A			13, 20
Peroxyacetic acid, type F, stabilized	UN3109	≤43					OP8A			13, 20
Pinanyl hydroperoxide	UN3105	> 56 - 100					OP7A			13
Pinanyl hydroperoxide	UN3109	< 56	≤ 44				OP8A			7
Tetrahydronaphthyl hydroperoxide	UN3106	≤100					OP7B			
1 1,3,3-Tetramethylbutyl hydroperoxide	UN3105	≤100					OP7A			
1,1,3,3-Tetramethylbutylperoxy-2-ethylhexanoate	UN3115	≤100					OP7A	+20	+25	
2,4 4-Trimethylpentyl-2-peroxyneodecanoate	UN3115	≤72		≥28			OP7A	-5	+5	
2 4 4-Trimethylpentyl-2-peroxy phenoxyacetate	UN3115	≤37		≥63			OP7A	-10	0	

BILLING CODE 4910-60-F

Notes:

1. For domestic shipments, OP8A is authorized
2. Available oxygen must be <4.7 percent.
3. For concentrations <80 percent OP5B is allowed. For concentrations of at least 80 percent but <85 percent, OP4B is allowed For concentrations of at least 85 percent, maximum package size is OP2B
4. The diluent may be replaced by di-tert-butyl peroxide.
5. Available oxygen must be ≤9 percent.
6. For domestic shipments, OP5A is authorized.
7. This material may be transported in intermediate bulk containers and bulk packagings under the provisions of § 173.225(a)
8. Only non-metallic packagings are authorized.
9. For domestic shipments, this material may be transported in bulk packagings under the provisions of § 173.225(e)(3)(c)(ii).
10. This material may be transported in intermediate bulk containers under the provisions of § 173 225(e)
11. Up to 2000 kg per container authorized.
12. Samples may only be offered for transportation when all available data indicate that the sample is no more dangerous than an Organic Peroxide type C, and the sample is packaged using packaging method OP2A for liquids or OP2B for solids, as appropriate, in quantities less than 10 kg per shipment, employing any necessary temperature controls.
13. "Corrosive" subsidiary risk label is required.
14. This material may be transported in bulk packagings under the provisions of § 173 225(e)
15. No "Corrosive" subsidiary risk label is required for concentrations below 80%
16. With <6% di-tert-butyl peroxide
17. With <=8% 1-isopropylhydroperoxy-4-isopropylhydroxybenzene.
18. Addition of water to this organic peroxide will decrease its thermal stability
19. [Reserved]
20. Mixtures with hydrogen peroxide, water and acid(s).

21 With diluent type A, with or without water
22 With >36 percent, by mass, ethylbenzene
23 With >19 percent, by mass, methyl isobutyl ketone.

(c) * * *

(5) *Mixtures* Mixtures of organic peroxides individually identified in the Organic Peroxides Table in paragraph (b) of this section may be classified as the same type of organic peroxide as that of the most dangerous component and be transported under the conditions for transportation given for this type. If the stable components form a thermally less stable mixture, the SADT of the mixture must be determined and the new control and emergency temperature derived under the provisions of § 173.21(f).

* * * * *

(e) * * *

(3) * * *

(ii) Specification 57 metal portable tanks are authorized only for tert-butyl cumyl peroxide, di-(2-tert-butylperoxyisopropyl-benzene(s), dicumyl peroxide and mixtures of two or more of these peroxides.

* * * * *

§ 173.226 [Amended]

74 In § 173.226(c)(1), in the entry for "Steel box", the wording "4A1 or 4A2" is removed and the wording "4A" is added in its place; and in the entry for "Aluminum box", the wording "4B1 and 4B2" is removed and the wording "4B" is added in its place

§ 173.304 [Amended]

75. In § 173 304, in the paragraph (a)(2) table, for the entry "Carbon dioxide", in Column 3, "DOT–311800" is removed and replaced with "DOT–3T1800".

76 In § 173.306, a new paragraph (a)(4) is added and paragraph (a)(3)(v) is revised to read as follows:

§ 173.306 Limited quantities of compressed gases.

(a) * * *

(3) * * *

(v) Each container must be subjected to a test performed in a hot water bath, the temperature of the bath and the duration of the test must be such that the internal pressure reaches that which would be reached at 55°C (131°F) (50°C (122°F) if the liquid phase does not exceed 95% of the capacity of the container at 50°C (122°F)). If the contents are sensitive to heat or if the containers are made of plastic material which softens at this test temperature, the temperature of the bath must be set at between 20°C (68°F) and 30°C (86°F) but, in addition, one container in 2,000 must be tested at the higher temperature No leakage or permanent deformation of a container may occur, except that a plastic container may be deformed through softening provided that it does not leak.

* * * * *

(4) Gas samples must be transported under the following conditions.

(i) A gas sample may only be transported as non-pressurized gas when its pressure corresponding to ambient atmospheric pressure in the container is not more than 105 kPa absolute (15.22 psia).

(ii) Non-pressurized gases, toxic (or toxic and flammable) must be packed in hermetically sealed glass or metal inner packagings of not more than one L (0.3 gallons) overpacked in a strong outer packaging.

(iii) Non-pressurized gases, flammable must be packed in hermetically-sealed glass or metal inner packagings of not more than 2.5 L (0.5 gallons) overpacked in a strong outer packaging.

* * * * *

Appendix A to Part 173 [Removed and Reserved]

77. Appendix A to part 173 is removed and reserved.

78. In Appendix E to part 173, paragraph 2.b (4) is redesignated as paragraph 2.b.(5) and a new paragraph 2.b.(4) is added to read as follows:

Appendix E to Part 173—Guidelines for the Classification and Packing Group Assignment of Class 4 Materials

* * * * *

2 * * *

b * * *

(4) A self-reactive material shall be regarded as possessing explosive properties when, in laboratory testing, its formulation is determined to be liable to detonate, deflagrate rapidly or show a violent effect when heated under confinement.

* * * * *

Appendix E to Part 173 [Amended]

79 In addition, in Appendix E to part 173, in paragraph 2.c.(3)(B), the wording "Powders of metals or metal alloys are classified when they can be ignited" is revised to read "Powders of metals or metal alloys are classified in Division 4.1 when they can be ignited".

Appendix F to Part 173 [Amended]

80. In Appendix F to part 173, in paragraph 1., the phrase "Division 4.1" is removed and replaced with "Division 5 1".

81. Appendix H is added to part 173 to read as follows:

Appendix H to Part 173—Method of Testing for Sustained Combustibility

1 Method

The method describes a procedure for determining if the material when heated under the test conditions and exposed to an external source of flame applied in a standard manner sustains combustion

2 Principle of the method

A metal block with a concave depression (test portion well) is heated to a specified temperature. A specified volume of the material under test is transferred to the well, and its ability to sustain combustion is noted after application and subsequent removal of a standard flame under specified conditions

3 Apparatus

A combustibility tester consisting of a block of aluminum alloy or other corrosion-resistant metal of high thermal conductivity is used. The block has a concave well and a pocket drilled to take a thermometer A small gas jet assembly on a swivel is attached to the block. The handle and gas inlet for the gas jet may be fitted at any convenient angle to the gas jet. A suitable apparatus is shown in Figure 5.1 of the UN Recommendations, and the essential dimensions are given in Figures 5.1 and 5.2 of the UN Recommendations. The following equipment is needed

(a) *Gauge*, for checking that the height of the center of the gas jet above the top of the test portion well is 2.2 mm (see Figure 5.1).

(b) *Thermometer*, mercury in glass, for horizontal operation, with a sensitivity not less than 1 mm/°C, or other measuring device of equivalent sensitivity permitting reading at 0 5°C intervals. When in position in the block, the thermometer bulb must be surrounded with thermally conducting thermoplastic compound;

(c) *Hotplate*, fitted with a temperature-control device. (Other types of apparatus with suitable temperature-control facilities may be employed to heat the metal block).

(d) *Stopwatch*, or other suitable timing device,

(e) *Syringe*, capable of delivering 2 ml to an accuracy of ±0.1 ml; and

(f) *Fuel source*, butane test fuel.

4 Sampling

The sample must be representative of the material to be tested and must be supplied and kept in a tightly closed container prior to test Because of the possibility of loss of volatile constituents, the sample must receive only the minimum treatment necessary to ensure its homogeneity After removing each test portion, the sample container must be immediately closed tightly to ensure that no volatile components escape from the container; if this closure is incomplete, an entirely new sample must be taken

5. Procedure

Carry out the determination in triplicate

WARNING—Do not carry out the test in a small confined area (for example a glove box) because of the hazard of explosions

(a) It is essential that the apparatus be set up in a completely draft-free area (see warning) and in the absence of strong light to facilitate observation of flash, flame, etc

(b) Place the metal block on the hotplate or heat the metal block by other suitable means so that its temperature, as indicated by the thermometer placed in the metal block, is maintained at the specified temperature within a tolerance of ±1°C. The test temperature is 60 5°C or 75°C, (see (h)) Correct this temperature for the difference in barometric pressure from the standard atmospheric pressure (101.3 kPa) by raising the test temperature for a higher pressure or lowering the test temperature for a lower pressure by 1 0°C for each 4 kPa difference. Ensure that the top of the metal block is exactly horizontal Use the gauge to check that the jet is 2 2 mm above the top of the well when in the test position

(c) Light the butane test fuel with the jet away from the test position (i.e. in the "off" position, away from the well). Adjust the size of the flame so that it is 8 mm to 9 mm high and approximately 5 mm wide.

(d) Using the syringe, take from the sample container at least 2 ml of the sample and rapidly transfer a test portion of 2 ml ±0.1 ml to the well of the combustibility tester and immediately start the timing device.

(e) After a heating time of 60 seconds (s), by which time the test portion is deemed to have reached its equilibrium temperature, and if the test fluid has not ignited, swing the test flame into the test position over the edge of the pool of liquid. Maintain it in this position for 15 s and then return it to the "off" position while observing the behavior of the test portion The test flame must remain lighted throughout the test.

(f) For each test observe and record·

(i) whether there is ignition and sustained combustion or flashing, or neither, of the test portion before the test flame is moved into the test position;

(ii) whether the test portion ignites while the test flame is in the test position, and, if so, how long combustion is sustained after the test flame is returned to the "off" position

(g) If sustained combustion interpreted in accordance with paragraph 6. of this appendix is not found, repeat the complete procedure with new test portions, but with a heating time of 30 s.

(h) If sustained combustion interpreted in accordance with paragraph 6. of this appendix is not found at a test temperature of 60 5°C (141°F), repeat the complete procedure with new test portions, but at a test temperature of 75°C (167°F)

6 Interpretation of observations

The material must be assessed either as not sustaining combustion or as sustaining combustion. Sustained combustion must be reported at either of the heating times if one of the following occurs with either of the test portions·

(a) When the test flame is in the "off" position, the test portion ignites and sustains combustion;

(b) The test portion ignites while the test flame is in the test position for 15 s, and sustains combustion for more than 15 s after the test flame has been returned to the "off" position

Note to Paragraph 6. of this Appendix: Intermittent flashing may not be interpreted as sustained combustion. Normally, at the end of 15 s, the combustion has either clearly ceased or continues In cases of doubt, the material must be deemed to sustain combustion.

§§ 173.201, 173.202, 173.203, 173.211, 173.212, 173.213 [Amended]

82. In addition to the amendments set forth above, part 173 is amended by removing the wording "4A1 or 4A2" and inserting in its place "4A" each place it appears; removing the wording "4B1 or 4B2" and inserting in its place "4B" each place it appears; and by removing the wording "6HH" and inserting in its place "6HH1" each place it appears in the following sections:

a. Section 173.201(b) and (c)
b. Section 173.202(b) and (c)
c. Section 173.203(b) and (c)
d. Section 173.211(b) and (c)
e. Section 173.212(b) and (c)
f. Section 173 213(b) and (c)

PART 175—CARRIAGE BY AIRCRAFT

83. The authority citation for part 175 continues to read as follows:

Authority: 49 U.S.C. 5101–5127; 49 CFR 1.53.

84. In § 175.10, paragraphs (a)(4) introductory text and (a)(13) are revised, paragraph (a)(17) is removed and reserved, and a new paragraph (a)(26) is added to read as follows:

§ 175.10 Exceptions

(a) * * *

(4) Non-radioactive medicinal and toilet articles (including aerosols) carried by a crew member or passenger in checked or carry-on baggage. Also aerosols in Division 2.2, with no subsidiary risk, for sporting or home use, when carried in checked baggage only, when:

* * * * *

(13) Carbon dioxide, solid (dry ice) when:

(i) In quantities not exceeding 2.3 kg (5.07 pounds) per package packed as prescribed by § 173.217 of this subchapter and used as a refrigerant for the contents of the package. The package must be marked with the name of the contents being cooled, the net weight of the dry ice or an indication that the net weight is 2.3 kg (5.07 pounds) or less, and also marked "Carbon Dioxide, Solid" or "Dry Ice";

(ii) Intended for use in food and beverage service aboard aircraft; or

(iii) In quantities not exceeding 2 kg (4.4 pounds) per passenger when used to pack perishables in carry-on baggage provided the package permits the release of carbon dioxide gas.

* * * * *

(26) A small medical or clinical mercury thermometer for personal use, when carried in protective cases by passengers or crew members.

§ 175.10 [Amended]

85. In addition, in § 175.10, in paragraph (a)(12) introductory text, the wording "environmental restoration or protection," is added immediately following "weather control," and immediately preceding "forest preservation".

86. In § 175.33, a new sentence is added in paragraph (a)(1) introductory text after the first sentence to read as follows:

§ 175.33 Notification of pilot-in-command

(a) * * *

(1) * * * In the case of Class 1 material, the compatibility group letter also must be shown. * * *

* * * * *

§ 175.33 [Amended]

87. In addition, in § 175.33, in paragraph (a)(6), the word "and" at the end of the sentence is removed; and in paragraph (a)(7), the period at the end of the sentence is removed and replaced with "; and".

PART 176—CARRIAGE BY VESSEL

88. The authority citation for part 176 continues to read as follows.

Authority: 49 U.S C 5101–5127, 49 CFR 1.53.

89. A new paragraph (c) is added in § 176.27 to read as follows:

§ 176.27 Certificate

* * * * *

(c)(1) A person responsible for packing or loading a freight container or transport vehicle containing hazardous materials for transportation by a manned vessel in ocean or coastwise service, must provide the vessel operator, at the time the shipment is offered for transportation by vessel, with a signed container packing certificate stating, at a minimum, that—

(i) The freight container or transport unit is serviceable for the materials loaded therein, contains no incompatible goods, and is properly marked, labeled or placarded, as applicable; and

(ii) When the freight container or transport unit contains packages, those

packages have been inspected prior to loading, are properly marked, labeled or placarded, as applicable, are not damaged, and are properly secured.

(2) The certification may appear on a shipping paper or on a separate document as a statement such as "It is declared that the packing of the container has been carried out in accordance with the provisions of 49 CFR 176.27(c)"

90 In § 176.76, a new paragraph (i) is added to read as follows

§ 176.76 Transport vehicles, freight containers, and portable tanks containing hazardous materials.

* * * * *

(i) A fumigated transport unit may only be transported on board a vessel subject to the following conditions and limitations:

(1) The fumigated transport unit may be placed on board a vessel only if at least 24 hours have elapsed since the unit was last fumigated;

(2) The fumigated transport unit is accompanied by a document showing the date of fumigation and the type and amount of fumigant used;

(3) Prior to loading, the master is informed of the intended placement of the fumigated transport unit on board the vessel and the information provided on the accompanying document;

(4) Equipment that is capable of detecting the fumigant and instructions for the equipment's use is provided on the vessel;

(5) The fumigated transport unit must be stowed at least five meters from any opening to accommodation spaces;

(6) Fumigated transport units may only be transported on deck on vessels carrying more than 25 passengers; and

(7) Fumigants may not be added to transport units while on board a vessel.

PART 177—CARRIAGE BY PUBLIC HIGHWAY

91 The authority citation for part 177 continues to read as follows:

Authority: 49 U S C. 5101–5127, 49 CFR 1 53

§ 177.841 [Amended]

92 In § 177.841, in paragraph (e)(3), the wording "is separated as required in § 177 848(e)(3) for classes identified with the letter 'O' in the Segregation Table for Hazardous Materials." is revised to read "is separated in a manner that, in the event of leakage from packages under conditions normally incident to transportation, commingling of hazardous materials with foodstuffs, feed, or any other edible material would not occur.".

PART 178—SPECIFICATIONS FOR PACKAGINGS

93 The authority citation for part 178 continues to read as follows.

Authority: 49 U S C 5101–5127, 49 CFR 1 53

94 In § 178 2, paragraph (a) is revised and paragraph (e) is added to read as follows.

§ 178.2 Applicability and responsibility.

(a) *Applicability.* (1) The requirements of this part apply to packagings manufactured—

(i) To a DOT specification, regardless of country of manufacture, or

(ii) To a UN standard, for packagings manufactured within the United States For UN standard packagings manufactured outside the United States, see § 173.24(d)(2) of this subchapter. For UN standard packagings for which standards are not prescribed in this part, see § 178.3(b).

(2) A manufacturer of a packaging subject to the requirements of this part is primarily responsible for compliance with the requirements of this part. However, any person who performs a function prescribed in this part shall perform that function in accordance with this part.

* * * * *

(e) *Definitions.* For the purpose of this part—

Manufacturer means the person whose name and address or symbol appears as part of the specification markings required by this part or, for a packaging marked with the symbol of an approval agency, the person on whose behalf the approval agency certifies the packaging.

Specification markings mean the packaging identification markings required by this part including, where applicable, the name and address or symbol of the packaging manufacturer or approval agency.

95. In § 178.3, paragraph (a) introductory text, the first sentence of paragraph (a)(2) and paragraph (b) are revised, a sentence is added at the end of paragraph (a)(4), and a new paragraph (a)(5) is added, to read as follows.

§ 178.3 Marking of packagings.

(a) Each packaging represented as manufactured to a DOT specification or a UN standard must be marked with specification markings conforming to the applicable specification, and with the following:

* * * * *

(2) Unless otherwise specified in this part, with the name and address or symbol of the packaging manufacturer or, where specifically authorized, the symbol of the approval agency certifying compliance with a UN standard * * *

* * * * *

(4) * * * For packagings having a capacity of 5 L (1 gallon) or 5 kg (11 pounds) or less, letters and numerals must be of an appropriate size

(5) For packages with a gross mass of more than 30 kg (66 pounds), the markings or a duplicate thereof must appear on the top or on a side of the packaging

(b) A UN standard packaging for which the UN standard is set forth in this part may be marked with the United Nations symbol and other specification markings only if it fully conforms to the requirements of this part A UN standard packaging for which the UN standard is not set forth in this part may be marked with the United Nations symbol and other specification markings for that standard as provided in the ICAO Technical Instructions or Annex 1 of the IMDG Code subject to the following conditions:

(1) The U S. manufacturer must establish that the packaging conforms to the applicable provisions of the ICAO Technical Instructions or Annex 1 of the IMDG Code, respectively.

(2) If an indication of the name of the manufacturer or other identification of the packaging as specified by the competent authority is required, the name and address or symbol of the manufacturer or the approval agency certifying compliance with the UN standard must be entered. Symbols, if used, must be registered with the Associate Administrator for Hazardous Materials Safety.

(3) The letters "USA" must be used to indicate the State authorizing the allocation of the specification marks if the packaging is manufactured in the United States.

* * * * *

§ 178.502 [Amended]

96. In § 178.502, the following changes are made:

a In the paragraph (a) introductory text, the word "types" is revised to read "kinds"

b. In the paragraph (a)(1) introductory text and the first sentence in paragraph (a)(3), the word "type" is revised to read "kind".

97. In § 178.503, paragraph (d) is redesignated paragraph (e), new paragraphs (a)(11) and (d) are added, paragraph (a) introductory text, paragraphs (a)(9), (a)(10), and (c) are revised; and newly designated paragraph (e)(3) is amended by revising the illustration, to read as follows

§ 178.503. Marking of packagings.

(a) A manufacturer must mark every packaging that is represented as manufactured to meet a UN standard with the marks specified in this section. The markings must be durable, legible and placed in a location and of such a size relative to the packaging as to be readily visible, as specified in § 178.3(a). Except as otherwise provided in this section, every reusable packaging liable to undergo a reconditioning process which might obliterate the packaging marks must bear the marks specified in paragraphs (a)(1) through (a)(6) and (a)(9) of this section in a permanent form (e.g. embossed) able to withstand the reconditioning process. A marking may be applied in a single line or in multiple lines provided the correct sequence is used. As illustrated by the examples in paragraph (e) of this section, the following information must be presented in the correct sequence. Slash marks should be used to separate this information. A packaging conforming to a UN standard must be marked as follows:

* * * * *

(9) For metal or plastic drums or jerricans intended for reuse or reconditioning as single packagings or the outer packagings of a composite packaging, the thickness of the packaging material, expressed in millimeters (rounded to the nearest 0.1 mm), as follows:

→(i) Metal drums or jerricans must be marked with the nominal thickness of the metal used in the body. The marked nominal thickness must not exceed the minimum thickness of the steel used by more than the thickness tolerance stated in ISO Standard 3574. (See Appendix C of this part.) The unit of measure is not required to be marked. When the nominal thickness of either head of a metal drum is thinner than that of the body, the nominal thickness of the top head, body, and bottom head must be marked (eg., "1.0–1.2–1.0" or "0.9–1.0–1.0"].

(ii) Plastic drums or jerricans must be marked with the minimum thickness of the packaging material. Minimum thicknesses of plastic must be as determined in accordance with § 173.28(b)(4). The unit of measure is not required to be marked;

(10) In addition to the markings prescribed in paragraphs (a)(1) through (a)(9) of this section, every new metal drum having a capacity greater than 100 L must bear the marks described in paragraphs (a)(1) through (a)(6), and (a)(9)(i) of this section, in a permanent form, on the bottom. The markings on the top head or side of these packagings need not be permanent, and need not include the thickness mark described in paragraph (a)(9) of this section. This marking indicates a drum's characteristics at the time it was manufactured, and the information in paragraphs (a)(1) through (a)(6) of this section that is marked on the top head or side must be the same as the information in paragraphs (a)(1) through (a)(6) of this section permanently marked by the original manufacturer on the bottom of the drum; and

(11) Rated capacity of the packaging expressed in liters may be marked.

* * * * *

(c) *Marking of reconditioned packagings.* (1) If a packaging is reconditioned, it shall be marked by the reconditioner near the marks required in paragraphs (a)(1) through (6) of this section with the following additional information:

(i) The name of the country in which the reconditioning was performed (in the United States, use the letters "USA");

(ii) The name and address or symbol of the reconditioner. Symbols, if used, must be registered with the Associate Administrator for Hazardous Materials Safety;

(iii) The last two digits of the year of reconditioning;

(iv) The letter "R"; and

(v) For every packaging successfully passing a leakproofness test, the additional letter "L".

(2) When, after reconditioning, the markings required by paragraph (a)(1) through (a)(5) of this section no longer appear on the top head or the side of the metal drum, the reconditioner must apply them in a durable form followed by the markings in paragraph (c)(1) of this section. These markings may identify a different performance capability than that for which the original design type had been tested and marked, but may not identify a greater performance capability. The markings applied in accordance with this paragraph may be different from those which are permanently marked on the bottom of a drum in accordance with paragraph (a)(10) of this section.

(d) *Marking of remanufactured packagings.* For remanufactured metal drums, if there is no change to the packaging type and no replacement or removal of integral structural components, the required markings need not be permanent (e.g., embossed). Every other remanufactured drum must bear the marks required in paragraphs (a)(1) through (a)(6) of this section in a permanent form (e.g., embossed) on the top head or side. If the metal thickness marking required in paragraph (a)(9)(i) of this section does not appear on the bottom of the drum, or if it is no longer valid, the remanufacturer also must mark this information in permanent form.

(e) * * *

(3) * * *

BILLING CODE 4910-60-P

BILLING CODE 4910-60-C

* * * * *

§ 178.503 [Amended]

98 In addition, in § 178.503, the reference "§ 178.503(a)(1) through (a)(10)" following the illustration in newly designated paragraph (e)(2) is revised to read "§ 178 503(a)(1) through (a)(9) "

§ 178.508 [Amended]

99 In § 178 508, in paragraph (b)(2), the wording "plywood or plastic material" is revised to read "plywood, plastics, or other suitable material".

100 In § 178.512, paragraphs (a)(3) and (a)(4) are removed and paragraphs (a)(1), (a)(2), and (b)(2) are revised to read as follows.

§ 178 512 Standards for steel or aluminum boxes.

(a) * * *

(1) 4A for a steel box; and

(2) 4B for an aluminum box

(b) * * *

(2) Boxes must be lined with fiberboard or felt packing pieces or must have an inner liner or coating of suitable material in accordance with subpart C of part 173 of this subchapter. If a double seamed metal liner is used, steps must be taken to prevent the ingress of materials, particularly explosives, into the recesses of the seams

* * * * *

101. In § 178.513, paragraphs (b)(2) and (b)(3) are redesignated as paragraphs (b)(3) and (b)(4), respectively, and a new paragraph (b)(2) is added to read as follows

§ 178.513 Standards for boxes of natural wood.

* * * * *

(b) * * *

(2) Fastenings must be resistant to vibration experienced under normal conditions of transportation End grain nailing must be avoided whenever practicable Joints which are likely to be highly stressed must be made using clenched or annular ring nails or equivalent fastenings.

* * * * *

§ 178.516 [Amended]

102 In § 178.516, the following changes are made:

a In paragraph (b)(1), at the end of the second sentence, the wording "ISO International Standard 535–1976(E)" is revised to read "ISO International Standard 535 ".

b In paragraph (b)(2), at the end of the first sentence, the wording "of wood." is revised to read "of wood or other suitable material."; and in the second sentence the wording "or other suitable material" is added immediately following the word "battens".

c Paragraphs (b)(4) and (b)(5) are redesignated as paragraphs (b)(5) and (b)(6), and paragraph (b)(3)(iii) is redesignated as paragraph (b)(4).

§ 178.521 [Amended]

103 In § 178.521, in paragraph (b)(2), in the penultimate sentence, the wording "water-resistant ply or barrier must also be placed" is revised to read "waterproof ply or barrier, such as double-tarred kraft paper, plastics-coated kraft paper, plastics film bonded to the inner surface of the bag, or one or more inner plastics liners, must also be placed".

104. In § 178.522, paragraphs (a)(10) and (b)(3)(viii) are revised, and paragraphs (a)(11) and (b)(3)(ix) are added to read as follows.

§ 178 522 Standards for composite packagings with inner plastic receptacles.

(a) * * *

(10) 6HH1 for a plastic receptacle within a protective plastic drum; and

(11) 6HH2 for a plastic receptacle within a protective plastic box.

(b) * * *

(3) * * *

(viii) 6HH1: Protective packaging must conform to the requirements for plastic drums, in § 178.509(b).

(ix) 6HH2: Protective packaging must conform to the requirements for plastic boxes, in § 178.517(b).

* * * * *

§ 178.522 [Amended]

105. In addition, in § 178.522, the following changes are made:

a. In paragraph (a)(9), the word "and" at the end of the paragraph is removed.

b. In paragraph (b)(4), the wording "6HH" is revised to read "6HH1"; and the wording ", 6HH2" is added immediately following "6HG2".

c. In paragraph (b)(5), the wording "6HH" is revised to read "6HH1", and the wording ", 6HH2" is added immediately following "6HG2".

106. In § 178.601, paragraph (k) is redesignated as paragraph (l) and revised, a new paragraph (k) is added, and paragraphs (b), (g)(2)(i), and (g)(2)(vi) are revised to read as follows.

§ 178.601 General requirements.

* * * * *

(b) *Responsibility* It is the responsibility of the packaging manufacturer to assure that each package is capable of passing the prescribed tests. To the extent that a package assembly function, including final closure, is performed by the person who offers a hazardous material for transportation, that person is responsible for performing the function in accordance with §§ 173 22 and 178.2 of this subchapter.

* * * * *

(g) * * *

(2) * * *

(i) The outer packaging must have been successfully tested in accordance with § 178 603 with fragile (e g. glass) inner packagings containing liquids at the Packing Group I drop height;

* * * * *

(vi) When the outer packaging is intended to contain inner packagings for liquids and is not leakproof, or is intended to contain inner packagings for solids and is not siftproof, a means of containing any liquid or solid contents in the event of leakage must be provided in the form of a leakproof liner, plastic bag, or other equally efficient means of containment. For packagings containing liquids, the absorbent material required in paragraph (g)(2)(v) of this section must be placed inside the means of containing liquid contents; and

* * * * *

(k) *Number of test samples.* Provided the validity of the test results is not affected and with the approval of the Associate Administrator for Hazardous Materials Safety, several tests may be performed on one sample.

(l) *Record retention* Following each design qualification test and each periodic retest on a packaging, a test report must be prepared. The test report must be maintained at each location where the packaging is manufactured and each location where the design qualification tests are conducted, for as long as the packaging is produced and for at least two years thereafter, and at each location where the periodic retests are conducted until such tests are successfully performed again and a new test report produced. In addition, a copy of the test report must be maintained by a person certifying compliance with this part. The test report must be made available to a user of a packaging or a representative of the Department upon request The test report, at a minimum, must contain the following information:

(1) Name and address of test facility;

(2) Name and address of applicant (where appropriate),

(3) A unique test report identification;

(4) Date of the test report;

(5) Manufacturer of the packaging;

(6) Description of the packaging design type (e g dimensions, materials, closures, thickness, etc.), including methods of manufacture (e.g. blow molding) and which may include drawing(s) and/or photograph(s);

(7) Maximum capacity;

(8) Characteristics of test contents, e.g. viscosity and relative density for liquids and particle size for solids;

(9) Test descriptions and results, and

(10) Signed with the name and title of signatory

§ 178.601 [Amended]

107. In addition, in § 178.601, the following changes are made:

a. In paragraph (g)(2) introductory text, the wording "Inner packagings" are revised to read "Articles or inner packagings".

b. In paragraph (g)(5)(i), the reference "§ 178.602" is revised to read "§ 178.603".

c. In paragraph (g)(5)(ii), the reference "§ 178.603" is revised to read "§ 178.604".

§ 178.602 [Amended]

108. In § 178.602, in the second sentence of paragraph (c), the reference "§ 178.603(d)(2)" is revised to read "§ 178.603(e)".

109. In § 178.603, in paragraph (a) introductory text, a sentence is added following the second sentence, the first sentence in paragraph (c) is revised, and paragraph (f)(1) is revised to read as follows:

§ 178.603 Drop test.

(a) * * * Where more than one orientation is possible for a given drop test, the orientation most likely to result in failure of the packaging must be used. * * *

* * * * *

(c) * * * Testing of plastic drums, plastic jerricans, plastic boxes other than expanded polystyrene boxes, composite packagings (plastic material), and combination packagings with plastic inner packagings other than plastic bags intended to contain solids or articles must be carried out when the temperature of the test sample and its contents has been reduced to −18 °C (0 °F) or lower. * * *

* * * * *

(f) * * *

(1) For packagings containing liquid, each packaging does not leak when equilibrium has been reached between the internal and external pressures, except for inner packagings of combination packagings when it is not necessary that the pressures be equalized;

* * * * *

§ 178.604 [Amended]

110. In § 178.604, in paragraph (d), in the second sentence, the wording "for a period of time sufficient to pressurize the interior of the packaging to the specified air pressure and to determine if there is leakage of air from the packaging" is revised to read ", for other than production testing, for a minimum time of five minutes".

§ 178.606 [Amended]

111. In § 178.606, in paragraph (c)(1), at the end of the first sentence, the period is removed and replaced with a semicolon and the phrase "where the contents of the test sample are non-hazardous liquids with specific gravities different from that of the liquid to be transported, the force must be calculated based on the specific gravity that will be marked on the packaging" is added immediately following the semicolon.

112. Appendix C is added to Part 178 to read as follows:

Appendix C to Part 178—Nominal and Minimum Thicknesses of Steel Drums and Jerricans

For each listed packaging capacity, the following table compares the ISO Standard 3574 nominal thickness with the corresponding ISO Standard 3574 minimum thickness.

Maximum capacity (L)	ISO nominal (mm)	Corresponding ISO minimum (mm)
20	0.7	0.63
30	0.8	0.73
40	0.8	0.73
60	1.0	0.92
120	1.0	0.92
220	1.0	0.92
450	1.9	1.77

Issued in Washington, DC on December 14, 1994 under authority delegated in 49 CFR part 1.

Ann Sol Gutiérrez,

Deputy Administrator, Research and Special Programs Administration.

[FR Doc. 94–31175 Filed 12–28–94; 8:45 am]

BILLING CODE 4910–60–P