



DEPARTMENT OF TRANSPORTATION
HAZARDOUS MATERIALS REGULATIONS BOARD

WASHINGTON, D.C. 20590

22073

[49 CFR Parts 172, 173, 178]

[Docket No. HM-94; Notice No. 71-29]

TRANSPORTATION OF HAZARDOUS
MATERIALS

Notice of Proposed Rule Making

The Hazardous Materials Regulations Board is considering amendment of several unrelated sections of the Department's Hazardous Materials Regulations. Commenters need only identify the particular proposal on which they wish to comment when responding. The proposals covered in this document are:

- A—List of Hazardous Materials.
- B—Flammable liquids, n.o.s., in specification 37D drums.
- C—Liquid cement, n.o.s., in containers of fiberboard bodies and metal tops and bottoms.
- D—Tin tetrachloride in cylinders.
- E—Liquefied petroleum gas.
- F—Organic phosphate compound, n.o.s., in polyethylene container with steel overpack.
- G—Radioactive materials—Special Form Californium-252 in Type A packages.
- H—Specifications 4B240ET and 4AA480.
- I—Quenching of steel cylinders.

PROPOSAL A

LIST OF HAZARDOUS MATERIALS

The Hazardous Materials Regulations Board is considering amendment of 172.5(a) of the Department's Hazardous Materials Regulations to authorize the use of "Butane", "Isobutane", "Isobutylene", and "Propane" as proper shipping names for these commodities now described as "Liquefied petroleum gas". These commodity descriptions now appear in italics in the list of hazardous materials and are proposed to be changed to Roman-type print to signify authorization for their use as proper shipping names.

This proposal is based on a petition by the Compressed Gas Association, Inc., to provide for the use of these terms as proper shipping names. The use of these names as descriptions on shipping papers and as markings on outside shipping containers would be authorized as an alternate to the liquefied petroleum gas designation now required.

In consideration of the foregoing, it is proposed to amend 49 CFR Part 172 as follows:

§ 172.5 [Amended]

In § 172.5(a), the commodity descriptions of butane, isobutane, isobutylene, and propane found in the commodity list under the article column heading would be changed from italics to Roman-type print.

PROPOSAL 3

FLAMMABLE LIQUIDS N.O.S., IN SPECIFICATION
37D DRUMS

The Hazardous Materials Regulations Board is considering amendment of § 173.119(b) of the Department's Hazardous Materials Regulations to provide for the transportation in DOT-37D steel drums of flammable liquids, not other-

wise specified, and having a flash point above 20° F.

This proposal is based on a petition by a manufacturer of specification drums and petitions by several special permit holders. Six years of reported satisfactory experience under special permits support the petitioners' position that flammable liquids, n.o.s., may be transported safely in DOT-37D steel drums.

In consideration of the foregoing, it is proposed to amend 49 CFR Part 173 as follows:

In § 173.119, paragraph (b) (10) would be added to read as follows:

§ 173.119 Flammable liquids not specifically provided for.

(b) * * *

(10) Specification 37D (§ 178.137 of this chapter). Nonreusable steel drum authorized only for a commodity not exceeding 10 pounds per gallon.

* * *

PROPOSAL C

LIQUID CEMENT, N.O.S., IN CONTAINERS OF
FIBERBOARD BODIES AND METAL TOPS AND
BOTTOMS

The Hazardous Materials Regulations Board is considering amendment of § 173.132 of the Department's Hazardous Materials Regulations to permit the shipment of liquid cement, n.o.s., in fiberboard containers with metal tops and bottoms not exceeding 1 quart capacity. These containers would be exempt from specification packaging, marking, and labeling.

This proposal is based on a petition which contends the proposed packaging is safer than the glass or earthenware containers currently authorized in § 173.132(b).

Section 173.128(c) (1) contains authorization for shipping flammable paints and related materials in similar fiberboard containers. On the basis of past experience with this packaging for flammable liquids, the Board believes the petition has merit.

In consideration of the foregoing, it is proposed to amend 49 CFR Part 173 as follows:

In § 173.132 the first sentence of paragraph (b) would be amended to read as follows:

§ 173.132 Cement, liquid, n.o.s., container cement, linoleum cement, pyroxylin cement, rubber cement, tile cement, wallboard cement, and coating solution.

* * *

(b) Cements, except cements containing carbon bisulfide, in glass, earthenware, or leakproof containers with fiberboard bodies and metal tops and bottoms of not over 1 quart capacity each, or metal containers of not over 5 gallons capacity each, packed in strong outside containers are exempt from specification packaging, marking, and labeling requirements when offered for transportation by rail freight, highway, or water. However, when offered for transportation

by water, name of contents must be marked on each outside container * * *

PROPOSAL D

TIN TETRACHLORIDE IN CYLINDERS

The purpose of this proposed amendment to § 173.247 of the Department's Hazardous Materials Regulations is to provide for packaging anhydrous tin tetrochloride in specifications 4BA240 and 4BW240 cylinders. This material is currently authorized to be transported in specifications 5, 5A, 5B, and 17C containers.

A petitioner has proposed to use the specifications 4BA240 and 4BW240 cylinders to contain the commodity so they could be used as pressure vessels at the destination to force the liquid tin tetrachloride from the container. The cylinders would not be pressurized while being transported. The satisfactory experience reported under special permit supports the petitioner's position that the commodity may be transported safely in these cylinders. The Board believes the petition has merit.

In consideration of the foregoing, it is proposed to amend 49 CFR Part 173 as follows:

In § 173.247, paragraph (a) (17) would be amended to read as follows:

§ 173.247 Acetyl chloride, antimony pentachloride, benzoyl chloride, chromyl chloride, pyro sulfur chloride, silicon chloride, sulfur chloride (mono and di), sulfur chloride, thionyl chloride, tin tetrachloride (anhydrous), and titanium tetrachloride.

(a) * * *

(17) Specification 4BA240 or 4BW240 (§§ 178.51, 178.61 of this chapter). Metal cylinder. Authorized only for titanium tetrachloride or tin tetrochloride, anhydrous, without any compressed gas. Safety relief devices are not authorized.

PROPOSAL E

LIQUEFIED PETROLEUM GAS

The Hazardous Materials Regulations Board is considering amendment of §§ 173.34, 173.301, 173.302, and 173.304 of the Department's Hazardous Materials Regulations to delete reference to ICC-7 and ICC-7-150 cylinders, DOT-5 and DOT-5F drums. Except for the DOT-5F drums, these containers were built prior to October 1, 1930, and the Board believes the containers are obsolete because of their age. It has been reported to the Board that DOT-5F drums are no longer used in the transportation of liquefied petroleum gas and therefore, reference to their use is being deleted.

Any person who may be using these containers or may know of their use is requested to notify the Board.

In consideration of the foregoing, 49 CFR Part 173 would be amended as follows:

(A) In § 173.34, paragraph (d) (6) would be canceled; in paragraph (e), the table would be amended as follows:

§ 173.34 Qualification, maintenance, and use of cylinders.

* * *

(d) * * *

(6) [Canceled]

(e) * * *

Specification under which cylinder was made	Minimum retest pressure (p.s.i.)	Retest period (years)
[cancel]	do	do
7 150 for liquefied petroleum gas, 390 p.s.i.	390 p.s.i.	5

(B) In § 173.301 paragraph (h), the table would be amended as follows:

§ 173.301 General requirements for shipment of compressed gases in cylinders.

(h) * * *

CONTAINERS		
[cancel]	ICC-71	
Kind of gas	Maximum permitted filling density (see Note 1)	Containers marked as shown in this column or of the same type with higher service pressure must be used except as provided in § 173.340(a), (b), § 173.390(c) (see notes following table)
Change	Percent	
Cyclopropane (see Notes 8 and 9).	55	DOT-3A225; DOT-3A180X; DOT-3AA225; DOT-3B225; DOT-4A225; DOT-4AA480; DOT-4B225; DOT-4BA225; DOT-4BW225; DOT-4B20ET; DOT-3; DOT-3E180; DOT-39.

(d) * * *
(3) * * *
(ii) * * *

Type of container	Maximum capacity		Maximum charging pressure-p.s.i.g.
	Cubic inches	Gallons	
DOT-2P (see Note 1).	31.83		45 p.s.i.g. at 70° F. and 95 p.s.i.g. at 130° F. (see Note 2).
DOT-2P (see Note 1).	31.83		26 p.s.i.g. at 70° F. and 34 p.s.i.g. at 130° F.
DOT-3C and ICC-4C.	3.881	10.4	145 p.s.i.g. at 130° F. 5% tollerance.

PROPOSAL F

ORGANIC PHOSPHATE COMPOUND, N.O.S., IN POLYETHYLENE CONTAINER WITH STEEL OVERPACK

The Hazardous Materials Regulations Board is considering amendment of §§ 173.358 and 173.359 of the Hazardous Materials Regulations to add specification 6D cylindrical steel overpack with inside specification 2S polyethylene container as an authorized container for transportation of organic phosphates.

During the past 7 years, many containers with capacities of 5, 30, and 55 gallons have been shipped via rail, highway, and water under special permit experience reported with these shipments of organic phosphate compounds, liquid, n.o.s., and organic phosphate compound mixtures, liquid, n.o.s., has been satisfactory.

(C) In § 173.302, paragraph (a) (1) would be amended as follows:

§ 173.302 Charging of cylinders with nonliquefied compressed gas.

(a) * * *

(1) Specification 3, 3A, 3AA, 3B, 3C, 3D, 3E, 4, 4A, 4B, 4BA, 4BW, 4C, 25, 26, 33 or 38 (§§ 178.36, 178.37, 178.38, 178.40, 178.41, 178.42, 178.48, 178.49, 178.50, 178.51, 178.61, 178.52 of this chapter). (See §§ 173.34 and 173.301(e)).

Note 1 remains the same.

(D) In § 173.304, paragraph (a) (2) table would be amended; paragraph (d) (3) (ii) table would be amended in its entirety. Footnote 1 would be canceled as follows:

§ 173.304 Charging of cylinders with liquefied compressed gas.

(a) * * *
(2) * * *

Notes 1 and 2 remain the same.

1 Canceled.

Containers marked as shown in this column or of the same type with higher service pressure must be used except as provided in § 173.340(a), (b), § 173.390(c) (see notes following table).

On the basis of petitions and this satisfactory experience, the Board is proposing to incorporate the terms of the special permit pertaining to packaging of these materials into the regulations.

A petitioner also requested that specification 2SL polyethylene containers be authorized as an alternative for the specification 2S container. In view of the lack of experience with the specification 2SL container in this use, this proposal is not being included by the Board in this notice.

In consideration of the foregoing, it is proposed to amend 49 CFR Part 173 as follows:

(A) In § 173.358, paragraph (a) (12) would be added to read as follows:

§ 173.358 Hexaethyl tetraphosphate, methyl parathion, organic phosphate, compound, n.o.s., parathion, tetraethyl dithio pyrophosphate and tetraethyl pyrophosphate, liquid.

(a) * * *

(12) Specification 6D (§ 178.102 of this chapter). Cylindrical steel overpack with an inside specification 2S (§ 178.35 of this chapter) polyethylene container. Full removable head drums over 5 gallons capacity must be closed by means of a 12-gage steel bolted ring closure with drop forged lugs, one of which is appropriately threaded. For drums not over 30 gallons capacity, the threaded lug must have at least a 3/8-inch bolt and locking nut, and for drums over 30 gallons capacity the bolt and locking nut must be at least 5/8-inch. Authorized only for materials that will not react

with polyethylene and result in container failure.

(B) In § 173.359, paragraphs (a) (14) and (b) (10) would be added to read as follows:

§ 173.359 Hexaethyl tetraphosphate mixtures, methyl parathion mixtures, organic phosphate compound mixtures, n.o.s., parathion mixtures, tetraethyl dithio pyrophosphate mixtures, and tetraethyl pyrophosphate mixtures, liquid.

(a) * * *

(14) Specification 6D (§ 178.102 of this chapter). Cylindrical steel overpack with an inside Spec. 2S (§ 178.35 of this chapter) polyethylene container. Full removable head drums over 5 gallons capacity must be closed by means of a 12-gage steel bolted ring closure with drop forged lugs, one of which is appropriately threaded. For drums not over 30 gallons capacity, the threaded lug must have at least a 3/8-inch bolt and locking nut, and for drums over 30 gallons capacity the bolt and locking nut must be at least 5/8-inch. Authorized only for materials that will not react with polyethylene and result in container failure.

(b) * * *

(10) Specification 6D (§ 178.102 of this chapter). Cylindrical steel overpack with an inside Spec. 2S (§ 178.35 of this chapter) polyethylene container. Full removable head drums over 5 gallons capacity must be closed by means of a 12-gage steel bolted ring closure with drop forged lugs, one of which is appropriately threaded. For drums not over 30 gallons capacity, the threaded lug must have at least a 3/8-inch bolt and locking nut, and for drums over 30 gallons capacity the bolt and locking nut must be at least 5/8-inch. Authorized only for materials that will not react with polyethylene and result in container failure.

PROPOSAL G

RADIOACTIVE MATERIALS—SPECIAL FORM CALIFORNIUM-252 IN TYPE A PACKAGES

The Hazardous Materials Regulations Board is considering amendment of Part 173 of the Hazardous Materials Regulations of the Department of Transportation to limit to not more than 2 curies the quantity of Californium-252 in special form, that may be shipped in Type A radioactive materials packages.

This proposal is based on a petition by the U.S. Atomic Energy Commission.

Californium-252 is a radioactive nuclide that emits both gamma and neutron type radiation and has a very high level of specific radioactivity (activity level per unit of mass) when compared to most other radioisotopes. To date it has been produced solely by the U.S. Atomic Energy Commission, which recently has made small quantities available for use in industry, education, and research.

During 1969 and 1970 an average of one large shipment of Californium-252 was made each month. These shipments ranged from a few micrograms to a few milligrams of material. Over the next years, USAEC has projected that the

number of shipments will increase substantially. This projected increase in the number of shipments and the relatively high specific radioactivity of Californium-252 necessitated a reexamination of the present criteria which permit the shipment of 20 curies of special form radioactive material in a Type A package (see table in § 173.389(L)).

In establishing that limit, the 20 curie value was selected as that amount of a 1 Mev. (million electron volt) gamma-emitting radionuclide that, if unshielded, would produce a 1 roentgen-hour radiation dose rate at a distance of 10 feet. However, the radiation exposure dose rate for an unshielded 20 curie source of Californium-252, considering both gamma and neutron radiation, is approximately 10 times that value.

For the above reasons, the Board considers it appropriate that the allowable quantity of special form Californium-252 in a Type A package be limited to not more than 2 curies. (The limit of Californium-252 in normal form as a Transport Group I radionuclide (see §§ 173.389 (L) and 173.390) in a Type A package would remain at 0.001 curie.)

Considering the foregoing, the Board proposes to amend 49 CFR Part 173 as follows:

In the table under § 173.389 (L), footnote 1 is added following the table and referenced in the second column, last entry "20".

§ 173.389 Radioactive materials: definitions.

(L) * * *

PROPOSAL H

SPECIFICATIONS 4B240ET AND 4AA480

The Hazardous Materials Regulations Board is considering amendment of Part 178 of the Department's Hazardous Materials Regulations to make certain editorial corrections, to delete redundant testing requirements for tubing used in specification 4B240ET cylinders, and to modify certain test requirements for specification 4AA480 cylinders.

Specification 4B240ET (§ 178.55) contains specific testing requirements for tubing used in the fabrication of those cylinders. A petitioner has stated that this testing is unnecessary because tests otherwise required by the regulations on each 4B240ET cylinder are adequate to assure that the vessel has the strength required on the completed cylinder assures that the tubing used is stronger than the 24,000 p.s.i. now prescribed in § 178.55-2(a). The Board considers the petition to have merit and, therefore, is proposing to delete this testing requirement.

Reference to the billet piercing process in § 178.55-4(a) is superfluous because § 178.55-2(a) specifies that cylinders be

Except that for Californium-252 the Type A quantity limit for special form is 2 curies.

made from electric resistance welded tubing. Therefore, the Board is proposing to delete the reference to billets in § 178.55-4(a).

Other petitioners have requested that § 178.56-14(d) be revised to include in specification 4AA480 the test requirements contained in specification 4BA. This would require at least one cylinder from a lot of 200 or less to be fully tested, with the remainder being examined under pressure of at least two times service pressure. Determination of expansion of the entire lot, therefore, would not be required unless selected specimens failed the test. The Board believes this suggestion has merit and is proposing inclusion of these test requirements in § 178.56.

In consideration of the foregoing, it is proposed to amend 49 CFR Part 178 as follows:

(A) In § 178.55-2 and 178.55-4, paragraph (a) would be amended to read as follows:

§ 178.55-2 Type, spinning process, size and service pressure.

(a) Type. Cylinders must be of brazed type made from electric resistance welded tubing.

§ 178.55-4 Duties of inspector.

The inspector shall: (a) Inspect all material and reject any not meeting the requirements.

(B) In § 178.56-14, paragraph (b) and paragraphs (d) (1) and (d) (2) would be amended to read as follows:

§ 178.56-14 Hydrostatic test.

(b) Pressure must be maintained for at least 30 seconds or sufficiently longer to assure complete expansion. Any internal pressure applied after heat treatment and before the official test must not exceed 90 percent of the test pressure. If, due to failure of test apparatus, the test pressure cannot be maintained, the test may be repeated at a pressure increased by 10 percent or 100 pounds per square inch, whichever is lower.

(d) Cylinders must be tested as follows:

(1) At least one cylinder selected at random out of each lot of 200 or less must be tested as described in paragraphs (a), (b), and (c) of this section, to at least two times service pressure. If a selected cylinder fails, then two additional specimens must be selected at random from the same lot and subjected to the prescribed test. If either of these fails the test, then each cylinder in that lot must be so tested; and,

(2) Each cylinder not tested as prescribed in subparagraph (1) of this paragraph must be examined under pressure of at least two times service pressure and must show no defect. A cylinder showing a defect must be rejected unless it may be requalified under § 178.56-13(a).

PROPOSAL I

QUENCHING OF STEEL CYLINDERS

The Hazardous Materials Regulations Board is considering amendment of §§ 178.37, 178.44, and 178.58 of the Department's Hazardous Materials Regulations to remove the provisions for molten salt bath for quenching of specifications 3AA, 3AAX, 3HT, and 4DA cylinders.

This proposal is based on a comment submitted on Docket No. HM-75; Notice No. 71-2 (36 F.R. 1063) that the molten salt bath option be eliminated because this method of heat treatment is not being used. Docket No. HM-75; Amendment No. 178-17 (36 F.R. 9520) contained provision for permitting the quenching of specifications 3AA, 3AAX, 3HT, and 4DA cylinders by suitable fluids other than oil.

The Board invites comments on the need for retaining the present molten salt bath provisions.

In consideration of the foregoing, it is proposed to amend 49 CFR Part 178 as follows:

(A) In § 178.37-11, paragraph (a) (1) would be amended; paragraph (a) (7) would be canceled, as follows:

§ 178.37-11 Heat treatment.

(a) * * *

(1) All cylinders must be quenched by oil, or other suitable medium except as provided in subparagraph (5) of this paragraph.

(7) [Canceled]

(B) In § 178.44-11, paragraph (a) (1) would be amended; paragraph (a) (4) would be canceled, as follows:

§ 178.44-11 Heat treatment.

(a) * * *

(1) All cylinders must be quenched by oil, or other suitable medium.

(4) [Canceled]

(C) In § 178.58-11, paragraph (a) (1) would be amended; paragraph (a) (5) would be canceled, as follows:

§ 178.58-11 Heat treatment.

(a) * * *

(1) All containers must be quenched by oil, or other suitable medium except as provided in subparagraph (4) of this paragraph.

(5) [Canceled]

Interested persons are invited to give their views on these proposals. Communications should identify the docket number and proposal and be submitted in duplicate to the Secretary, Hazardous Materials Regulations Board, Department of Transportation, 400 Sixth Street SW., Washington, DC 20590. Communications received on Proposal A on or before December 21, 1971, will be considered before final action is taken on this proposal. Otherwise, communications received on or before January 25, 1972, will be considered before final

action is taken on the other proposals. All comments received will be available for examination by interested persons at the Office of the Secretary, Hazardous Materials Regulations Board, both before and after the closing date for comments.

These proposals are made under the authority of sections 831-835 of Title 18, United States Code, section 9 of the Department of Transportation Act (49 U.S.C. 1657), and title VI and section 902(h) of the Federal Aviation Act of 1958 (49 U.S.C. 1421-1430 and 1472(h)).

Issued in Washington, D.C., on November 15, 1971.

W. J. BURNS,
*Chairman, Hazardous Materials
Regulations Board.*

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