DEPARTMENT OF TRANSPORTATION
HAZARDOUS MATERIALS REGULATIONS BOARD
WASHINGTON, D.C. 20590

[Docket No. HM-94; Amdts. 173-64, 173-25]

PART 173—SHIPPERS

PART 178—SHIPPING CONTAINER SPECIFICATIONS

Shipment of Hazardous Materials

The purpose of these amendments to the Hazardous Materials Regulations of the Department of Transportation is (1) to authorize the shipment of certain flammable liquids, not specifically provided for, in DOT-37D steel drums; (2) to authorize the shipment of liquid cement, n.o.s., in a fiberboard container of not more than 1 quart capacity having a metal top and bottom; (3) to authorize the shipment of anhydrous tin tetrachloride in specification 4BA240 and 4BW240 cylinders; (4) to delete from certain sections the reference to ICC-7 and ICC-7-150 cylinders, DOT-5 and DOT-5F drums; (5) to authorize the shipment of organic phosphates in a specification DOT-2S polyethylene container packaged within a specification DOT-6D cylindrical steel overpack; (6) to authorize the shipment of not more than 2 curies of Californium-252 in special form in a Type A radioactive mate-
package; (7) to delete molten salt heat treatment for quenching of
lications 3AA, 3AAX, 3HT, and 4DA cylinders; (8) to delete testing requirements for tubing used in the fabrication of specification 4B240ET cylinders; and (9) to modify certain test requirements for specification 4AA480 cylinders.

On November 19, 1971, the Hazardous Materials Regulations Board published a notice of proposed rule making, Docket No. HM-94; Notice No. 71-29 (36 F.R. 22073), which proposed these amendments. Interested persons were invited to give their views.

One commenter objected to the proposal to amend § 173.119 to authorize the shipment of certain flammable liquids in DOT-37D steel drums. This commenter is of the opinion that this use of the proposed drums will significantly contribute to solid waste pollution because they are prohibited for reuse for the transportation of hazardous materials by the regulations. The Board considered the environmental aspects of this rule making and concluded that there was no significant environmental impact and that DOT-37D steel drums should be authorized for the shipment of certain flammable liquids. In accordance with Department of Transportation procedures, a discussion of the environmental effects was prepared and included in the docket.

Another commenter requested that the regulations permitting the packaging of anhydrous tin tetrachloride in specifica-
4BA240 and 4BW240 cylinders be amended for safety purposes. He suggested that the regulations prohibit the use of these cylinders for the transportation of liquefied petroleum gas after they are used for anhydrous tin tetrachloride and that the cylinders be identified by a specification number specific to corrosive liquid usage only. The Board is also concerned with the condition of these cylinders, authorized for corrosive liquids, which are interchangeable and may be used for compressed gas shipments. In Docket No. HM-76 (36 F.R. 20604), the Board provided special requalification test and inspection requirements for cylinders that have contained a corrosive liquid prior to recharging with a compressed gas. These requirements are set forth in § 173.34(e)(16). In view of these recent regulations with which it appears the commenter was not familiar, the Board does not consider further amendment of the regulations in this matter necessary.

In consideration of the foregoing, 49 CFR Parts 173 and 178 are amended as follows:

I. Part 173, Shippers, is amended as set forth below.

(A) In § 173.34, paragraph (d)(6) is canceled; in paragraph (e), the table is 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*)		
7	do	
7-150 for liquefied petroleum gas.	300 p.s.i.	5

* * * * * *

(B) In § 173.119, paragraph (b)(10) is added to read as follows:

§ 173.119 Flammable liquids not specifically provided for.

* * * * * *

(b) * * *

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

* * * * * *

(C) In § 173.132, paragraph (b) is 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. Shipments for transportation by highway carriers are exempt also from Part 177 of this subchapter, except § 177.817 of this subchapter. When offered for transportation by rail express, such shipments are exempt from specification packaging, marking, and labeling requirements, except that packages having inside containers of over 1 quart capacity each must be marked with name of contents and bear the red label as prescribed in § 173.405. When fiberboard box is used for such shipments by rail freight, rail express, highway, or water, gross weight must not exceed 65 pounds.

(D) In § 173.247, paragraph (a)(17) is amended to read as follows:

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

(a) * * *

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

(E) In § 173.301 paragraph (h), the table is amended as follows:

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

* * * * * *

(h) * * *

Containers	
[cancel]	ICC-7

* * * * * *

(F) In § 173.302, paragraph (a)(1) is amended as follows:

§ 173.302 Charging of cylinders with non liquefied compressed gas.

(a) * * *

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

[1] Use of existing cylinders authorized, but new construction not authorized.

* * * * *

(G) In § 173.304, paragraph (a)(2) table is amended; paragraph (d)(3)(ii) table is amended in its entirety, footnote 1 is canceled as follows:

§ 173.304 Charging of cylinders with liquefied compressed gas.

(a) * * *

(2) * * *

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 § 173.34 (a), (b), § 173.3015 (j) (see notes following tab e)
Change	*Percent*	
Cyclopropane (see Notes 8 and 9).....	55	DOT-3A225; DOT 3A480X; DOT-3AA225; DOT-3B225; DOT-4A225; DOT-4AA480; DOT-4B225; DOT-4BA225; DOT-4BW225; DOT-4B240ET; DOT-3; DOT 3E1800; 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 105 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 84 p.s.i.g. at 130° F.
DOT-3C and ICC 4C.	3,881	16 + 5% tolerance.	145 p.s.i.g. at 130° F.

[1] [Canceled.]

* * * * *

(H) In § 173.358, paragraph (a)(12) is 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 subchapter). Cylindrical steel overpack with an inside specification 2S (§ 178.35 of this subchapter) polyethylene container. Each full removable head overpack 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 an overpack not over 30 gallons capacity, the threaded lug must have at least a $\frac{3}{8}$-inch bolt and locking nut, and for an overpack over 30 gallons capacity the bolt and locking nut must be at least $\frac{5}{8}$-inch. Authorized only for materials that will not react with polyethylene and result in container failure.

(I) In § 173.359 paragraphs (a)(14) and (b)(10) are 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 subchapter). Cylindrical steel overpack with an inside specification 2S (§ 178.35 of this subchapter) polyethylene container. Each full removable head overpack 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 an overpack not over 30 gallons capacity, the threaded lug must have at least a $\frac{3}{8}$-inch bolt and locking nut, and for an overpack over 30 gallons capacity the bolt and locking nut must be at least $\frac{5}{8}$-inch. Authorized only for materials that will not react with polyethylene and result in container failure.

(b) * * *

(10) Specification 6D (§ 178.102 of this subchapter). Cylindrical steel overpack with an inside specification 2S (§ 178.35 of this subchapter) polyethylene container. Each full removable head overpack 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 an overpack not over 30 gallons capacity, the threaded lug must have at least a $\frac{3}{8}$-inch bolt and locking nut, and for an overpack over 30 gallons capacity the bolt and locking nut must be at least $\frac{5}{8}$-inch. Authorized only for materials that will not react with polyethylene and result in container failure.

* * * * *

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

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

§ 173.389 Radioactive materials; definitions.

* * * * *

(l) * * *

II. Part 178, Shipping Container Specifications, is amended as set forth below.

(A) In § 178.37–11(a), subparagraph (1) is amended, and subparagraph (7) is canceled as follows:

§ 178.37 Specification 3AA; seamless steel cylinders made of definitely prescribed steels or 3AAX; seamless steel cylinders made of definitely prescribed steels of capacity over 1,000 pounds water volume.

§ 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(a), subparagraph (1) is amended, and subparagraph (4) is canceled as follows:

§ 178.44 Specification 3HT; inside containers, seamless steel cylinders for aircraft use made of definitely prescribed steel.

§ 178.44–11 Heat treatment.

(a) * * *

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

* * * * *

(4) [Canceled]

* * * * *

(C) In §§ 178.55–2 and 178.55–4, paragraph (a) is amended to read as follows:

§ 178.55 Specification 4B240ET; welded and brazed cylinders made from electric resistance welded tubing.

§ 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.

* * * * *

(D) In § 178.56–14, paragraph (b) and paragraph (d)(1) and (2) are amended to read as follows:

§ 178.56 Specification 4AA480; welded steel cylinders made of definitely prescribed steels.

§ 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 § 178.56–18(a).

(E) In § 178.58–11(a), subparagraph (1) is amended, and subparagraph (5) is canceled as follows:

§ 178.58 Specification 4DA; inside containers, welded steel for aircraft use.

§ 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]

* * * * *

This amendment is effective September 30, 1972; however, compliance with the regulations as amended herein is authorized immediately.

(Secs. 831–835, Title 18, U.S.C. sec. 9, Department of Transportation Act, 49 U.S.C. 1657; Title VI, sec. 902(h), Federal Aviation Act of 1958, 49 U.S.C. 1421–1430 and 1472(h))

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