



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

2404

[49 CFR Parts 172, 173, 176, 178, 179]

[Docket No. HM-77; Notice No. 71-4]

TRANSPORTATION OF HAZARDOUS MATERIALS

Methylacetylene-Propadiene, Stabilized

The Hazardous Materials Regulations Board is considering amending the Department's Hazardous Materials Regulations to provide specific requirements for the shipment of stabilized methylacetylene-propadiene, a flammable compressed gas, in cylinders, tank cars, and tank motor vehicles in accordance with a petition for rule making submitted to the Board. Current provisions for shipping methylacetylene, 15 percent to 20 percent propadiene mixture, in cylinders and tank cars would be deleted. Petitioner has advised that the gas mixture in this specified percentage range is no longer manufactured or shipped. Information submitted also indicates that this currently authorized mixture contains no stabilizing diluents.

The recommended mixture of methylacetylene-propadiene, stabilized, contains not more than 68 percent methylacetylene plus propadiene and at least 32 percent stabilizing diluents consisting of propane, propylene, isobutylene, isobutane, or butadiene. The stability of methylacetylene-propadiene mixtures has been demonstrated by tests, the results of which are on file with the Board.

The tests consisted of the blasting cap test, dynamite test, hot spot test, fire test, and vapor ignition test conducted on cylinders containing the gas mixture.

Methylacetylene-propadiene gas is compatible with all LPG cylinders except with cylinders having brazed seams. There is indication that under certain conditions the gas mixture could form acetylides similar to those formed by acetylene. For this reason, no brazed cylinders may be used.

In addition to the changes proposed as set forth below, the petitioner proposed that § 173.315 paragraph (j) be amended to authorize the transportation of stabilized methylacetylene-propadiene in storage tanks built to ASME specifications under the same conditions afforded liquefied petroleum gas. The Board does not believe that the provisions for shipping LPG in non-DOT specification containers should be extended to other gases at this time. The proposal was not supported by sufficient data and, accordingly, will be held in abeyance pending receipt of additional information submitted in conformance with § 170.11.

In consideration of the foregoing, it is proposed to amend 49 CFR Parts 172, 173, 176, 178, and 179 as follows:

I. Part 172.

In § 172.5 paragraph (a) Commodity List would be amended as follows:

§ 172.5 List of hazardous materials.

(a) * * *

Article	Classed as—	Exemptions and packing (see sec.)	Label required if not exempt	Maximum quantity in one outside container by rail express
* * *	* * *	* * *	* * *	* * *
(add)				
Methylacetylene-propadiene, stabilized (containing at least 32% stabilizing diluents).	F.G.	No exemption, 173.304, 173.314, 173.315.	Red Gas	300 pounds.
* * *	* * *	* * *	* * *	* * *
(cancel)				
Methylacetylene—15% to 20% propadiene mixture.	F.G.	173.306, 173.304, 173.314	Red Gas	300 pounds.

II. Part 173.

(A) In § 173.34 paragraph (e) (9) would be amended by inserting the phrase "methylacetylene-propadiene, stabilized" immediately following the phrase "liquefied petroleum gas", in the first sentence;

paragraph (e) (10) Table would be amended as follows:

§ 173.34 Qualification, maintenance and use of cylinders.

* * * * *

(e) * * *

(10) * * *

<i>Cylinders made in compliance with—</i> (add) * * *	<i>Used exclusively for—</i> * * *
DOT-3A480, DOT-3AA480, DOT-3B, DOT-4B, DOT-4BA.	Methylacetylene-propadiene, stabilized which is commercially free from corroding components.

(B) In § 173.301 paragraph (d) (3) would be amended to read as follows:

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

(d) * * *
(3) Manifolding is authorized for cylinders of the following gases: ethane, ethylene, propylene, liquefied petroleum gases, methylacetylene-propadiene, stabilized, and liquefied hydrocarbon gases. Individual cylinders must be equipped with approved safety relief devices as required by § 173.34(d). Each such cylinder must be equipped with an individual shut-off valve, or valves,

which must be tightly closed while in transit. Each such cylinder must be separately charged, and shippers shall insure that no interchange of cylinder contents can occur during transportation. Manifold branch lines to individual shut-off valves must be sufficiently flexible to prevent injury to the valves which otherwise might result from the use of rigid branch lines.

(C) In § 173.304 paragraph (a) (2) Table would be amended and Note 6 thereto would be 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), § 173.301(j) (see notes following table)
(add) * * *	* * *	* * *
Methylacetylene-propadiene, stabilized (see Note 5).	Not liquid full at 130° F.	DOT-4B240, without brazed seams; DOT-4BA240, without brazed seams; DOT-3A240; DOT-3AA240; DOT-3B240; DOT-3E1800; DOT-4BW240; DOT-4B240ET; DOT-4; DOT-4I.
(cancel) * * *	50	ICC-3A240; ICC-3AA240; ICC-3B240; ICC-4B240; ICC-4BA240; ICC-4BW240; ICC-4B240ET.

NOTE 6: [Canceled]

(D) In § 173.314 paragraph (c) Table and paragraph (e) would be amended as follows:

§ 173.314 Requirements for compressed gases in tank cars.

(c) * * *

Kind of gas	Maximum permitted filling density, Note 1	Required tank car, see § 173.31(a) (2) and (3)
(add) * * *	(Percent) * * *	* * *
Methylacetylenepropadiene, stabilized	Note 22	DOT 105A300W; 112A340W; 114A340W; 106A500X, Notes 4 and 9.
(cancel) * * *	56	ICC 105A300W.

(e) *Verification of content.* The amount of liquefied gas loaded into each tank may be determined either by measurement or calculation of the weight. If by measurement, the weight must be checked after disconnecting the loading line by the use of proper scales. If by calculation, the weight of liquefied petroleum gas, methylacetylene-propadiene, stabilized, dimethylamine, monomethylamine, or trimethylamine may be calculated using the outage tables supplied by the tank car owners and the specific gravities as determined at the

plant, and this computation must be checked by determination of specific gravity of product after loading. Carriers may verify calculated weights by use of proper scales.

(E) In § 173.315 paragraphs (a) (1) Table, (h) (2) Table, and (i) (2) Table would be amended as follows:

§ 173.315 Compressed gases in cargo tanks and portable tank containers.

- (a) * * *
- (1) * * *

Kind of gas	Maximum permitted filling density		Specification container required	
	Percent by weight (see Note 1)	Percent by volume (see par. (f) of this section)	Type (see Note 2)	Minimum design pressure (p.s.i.g.)
(add) * * * * *				
Methylacetylenepropadiene, stabilized (see Note 13).	53	90	DOT-51, MC-330, 200. MC-331.	

(h) * * *	(2) * * *	Kind of gas (add)	Permitted gaging device for primary control in filling
		Methylacetylene-propadiene, stabilized.	Rotary tube; adjustable slip tube; fixed length dip tube.
(i) * * *	(2) * * *	Kind of gas (add)	Minimum start-to-discharge pressure (p.s.i.g.)
		Methylacetylene-propadiene, stabilized.	200

(2) A dip tube gaging device consists of a pipe or tube with a valve at its outer end, with its intake limited by an orifice not larger than 0.060 inch in diameter. If a fixed length dip tube is used the intake must be located midway of the tank both longitudinally and laterally and at maximum permitted filling level and in tanks for transporting liquefied petroleum gases, and methylacetylene-propadiene, stabilized, it must be located at the level reached by the lading when the tank is loaded to maximum filling density at 40° F.

II. Part 176.

§ 176.703 [Amended]

In § 176.703 paragraph (b) Table, would be amended by inserting "Methylacetylene-propadiene, stabilized * * * Red gas label" between "Liquefied petroleum" and "Methyl chloride".

III. Part 178.

In § 178.337-14 paragraph (a) (1) Table and paragraph (a) (2) would be amended as follows:

§ 178.337 Specification MC 331; cargo tanks constructed of steel, primarily for transportation of compressed gases as defined in the Compressed Gas Section.

§ 178.337-14 Gaging devices.

- (a) * * *
- (1) * * *

IV. Part 179.

In § 179.102-11 the Heading and the introductory text of paragraph (a) would be amended to read as follows:

§ 179.102 Special commodity requirements for pressure tank car tanks.

§ 179.102-11 Liquefied petroleum gas, methylacetylene-propadiene, stabilized or anhydrous ammonia.

(a) Specification 105A300W, 112A340W, 112A400W, or 114A340W tank cars used to transport liquefied petroleum gas, methylacetylene-propadiene, stabilized or anhydrous ammonia may, as an alternate, comply with the following special requirements:

- * * *

Interested persons are invited to give their views on this proposal. Communications should identify the document number 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 or before March 16, 1971, will be considered before final action is taken on the proposal. 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.

This proposal is 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)). Nothing proposed herein is intended to preclude Board consideration of matters proposed in Docket No. HM-63; Notice No. 70-20 (35 F.R. 16741) and comments received on that proposal.

Issued in Washington, D.C., on January 27, 1971.

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