



DEPARTMENT OF TRANSPORTATION  
 RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION  
 WASHINGTON, D.C. 20590

2121

**Research and Special Programs Administration**

49 CFR Parts 172 and 173

[Docket No. HM-186H; Notice No. 80-10]

**Hazardous Materials Tables and Hazardous Materials Communications Regulations; Shippers—General Regulations for Shipments and Packagings; Dispersant and Refrigerant Gases**

**AGENCY:** Materials Transportation Bureau, Research and Special Programs Administration, DOT.

**ACTION:** Notice of proposed rulemaking.

**SUMMARY:** The Materials Transportation Bureau (MTB) is proposing to make several amendments to the Department's Hazardous Materials Regulations pertaining to the shipment of Dispersant gas and Refrigerant gas. This action is necessary to update the regulations and reduce MTB's backlog of rulemaking petitions.

**DATE:** Comments must be received on or before February 23, 1981.

**ADDRESS:** Address comments to Dockets Branch, Materials Transportation Bureau, U.S. Department of Transportation, Washington, D.C. 20590. It is requested that the docket number be identified and that five copies be submitted. The Dockets Branch is located in Room 8428 of the Nassif Building, 400 7th Street, SW, Washington, D. C. Office hours are 8:30 a.m. to 5:00 p.m., Monday through Friday. Telephone (202) 426-3148.

**FOR FURTHER INFORMATION CONTACT:** Darrell L. Raines, Chief, Exemptions and Regulations Termination Branch, Office of Hazardous Materials Regulation, Materials Transportation Bureau, Research and Special Programs Administration, Washington, D.C. 20590, (202-472-2728).

**SUPPLEMENTARY INFORMATION:** This document is the tenth in a series of notices and amendments to incorporate changes in the Hazardous Materials Regulations based on either petitions for rulemaking submitted in accordance with 49 CFR 106.31 or on MTB's own initiative.

These changes are based on a petition from the Compressed Gas Association on October 26, 1972 which would authorize shipments of fluorinated hydrocarbons and their many mixtures under a group category

of Dispersant gas, n.o.s., or Refrigerant gas, n.o.s. and on several exemptions which have been issued during the past several years. these proposed changes

should not have any affect on the safe handling and transportation of these gases.

In consideration of the foregoing, Parts 172 and 173 of 49 CFR would be amended as follows:

**PART 172—HAZARDOUS MATERIALS TABLES AND HAZARDOUS MATERIALS COMMUNICATIONS REGULATIONS**

**§ 172.101 [Amended]**

1. In § 172.101 the Hazardous Materials Table would be amended by changing the following entries in Column 2, Hazardous materials description and proper shipping names, to read as follows; the other table entries for these commodities would be deleted:

Present—Col. (2)	Proposed—Col. (2)
Dichlorodifluoromethane and difluoroethane mixture (constant boiling mixture).	Dichlorodifluoromethane and difluoroethane mixture (constant boiling mixture R-500). See Refrigerant gas, n.o.s. or Dispersant gas, n.o.s.
Dichlorodifluoromethane-dichlorotetrafluoroethane mixture.....	Dichlorodifluoromethane (R-12) and dichlorotetrafluoroethane (R-114) mixture. See Refrigerant gas, n.o.s. or Dispersant gas, n.o.s.
Dichlorodifluoromethane-monochlorodifluoromethane mixture.....	Dichlorodifluoromethane (R-12) and chlorodifluoromethane (R-22) mixture. See Refrigerant gas, n.o.s. or Dispersant gas, n.o.s.
Dichlorodifluoromethane-trichloromonofluoromethane mixture.....	Dichlorodifluoromethane (R-12) and trichlorofluoromethane (R-11) mixture. See Refrigerant gas, n.o.s. or Dispersant gas, n.o.s.
Dichlorodifluoromethane-trichloromonofluoromethane-monochlorodifluoromethane mixture.	Dichlorodifluoromethane (R-12), trichlorofluoromethane (R-11) and chlorodifluoromethane (R-22) mixture. See Refrigerant gas, n.o.s. or Dispersant gas, n.o.s.
Dichlorodifluoromethane-trichlorotrifluoroethane mixture.....	Dichlorodifluoromethane (R-12) and trichlorotrifluoroethane (R-113) mixture. See Refrigerant gas, n.o.s. or Dispersant gas, n.o.s.
Dispersant gas or Refrigerant gas. See § 173.314 Note 13 and § 173.315 Note 8.	Dispersant gas, n.o.s. See Refrigerant gas, n.o.s.
Refrigerant gas. See Dispersant gas.....	
	<b>Add</b>
	Chlorodifluoromethane and chloropentafluoroethane mixture (constant boiling mixture) (R-502). See Refrigerant gas, n.o.s.

2. In § 172.101 the Hazardous Materials Table would be amended by changing the following entries in Column 2, Hazardous materials description and proper shipping names, to read as follows; appropriate identification number would be assigned to each entry; all other table entries for these commodities would remain unchanged:

Present—Col. (2)	Proposed—Col. (2)
Dichlorodifluoromethane.....	Dichlorodifluoromethane (R-12).
1,1-Difluoro-1-chloroethane. See Difluoromonochloroethane.....	1-Chloro-1,1-difluoroethane. See Chlorodifluoroethane (R-142b).
Difluoroethane.....	Difluoroethane (R-152a).
Difluoromonochloroethane.....	Chlorodifluoroethane (R-142b) or (1-Chloro-1,1-difluoroethane).
Monobromotrifluoromethane.....	Bromotrifluoromethane (R-13B1 or H-1301).
Monochlorodifluoromethane.....	Chlorodifluoromethane (R-22).
Monochloropentafluoroethane.....	Chloropentafluoroethane (R-115).
Monochlorotetrafluoroethane.....	Chlorotetrafluoroethane (R-124).
Monochlorotrifluoromethane.....	Chlorotrifluoromethane (R-13).

3. In § 172.101 the Hazardous Materials Table would be amended by adding the following entries:

§ 172.101 Hazardous materials table.

(1) +/ E/ A/ W/	(2) Hazardous materials description and proper shipping names	(3) Hazard class	(3A) Identifi- cation number	(4) Labels required (if not excepted)	(5) Passenger		(6) Maximum net quantity in one package		(7) Water shipments		
					(a) Exception	(b) Specific require- ments	(a) Passenger carry- ing aircraft or railcar	(b) Cargo only air- craft	(a) Cargo VESSEL	(b) Pas- senger vessel	(c) Other requirements
	Refrigerant gas, n.o.s. or Disper- sant gas, n.o.s.	Nonflamma- ble gas	UN1978	Nonflamma- ble gas	(a) 173.306	(b) 173.304 173.314 173.315	(a) 150 pounds	(b) 300 pounds	1,2	1,2	
	Refrigerant gas, n.o.s. or Disper- sant gas, n.o.s.	Flammable gas	NA1954	Flammable gas	(a) 173.306	(b) 173.304 173.314 173.315	Forbidden	300 pounds	1,2	1	

**PART 173—SHIPPERS—GENERAL REGULATIONS FOR SHIPMENTS AND PACKAGINGS**

4. In § 173.300 paragraph (i) would be added to read:

**§ 173.300 Definitions.**

(i) *Refrigerant gas or Dispersant gas.* The term "Refrigerant gas" or "Dispersant gas" shall apply to all flammable or nonflammable, nonpoisonous refrigerant gases, dispersant gases and mixtures thereof (fluorocarbons) listed in §§ 172.101, 173.304(a)(2), 173.314(c), 173.315(a)(1)

and 173.315(h), or any other compressed gas, meeting one of the following:

(A) A nonflammable mixture containing not less than 50% fluorocarbon content, having a vapor pressure not exceeding 260 psig at 130°F.

(B) A flammable mixture containing not less than 50% fluorocarbon content, not over 40% by weight of a flammable component, having a vapor pressure not exceeding 260 psig at 130°F.

**§ 173.304 [Amended]**

5. In § 173.304 the Table in paragraph (a)(2) would be amended by changing the following entries (see proposed change in item number 2 above) to read:

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)
(Proposed)	Percent	
Chlorodifluoroethane (R-142b) (1-Chloro-1,1-difluoroethane) (see Note 8)	100	DOT-3A150, DOT-3AA150, DOT-3B150, DOT-4B150, DOT-4BA225, DOT-4BW225, DOT-3E1800, DOT-39.
Chlorodifluoromethane (R-22) (see Note 8)	105	DOT-3A240; DOT-3AA240; DOT-3B240; DOT-4B240; DOT-4BA240; DOT-4BW240; DOT-4B240ET; DOT-4E240; DOT-39; DOT-41; DOT-3E1800.
Chloropentafluoroethane (R-115) (see Note 8)	110	DOT-3A225; DOT-3AA225; DOT-3B225; DOT-4A225; DOT-4B225; DOT-4BA225; DOT-4BW225; DOT-3E1800; DOT-39.
Chlorotrifluoromethane (R-13) (see Note 8)	100	DOT-3A1800; DOT-3AA1800; DOT-3; DOT-3E1800; DOT-39.
(Add)		
Refrigerant gas, n.o.s. or Dispersant gas, n.o.s. (see Note 8)	Not liquid full at 130°F.	DOT-3A240; DOT-3AA240; DOT-3B240; DOT-3E1800; DOT-4A240; DOT-4B240; DOT-4BA240; DOT-4BW240; DOT-4E240; DOT-9; DOT-39.

**§ 173.314 [Amended]**

6. In § 173.314 the following named commodities in the Table in paragraph (c) would be deleted or revised, Note 4 would be revised, Notes 27 and 28 would be added to read as follows:

Kind of gas	Maximum permitted filling density (see Note 1)	Required tank car, see § 173.31(a) (2) and (3)
(Delete)		
Dichlorodifluoromethane and difluoroethane mixture (constant boiling mixture); Note 13.	Note 22	DOT-106A500X, 110A500W, Note 25. DOT-105A300W.
Dichlorodifluoromethane-dichlorotrifluoroethane mixture; Note 13.	119 125 Note 21	DOT-106A500X, 110A500W, Note 25. DOT-105A300W. DOT-112A340W, 114A340W.
Dichlorodifluoromethane-monochlorodifluoroethane mixture; Note 13.	119 125 123	DOT-106A500X, 110A500W, Note 25. DOT-105A300-W. DOT-112A340W, 114A340W.
Dichlorodifluoromethane-monofluorotrichloromethane mixture; Note 13.	Note 22 Note 21	DOT-106A500X, 110A500-W, Note 25. DOT-105A300-W. DOT-112A340W, 114A340W.
Dichlorodifluoromethane-trichloromonofluoroethane-monochlorodifluoroethane mixture; Note 13.	119 125 123	DOT-106A500X, 110A500W, Note 25. DOT-105A300-W. DOT-112A340W, 114A340W.
Dichlorodifluoromethane-trichlorotrifluoroethane mixtures; Note 13.	119 125 123	DOT-106A500X, 110A500-W, Note 25. DOT-105A300-W. DOT-112A340W, 114A340W.
(Revise)		
Dichlorodifluoromethane (R-12); Note 13.	119 123 125	DOT-106A500X, 110A500W, Note 25. DOT-112A340W, 114A340W, Note 23. DOT-105A300W.
Difluoroethane (R-152a); Note 4, Note 13.	78 79 84	DOT-112A400W, 114A340W, Note 23, and 27. DOT-106A500X, 110A500W, Note 25. DOT-105A300W.
Chlorodifluoroethane; (R-142b) (1-Chloro-1,1-difluoroethane); Note 4, Note 13.	100	DOT-106A500X, 110A500W, Note 25. DOT-105A100W. DOT-114A340W, Note 23.
Bromotrifluoromethane (R-13B1 or H-1301).	124 140	DOT-110A800W, Note 7 and 13. DOT-105A500W, Note 13.
Chlorodifluoromethane (R-22)	105 110 109 Note 21	DOT-106A500X, 110A500W, Note 25. DOT-105A300W. DOT-112A400W. DOT-114A340W, Note 7.

§ 172.101 Hazardous materials table.

(1)	(2)	(3)	(3A)	(4)	(5)		(6)		(7)		
					Passenger	Passenger	Maximum net quantity in one package	Water shipments	(a)	(b)	(c)
	Hazardous materials description and proper shipping names	Hazard class	Identification number	Labels required (if not excepted)	(a) Exception	(b) Specific requirements	(a) Passenger aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Refrigerant gas, n.o.s. or Dispersant gas, n.o.s.	Nonflammable gas	UN1978	Nonflammable gas	173.306	173.306 173.314 173.315	190 pounds	300 pounds	1,2	1,2	
	Refrigerant gas, n.o.s. or Dispersant gas, n.o.s.	Flammable gas	NA1954	Flammable gas	173.306	173.306 173.314 173.315	Forbidden	300 pounds	1,2	1	

Kind of gas	Maximum permitted filling density (see Note 1)	Required tank car, see § 173.31(a) (2) and (3)
Chlorotetrafluoroethane (R-124; Note 13) (Add)	125 126	DOT-106A500X, 110A500W, Note 25. DOT-112A400W.
Refrigerant gas n.o.s. or Dispersant gas, n.o.s.	Note 21	DOT-106A500X, 110A500W, Note 25. DOT-106A300W. DOT-112A340W, 114A340W, Notes 23 and 27.

NOTE 4: For tank cars other than DOT-106A and DOT-110A used for the transportation of liquefied flammable gases, inter- or pipes of loading and unloading valves must be equipped with excess-flow valves of approved design.

NOTE 27: DOT-112A340W, 112A400W, 114A340W tank cars may be equipped with bottom outlets, except that the bottom outlets must be rendered inoperative and effectively sealed to preclude bottom unloading when transporting flammable gases.  
NOTE 28: A maximum safety relief valve setting of 280.5 psi is authorized on DOT Specification 114A340W tank car tanks.

7. In § 173.315 the Table in paragraph (a)(1) would be revised by deleting the following entries and adding Refrigerant gas, n.o.s. or Dispersant gas, n.o.s. The Table in paragraph (h) would be revised by changing the heading in the second column, three entries would be deleted and Refrigerant gas, n.o.s. or Dispersant gas, n.o.s. would be added to read:

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

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 (psig)
(Delete) Dichlorodifluoromethane and difluoroethane mixture (constant boiling mixture) (see Note 9).	See para. (c) of this section.	do	MC-330, MC-331	250.
Dichlorodifluoromethane-dichlorotetrafluoroethane mixture (see Note 9).	119	do	DOT-51, MC-330, MC-331.	150.
Dichlorodifluoromethane-monofluorotrifluoromethane mixture (see Note 9).	See para. (c) of this section.	do	do	150.
(Add) Refrigerant gas n.o.s. or Dispersant gas n.o.s. (Revise)	See para. (c) of this section.	See Note 7	DOT-51, MC-330, MC-331.	See par. (c)(1) of this section.
Dichloromonochloroethane (see Note 9) would be changed to read as follows.	See Note 7		MC-330, MC-331	100.
Chlorodifluoroethane (R-142b) (1-chloro-1,1-difluoroethane) (see Note 9).	100	See Note 7	MC-330, MC-331	100.
Monochlorodifluoromethane (see Note 9) would be changed to read as follows.	105	See Note 7	DOT-51, MC-330, MC-331.	250.
Chlorodifluoroethane (R-22) (see Note 9).	105	See Note 7	DOT-51, MC-330, MC-331.	250.

(h) \* \* \*

Kind of gas	Gaging device permitted for filling purposes
(Delete) Dichlorodifluoromethane and difluoroethane mixture (constant boiling mixture).	None.
Dichlorodifluoromethane-dichlorotetrafluoroethane mixture.	None.
Dichlorodifluoromethane-monofluorotrifluoromethane mixture.	None.
(Add) Refrigerant gas, n.o.s. or Dispersant gas, n.o.s.	None.

\* \* \* \* \*  
(49 U.S.C. 1803, 1804, 1808; 49 CFR 1.53, App. A to Part 1 and paragraph (a)(4) of App. A to Part 106)

Note.—The Materials Transportation Bureau has determined that this document will not have a major impact under Executive Order 12221 and DOT implementing procedures (44 FR 11034), nor an Environmental impact under the National Environmental Policy Act (49 U.S.C. 4321 et seq.). A regulatory evaluation and environmental assessment are available for review in the docket.

Issued in Washington, D.C. on December 19, 1980.

Alan I. Roberts,  
Associate Director, Office of Hazardous Materials Regulation, Materials Transportation Bureau.

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