



U.S. Department  
of Transportation

**Pipeline and Hazardous  
Materials Safety  
Administration**

1200 New Jersey Avenue, SE  
Washington, DC 20590

SEP 07 2018

Andrea Kornbluth  
Mihama Corporation  
200 Pinehurst Avenue  
New York, NY 10033

Reference No. 17-0120

Dear Ms. Kornbluth:

This letter is in response to your October 31, 2017, email requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to pressure relief device (PRD) requirements for U.S. Department of Transportation (DOT) 39 specification cylinders. Specifically, you indicate that you fill these cylinders with “UN3252, Difluoromethane *or* Refrigerant gas R 32, 2.1.”

In accordance with § 173.301(f)(4), a PRD is required on a DOT 39 specification cylinder regardless of the cylinder size or the filled pressure. When used for a liquefied Division 2.1 material, a DOT 39 specification cylinder must be equipped with a metal PRD; fusible PRDs for liquefied gases are not authorized. Furthermore, § 173.301(f)(1) specifies that the PRD must be selected in accordance with CGA S-1.1 and CGA Pamphlet S-7, as incorporated by reference in § 171.7.

We have paraphrased and answered your questions as follows:

- Q1. You ask if a DOT 39 specification cylinder can be filled with more than 75 in<sup>3</sup> of “UN3252, Difluoromethane *or* Refrigerant gas R 32, 2.1.”
- A1. The answer is yes. Generally, R 32 refrigerant gases are classified as liquefied Division 2.1 flammable gases. Sections 173.304 and 173.304a provide the filling requirements for liquefied compressed gases and additional requirement for shipments of liquefied compressed gases in specification cylinders and do not specify that a DOT 39 specification cylinder cannot be filled with more than 75 in<sup>3</sup> of “UN3252, Difluoromethane *or* Refrigerant gas R 32, 2.1.”

As mentioned in your request, PHMSA published a revised safety advisory notice on April 24, 2017, titled “Hazardous Materials: Use of DOT Specification 39 Cylinders for Liquefied Flammable Compressed Gas” [82 FR 18967; Notice No. 2016-14], which clarified that DOT 39 specification cylinders exceeding 75 in<sup>3</sup> should not contain liquefied compressed cyclopropane, ethane, or ethylene, or liquefied petroleum gases. Your understanding is correct that this safety advisory did not apply to “UN3252, Difluoromethane *or* Refrigerant gas R 32, 2.1.”

Please note that on July 26, 2016, PHMSA published a notice of proposed rulemaking (NPRM) titled, "Hazardous Materials: Miscellaneous Amendments Pertaining to DOT-Specification Cylinders (RRR)" [81 FR 48977; HM-234], which proposed to revise the requirements for § 173.304a and restrict the internal volume of a DOT 39 cylinder to 1.23 liters (nominal 75 in<sup>3</sup>) for a liquefied flammable gas. This proposed amendment was based on a petition for rulemaking (P-1622; PHMSA-2013-0201).

- Q2. You ask if a DOT 39 specification cylinder filled with "UN3252, Difluoromethane *or* Refrigerant gas R 32, 2.1" can be fitted with a CG-1 PRD.
- A2. The answer is yes. As outlined in Table 3 of CGA S-1.1, Methylene Fluoride (R 32) is authorized to have a CG-1 PRD.
- Q3. You ask if a DOT 39 specification cylinder filled with "UN3252, Difluoromethane *or* Refrigerant gas R 32, 2.1" can be fitted with a CG-7 PRD.
- A3. The answer is yes. As outlined in Table 3 of CGA S-1.1, Methylene Fluoride (R 32) is authorized to have a CG-7 PRD.
- Q4. You ask if a previous letter of interpretation on this topic (Reference No. 11-0117) applies to the scenario in your request.
- A4. The answer is no. Reference No. 11-0117, issued by this Office on June 13, 2011, addresses PRD selection for a DOT 39 specification cylinder filled with HFO-1234yf shipped as "UN3161, Liquefied gas, flammable, n.o.s. (2,3,3,3-Tetrafluoroprop-1-ene), 2.1." Reference No. 11-0117 does not reflect your scenario because you have a different commodity. Further, as opposed to Methylene Fluoride (R 32), which is listed in Table 3 of the CGA S-1.1, HFO-1234yf or 2,3,3,3-Tetrafluoroprop-1-ene is not listed in Table 3, meaning that further analysis must be conducted to select the appropriate PRD for the cylinder. Please note that HM-234 proposed to require the use of a CGA CG-7 PRD for liquefied flammable gases in DOT 39 specification cylinders when the gas is not listed in CGA S-1.1.

I hope this information is helpful. Please contact us if we can be of further assistance.

Sincerely,



Dirk Der Kinderen  
Chief, Standards Development  
Standards and Rulemaking Division

**January, Ikeya CTR (PHMSA)**

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**From:** Foster, Glenn (PHMSA)  
**Sent:** Wednesday, November 01, 2017 8:29 AM  
**To:** Dodd, Alice (PHMSA); January, Ikeya CTR (PHMSA)  
**Subject:** Question regarding PRDs for DOT-39 cylinders

Geller  
Cylinders  
173.304a + 178.65  
17-0120

Alice / Ikeya,

Please have the inquiry below checked in as an Interp and assigned to a Specialist.

Thanks,  
Glenn

**From:** Foster, Glenn (PHMSA)  
**Sent:** Wednesday, November 01, 2017 8:28 AM  
**To:** 'Andrea Kornbluth' <akornbluth@mihama.com>  
**Subject:** Question regarding PRDs for DOT-39 cylinders

Ms. Kornbluth,

Thank you for your inquiry. I will forward it to the appropriate individuals have it checked in as a request for a Letter of Interpretation.

Regards,  
Glenn

**From:** Andrea Kornbluth [<mailto:akornbluth@mihama.com>]  
**Sent:** Tuesday, October 31, 2017 12:32 PM  
**To:** Foster, Glenn (PHMSA) <[Glenn.Foster@dot.gov](mailto:Glenn.Foster@dot.gov)>  
**Subject:** Question regarding PRDs for DOT-39 cylinders

Dear Mr. Foster,

Our company, a supplier of U.S.-made DOT-39 NRCs in Japan, understands from your revised safety advisory notice of April 21, 2017 (Docket No. PHMSA-2016-0078; Notice No. 2016-14) that the 75 in3 volume limit applies to liquified compressed cyclopropane, ethane, ethylene, or liquified petroleum gases, and not to mildly flammable gases such as HFO-1234yf or R-32.

We would appreciate it if you could clarify the PRD requirements for gases in this mildly flammable category. In your letter to Mr. Steve Gentry of Worthington Cylinders dated June 13, 2011 (Reference No. 11-0117), you state in A2 that "CGA Publication S-1.1 does, however, mandate a CG-7 PRD for other similar liquified compressed gases and it is the opinion of this Office that cylinders containing HFO-1234yf must be fitted with a CG-7 PRD." However, CGA Publication S-1.1 currently allows for cylinders filled with R-32 to be fitted with a CG-7 or a CG-1. Is it acceptable for a DOT-39 cylinder filled with more than 75 in3 of R-32 to be fitted with a CG-1 PD?

Thank you for your attention to this matter.

Sincerely,