



U.S. Department
of Transportation

Pipeline and Hazardous
Materials Safety
Administration

1200 New Jersey Avenue, SE
Washington, DC 20590

AUG 14 2019

Mr. Billy Stover
HSE Transport Safety and Compliance Manager
Linde Gas North America
200 Somerset Blvd.
Suite 6000
Bridgewater, NJ 08807

Reference No. 19-0049

Dear Mr. Stover:

This letter is in response to your April 10, 2019, letter requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to filling limits for cylinders. Specifically, you request clarification regarding the use of Department of Transportation (DOT) 3A and 3AA cylinders for the transport of Deuterium. In your letter, you state that on January 21, 2016, a final rule was published in the *Federal Register* (HM-233F; 81 FR 3636) that incorporated DOT Special Permit 6530 (SP 6530) which allowed certain 3-series cylinders of hydrogen and hydrogen mixtures to be filled to 110 percent of their marked service pressure. This incorporation was added as a new paragraph, § 173.302a(c). You also state that because of this revision to the HMR, you believe that it is not necessary to be a party to this SP, mark the SP number on your trailers, or maintain a copy of the SP on board the trailers and at the fill site.

We have paraphrased and answered your questions as follows:

- Q1. You ask whether the HMR currently allow Deuterium and Deuterium gas mixtures to be transported in DOT 3A and 3AA cylinders and filled to 110 percent of their marked service pressure.
- A1. The answer is no. Deuterium and Deuterium gas mixtures were not included in SP 6530 until December 2, 2015. The HM-233F Notice of Proposed Rulemaking (NPRM) [80 FR 5340], Section I., Executive Summary, stated that the proposal was based on a review of all active special permits as of January 1, 2013. Deuterium and Deuterium gas mixtures were not authorized in SP 6530 as of January 1, 2013, and thus were not considered in the adoption of the SP in the rulemaking. As currently written, § 173.302a(c) does not allow cylinders containing Deuterium or Deuterium gas mixtures to be filled to 110 percent of their marked service pressure.
- Q2. You ask why Deuterium and Deuterium gas mixtures are included in SP 6530 but not included in the current HMR.
- A2. Please see answer A1.

Q3. Provided the HMR do not authorize Deuterium and Deuterium gas mixtures to be filled to 110 percent of their marked service pressure, you ask whether you may utilize the 10 percent overfill allowance.

A3. As currently written, § 173.302a(c) does not authorize cylinders of Deuterium and Deuterium gas mixtures to be filled to 110 percent of their marked service pressure. However, SP 6530, to which your company appears to be a party, continues to be active and allows this overfill. Therefore, provided you continue to comply with the terms and conditions of the SP, you may overfill the specified cylinders to 110 percent of their marked service pressure.

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

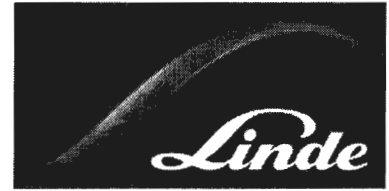
Sincerely,

A handwritten signature in cursive script that reads "T. Glenn Foster". The signature is written in black ink and is positioned to the left of the typed name.

T. Glenn Foster
Chief, Regulatory Review and Reinvention Branch
Standards and Rulemaking Division

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§ 105.20
19-0049



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April 10, 2019

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Pipeline and Hazardous Materials Safety Administration, Attn: PHH-10 U.S. Department of
Transportation, East Building
1200 New Jersey Avenue, SE.
Washington, DC 20590-0001
PHMSA.Pipelinesafety@dot.gov

Request for Interpretation

Dear Sir or Madame,

Linde Gas North America (Linde) is requesting interpretation and guidance regarding the use of DOT 3A and 3AA for the transport of Deuterium.

Background

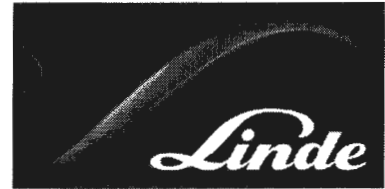
Deuterium is an isotope of Hydrogen and is filled into 3A and 3AA cylinders with less than 1251b water capacity as permitted by 49 CFR 173.301.

49 CFR 180.209(b)(1) permits the requalification of such cylinders for a period of ten years if the requirements of 180.209(b)(1)(ii) are met. This subparagraph allows the filling of hydrogen into such cylinders tested at ten-year intervals.

Regulations incorporated on January 21, 2016, into 49 CFR § 173.302a(c), now allow certain, 3-Series cylinders and tubes to be filled with hydrogen to 10% over their marked service pressure. The new DOT regulations have incorporated into the CFR the same cylinder and pressure relief device requirements that had been part of long-time DOT special permit, DOT-SP 6530. Due to this incorporation of safety control measures and special provisions in DOT-SP 6530, it is no longer necessary to be party to this special permit, mark it on your tube trailers and maintain a copy of the permit on board the trailer and at your fill site.

A review of Interpretation No: 13-0092 DOT-SP-6530 permit authorized the transport of hydrogen and mixtures of hydrogen. Deuterium and mixtures of deuterium were authorized in the revision prior to incorporating into the CFR. <https://www.phmsa.dot.gov/approvals-and-permits/hazmat/file-serve/offer/SP6530.pdf/2014120204/SP6530>

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Question 1

Since Deuterium and Deuterium gas mixes were included in Special Permit 6530, would it be also allowed by the updated regulations?

Question 2

Why weren't Deuterium and Deuterium mixes included in the updated regulations but allowed in special permit 6530?

Question 3

If the gas and mixtures were not included due to an oversight, how can we currently apply the 10% overfill to cylinders with these gas mixtures?

A written response at your earliest convenience is appreciated.

Sincerely,

Billy Stover

Billy Stover
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Linde Gas North America
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