



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

February 1, 2024

Mr. Jason Bombard, PE
Electronic Fluorocarbons
3266 Bergey Road
Hatfield, PA 19440

Reference No. 23-0027

Dear Mr. Bombard:

This is in response to your March 14, 2023, letter concerning the filling densities of specification cylinders under the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180). In your letter, you ask about the maximum allowable filling density of a specification cylinder containing a mixture comprised of 30% Fluorine, 60% Nitrogen, and 10% Argon by volume. You state that you offer this mixture using the proper shipping name “UN3306, Compressed gas, toxic, oxidizing, corrosive, n.o.s. *Inhalation Hazard Zone B, 2.3, (5.1, 8).*” You also note that § 173.301a(d)(3) limits the pressure in a specification cylinder to no higher than its service pressure at 55°C (131°F). You ask whether there is any additional hazard posed by the fluorine content of this mixture that would further limit the service pressure of the specification cylinder.

The answer is no. Provided your material is properly classed as “UN3306, Compressed gas, toxic, oxidizing, corrosive, n.o.s. *Inhalation Hazard Zone B, 2.3, (5.1, 8).*” the pressure in a specification cylinder at 55°C (131°F) must be limited to the service pressure of the cylinder in accordance with §§ 173.301a(d)(3) and 173.40(b). Please note that sufficient outage must be provided so that the cylinder will not be liquid full at 55°C (131°F).

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

Sincerely,

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



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23-0027 Andrews

Pipeline and Hazardous Materials Safety Administration
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Washington, DC 20590

March 14, 2023

Interpretation of 49 CFR

Dear Sir or Madam:

I am writing to ask for an interpretation of 49 CFR regarding the maximum allowable filling density of a 30% F₂, 60% N₂, 10% Ar mixture by volume. This is shipped as UN3306: Compressed Gas, Toxic, Oxidizing, Corrosive, N.O.S. with a Zone B hazard classification. 173.301a(d)(3) limits the pressure in the cylinder to no higher than its service pressure at 55 °C (131 °F). Is there any additional hazard posed by the fluorine content that would further limit this?

Thank you for your help with this. If you have any questions or I can provide any clarification, please do not hesitate to contact me.

Best regards,
Jason Bombard, PE
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