



U.S. Department
of Transportation

**Research and
Special Programs
Administration**

400 Seventh Street, S.W.
Washington, D.C. 20590

MAR 10 1998

Mr. William Miller
Manager-Environmental Gases
Spectra Gases, Inc.
80 Industrial Drive
Alpha, NJ 08865

Dear Mr. Miller:

This is in response to your letter dated February 10, 1998, regarding packaging dilute mixtures of hydrogen chloride (HCl), anhydrous, chlorine (Cl₂), anhydrous, and hydrogen fluoride (HF), anhydrous with nitrogen, in a DOT-39 aluminum cylinder under the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180). Specifically, you ask whether it is permissible to fill mixtures of Cl₂, HCl and HF at concentrations of 300 ppm or less and at pressures of 500 to 1,000 p.s.i.g., with balance nitrogen, in DOT-39 aluminum cylinders.

Based on your statement that you have evidence that your dilute concentrations are not corrosive to aluminum, you may use a DOT-39 cylinder up to 500 p.s.i.g. Section 178.65(b)(2) states that an aluminum DOT-39 cylinder is not authorized for service pressures in excess of 500 p.s.i.g. However, you may apply for an exemption as provided in § 107.105 for use of a DOT-39 cylinder above 500 p.s.i.g.

I hope this answers your inquiry. If we can be of further assistance, please contact us.

Sincerely,

Delmer F. Billings
Chief, Standards Development
Office of Hazardous Materials Standards

80 Industrial Drive
Alpha, NJ 08865
Phone: (908)454-7455 ext. 227
Fax: (908)454-7784

*Bill Miller
703-173-306
SC*



Fax

To: USDOT - Office of Hazardous Materials **From:** Bill Miller
Standard. Attn: Jodie George

Fax: 202-366-8700 **Pages:** 1

Phone: 202-366-8553 **Date:** 02/10/98

Re: Phone Conversation of 2/9/98 **CC:**

Urgent For Review Please Comment Please Reply Please Recycle

Dear Ms. George,

This is to clarify my request for determination which we discussed by phone yesterday. It relates to the ruling in 49CFR that halogen gases are not compatible with aluminum cylinders.

The section of 49CFR which you cited in our phone conversation last week (173.306) does not seem to apply. It cites quantities of less than 4 Fluid ounces at less than 170psig. The containers we wish to use contain up to 104 liters of gas at pressures of 500 to 1,000psig. The containers are DOT Specification 39NRC, of aluminum alloy construction.

The products we wish to ship are dilute mixtures of HCl, anhydrous, Cl₂, Anhydrous, and HF, Anhydrous in balance of Nitrogen. Concentrations are normally 300ppm or less. The proper shipping name for these products is Compressed Gas NOS, Non-Flammable Gas.

We have evidence that these products do not react with or corrode the aluminum cylinder surface, as we have standards made for internal use, one to three years old, in which the concentration of the minor component has been almost constant over time, indicating that there has been no reaction with the container.

Further, we have purchased these products, specifically HCL in Nitrogen, 10ppm, and CL₂ in Nitrogen 100ppm from two other companies that claim they are not violating DOT regulations, however, would not offer proof that this complies with 49CFR. Since the passage in question does not seem to indicate if it applies to only pure halogen gases in aluminum cylinders, or at what dilution it no longer applies, we are requesting clarification from you.

Thank you very much for your assistance.

Bill Miller