



26-0022

Larson

Air Liquide Advanced Materials (ALAM)
3040 US Highway 22
Branchburg New Jersey 08876
United States of America

Branchburg, January 24th, 2026

U.S. Department of Transportation
Standards & Rulemaking Division - East Building
Pipeline Hazardous Materials Safety Administration
Attn: Shane Kelley (PHH-10)
Director, Standards and Rulemaking Division
1200 New Jersey Avenue, SE East Building, 2nd Floor
Washington, DC 20590

Certified Return-Receipt

Subject: Request for formal Letter of Interpretation regarding Classification for a specific silylamine compound, as it presents hazards similar to those of Trisilylamine.

Dear Mr. Kelley,

This letter is submitted to respectfully request a formal letter of guidance and interpretation from your office regarding the classification of a specific *silylamine compound*. This material is processed by Air Liquide Advanced Materials; however, due to confidentiality concerns, we are unfortunately unable to disclose the chemical identity at this time.

This *silylamine compound* is a chemical substance developed for applications in the semiconductor industry. It is an equivalent compound to Trisilylamine (CAS#13862-16-3) and exhibits similar characteristics as defined by the classification criteria outlined in 49 CFR Subpart D of Part 173:

- Hazard Class Division 6.1: Toxic by Inhalation (Inhalation Hazard Zone B), PG I
- Hazard Class Division 4.3: Water Reactive, PG I
- Hazard Class 8: Corrosive (Dermal), PG I
- Hazard Class 3: Flammable Liquid, PG II

Based on 49 CFR §173.2a, Precedence of Hazard Table, and available and appropriate D.O.T. Basic Descriptions found in 49 CFR §172.101 (Hazardous Materials Table), Air Liquide Advanced Materials has selected the following description:



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UN3491, Toxic by inhalation liquid, water-reactive, flammable n.o.s. (*Silylamine compound*)

For identifying this chemical for shipments offered throughout the United States and the international community, correspondence with professional and technical leaders within our industry concurs with this decision.

However, this description excludes the corrosive characteristics of this chemical.

A similar request was submitted by Air Liquide regarding Trisilylamine (guidance letter reference No. 13-0003, March 08, 2013). For transportation within the United States in accordance with the HMR, § 172.402(a)(2) mandates that all hazardous materials with a Class 8, PG I, subsidiary hazard must be labeled with a subsidiary CORROSIVE hazard warning label for all modes of transport. This supplementary label presented significant difficulties when shipping trisilylamine internationally, as shippers, freight forwarders/carriers, and non-U.S. customs officials rely solely on the UN code hazards and require the removal of the "CORROSIVE" label prior to vessel loading.

Air Liquide Advanced Materials and its partners are seeking regulatory guidance and interpretation from your office on the proper classification of this *silylamine compound* based on the current regulations of Title 49 CFR, specifically addressing how to properly account for the corrosivity (Class 8) alongside the Toxic, Water-Reactive, and Flammable hazards.

Air Liquide Advanced Materials is committed to the safe and compliant transportation of hazardous materials. Should you have any questions or require further information, please do not hesitate to contact me directly at 908-465-2673 or by email at guillaume.husson@airliquide.com.

Respectfully,

Guillaume Husson

Global Product Stewardship Manager

Air Liquide Advanced Materials

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U.S. Department
of Transportation
**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

August 13, 2026

Guillaume Husson
Global Product Stewardship Manager
Air Liquide Advanced Materials
3040 US Highway 22
Branchburg, NJ 08876

Reference No. 26-0022

Dear Mr. Husson:

This letter is in response to your January 24, 2026 letter requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to the classification of a silylamine compound. Specifically, you are seeking clarification on the classification of the chemical compound which exhibits the following hazards: Division 6.1, inhalation Hazard Zone B, Packing Group (PG) I; Division 4.3, PG I; Class 8, PG I; and Class 3, PG II. You state that, based on the precedence of hazards described in § 173.2a, your company has selected the description “UN3491, Toxic by inhalation liquid, water-reactive, flammable, n.o.s. (Silylamine compound), 6.1(4.3, 3), PG I.” You further state that this description excludes the corrosive characteristics of the material, and that § 172.402(a)(2), as referenced in a previous letter of interpretation (LOI Ref No. 13-0003), mandates all materials with a Class 8, PG I subsidiary hazard be labelled with a CORROSIVE label.¹ Lastly, you state that applying the CORROSIVE subsidiary hazard label when the corrosive hazard is not identified in the shipping description for UN3491 has led to frustration of your shipments because many freight forwarders and carriers rely solely on the hazard codes in the description, and they require the removal of the CORROSIVE label.

In accordance with § 173.22 of the HMR, it is the shipper’s responsibility to properly classify hazardous materials, as this Office does not generally perform this function. However, based on the information provided in your letter, it is the opinion of this Office that the description of “UN3491, Toxic by inhalation liquid, water-reactive, flammable, n.o.s. (Silylamine compound), 6.1 (4.3, 8, 3), PG I” is correct. For transport within the United States, § 172.402(a)(2) requires all hazardous materials with a Class 8, PG I, subsidiary hazard to be labeled with a subsidiary

¹ Air Liquide USA LLC, *Letter of Interpretation Reference Number 13-0003*, available at <https://www.phmsa.dot.gov/regulations/title49/interp/13-0003>.

CORROSIVE hazard warning label in all modes of transport. Therefore, the subsidiary hazard class must be entered in the proper shipping description as well (*see* § 172.202(a)(3)).

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

Sincerely,

A handwritten signature in blue ink, reading "Alexander Wolcott". The signature is fluid and cursive, with a long horizontal stroke at the end.

Alexander Wolcott
Acting Chief, Regulatory Review and Reinvention Branch
Standards and Rulemaking Division