



U.S. Department  
of Transportation

**Research and  
Special Programs  
Administration**

JUN 3 2004

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

Mr. Kevin W. Johnston, CIH, CSP  
Director, Health, Safety & Environmental Affairs  
Sovereign Specialty Chemicals  
710 Ohio Street  
Buffalo, New York 14203

Ref. No. 04-0093

Dear Mr. Johnston:

This responds to your April 6, 2004 letter requesting clarification on the hazard class of your products under the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180). Specifically, you request clarification on the hazard class of your products containing adhesives and gas propellants packaged in DOT specification cylinders.

According to your letter, your company manufactures certain adhesives and gas propellants packaged in DOT specification cylinders. Because of some confusion within the industry group that supplies such products regarding the appropriate method for determining whether the products meet the definition of a flammable gas, you are requesting our confirmation on the appropriate classification methodology.

Your questions are paraphrased and answered as follows:

Q1. Do the aerosol test methods specified in § 173.306(i) only apply to aerosols packaged in containers not exceeding one liter?

A1. Yes. The tests specified in § 173.306(i) are required for aerosols shipped under the limited quantity provisions of § 173.306. If your products do not meet the criteria for shipment as limited quantities, the tests specified in § 173.306(i) may not be used for your products.

Q2. Does the flammability of the adhesive products packaged in the non-refillable DOT specification 39 cylinders have to be determined using the tests methods specified in § 173.306(i) or ASTM E681-85 as referenced in § 173.115(a)?

A2. The flammability tests specified in § 173.306(i) are required for aerosols shipped under the limited quantity provisions of § 173.306. If your products do not meet the criteria for shipment as limited quantities, their flammability may not be determined using the test specified in § 173.306(i). If your products meet the definition specified in § 173.115(a) for Division 2.1, Flammable Gas, they must be classified as Division 2.1 materials using ASTM E681-85, Standard Test Method for Concentration Limits of Flammability of Chemicals or other equivalent method approved by the Associate Administrator.



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173.115  
173.306(i)

Q3. Are we correct that the flammability of the adhesive products packaged in DOT specification 4BW cylinders must be determined using ASTM E681-85 as specified in § 173.115(a) unless DOT specifically approves an alternate equivalent test method?

A3. Yes. The flammability of the adhesive products packaged in DOT specification 4BW cylinders must be determined using ASTM E681-85 as specified in § 173.115(a), unless an alternate equivalent test method is approved by the Associate Administrator.

Q4. Has DOT approved any alternate test methods (such as the flame projection test method specified in 16 CFR 1500.45 for consumer products) for flammable gas determinations as provided for in § 173.115(a)? If approval applications are published, will the public have the opportunity to comment if a party applied to use an alternate test methods?

A4. No, there are no approvals applications in our approvals data base applicable to flammable gas determinations as provided for in § 173.115(a) such as alternate test methods concerning the flame projection test specified in 16 CFR 1500.45 for consumer products. Unlike applications for exemptions, which are published in the Federal Register on a monthly basis, applications for approvals are not generally published. However, on occasion certain approval applications are published when public comments are requested. In addition, alternate test methods may be proposed in a notice of proposed rulemaking with a comment period requesting comments from the regulated community and the public.

Q5. If an adhesive product tests as non-flammable using the consumer products test method specified in 16 CFR 1500.45 and flammable using one of the DOT-specified test methods, would the results using the DOT-specified test method take precedence and compel the product to be classified as flammable?

A5. Yes. For transportation of hazardous materials in commerce, the DOT-specified test methods in the HMR would take precedence in classifying the adhesive product as flammable.

I hope this answers your inquiry.

Sincerely,



John A. Gale

Chief, Standards Development  
Office of Hazardous Materials Standards



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Boothe  
§ 173.115  
§ 173.306 (i)  
Compress Gas  
Kevin W. Johnston, CIH, CSP  
04-0093

Director, Health, Safety, Environmental Affairs

April 6, 2004

Mr. Edward T. Mazzullo  
Office of Hazardous Materials Standards  
Research and Special Programs Administration  
Attn: DHM-10  
U.S. Department of Transportation  
400 7<sup>th</sup> Street SW  
Washington, DC 20590-0001

**Re: Clarification of Flammability Determination for Adhesive Products**

Dear Mr. Mazzullo:

As a manufacturer and shipper of adhesive products in pressurized containers, we are interested in the proper classification of these products under the U.S. Department of Transportation's (DOT) hazardous materials regulations. Because there appears to be some confusion within the industry group that supplies such products regarding the appropriate method for determining whether the products meet DOT's definition of a flammable gas, we are requesting your confirmation of the appropriate classification methodology.

**Product Description**

For your reference, the products in question consist of DOT specification cylinders that contain adhesives and gas propellants. The cylinders range in size from approximately 11 pounds (7 liters) (e.g., DOT 39) to cylinders as large as approximately 177 pounds (108 liters) and 355 pounds (215 liters) (e.g., DOT 4BW). The products are equipped with a detachable hose and spray gun, which can be used to spray-apply the adhesives to various substrates.

**DOT Regulations**

DOT defines a *flammable* gas as material that is gas at 20 °C or less and 101.2 kPa or pressure that is (1) ignitable at 101.3 kPa when in a mixture of 13 percent or less by volume with air; or (2) has a flammable range at 101.3 kPa with air of at least 12 percent regardless of the lower limit. Except for aerosols, these limits shall be determined using ASTM E681-85, Standard Test Method for Concentration Limits of Flammability of Chemicals or other equivalent method approved by the Associate Administrator. 49 C.F.R. § 173.115(a).

DOT defines an *aerosol* as any non-refillable receptacle containing a gas compressed, liquefied, or dissolved under pressure, the sole purpose of which is to expel a nonpoisonous liquid paste, or powder and fitted with a self-closing release device that allows the contents to be ejected by the gas. 49 C.F.R. § 171.8. As noted above, some of the adhesive products of interest satisfy this definition (*e.g.*, those packaged in the Specification 39 cylinders), while others do not appear to fit within this definition because they are packaged in refillable containers (*e.g.*, Specification 4BW cylinders).

According to 49 C.F.R. § 173.115(a)(2), the flammability of aerosols is to be determined by the tests specified in 49 C.F.R. § 173.306(i). Section 173.306(i) specifies that an aerosol is flammable if a positive result is obtained using any of the following three methods: Bureau of Explosives' Flame Projection Apparatus, Bureau of Explosives' Open Drum Apparatus, or the Bureau of Explosives' Closed Drum Apparatus. Although neither the language in section 173.115(a)(2) nor the definition of aerosol in section 171.8 reference a capacity limit of one liter for aerosols, because section 173.306 applies to limited quantities, it is not clear whether the test methods specified in 49 C.F.R. § 173.306(i) can or must be used for aerosols in containers exceeding one liter capacity.

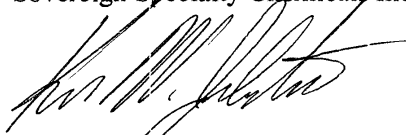
## Questions

1. Do the aerosol test methods specified in 49 C.F.R. § 173.306(i) only apply to aerosols packaged in containers not exceeding one liter?
2. Must the flammability of the adhesive products packaged in the non-refillable Specification 39 cylinders be determined using:
  - a. the aerosol test methods described in 49 C.F.R. § 173.306(i); or
  - b. ASTM E681-85 as referenced in 49 C.F.R. § 173.115(a)?
3. Are we correct that the flammability of the adhesive products packaged in the Specification 4BW cylinders must be determined using ASTM E681-85 as specified in 49 C.F.R. § 173.115(a) (unless DOT specifically approves an alternate equivalent test method)?
4. Has DOT approved any alternate test methods (such as the flame projection test method specified in 16 C.F.R. § 1500.45 for consumer products) for flammable gas determinations as provided for in 49 C.F.R. § 173.115(a)?
  - a. We understand that DOT normally does not publish applications for approvals. Would DOT provide an opportunity for public comment if a party applied to use an alternate test method such as the consumer products method referenced above for flammability determinations?
5. If an adhesive product tests as *non-flammable* using the consumer products test method specified in 16 C.F.R. § 1500.45 and *flammable* using one of the DOT-specified test methods, would the results using the DOT-specified test method take precedence and compel the product to be classified as flammable?

We thank you for your assistance in clarifying these matters.

Very truly yours,

Sovereign Specialty Chemicals Inc.

A handwritten signature in black ink, appearing to read "Kevin W. Johnston". The signature is fluid and cursive, with a large initial "K" and "J".

Kevin W. Johnston , CIH, CSP  
Director, Health, Safety & Environmental Affairs