U.S. Department
of Transportation
**Research and
Special Programs
Administration**

JAN 30 2002

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

Daniel M. Dixon, Jr.
Health, Safety and Environmental
Manager
ADCO Products, Inc.
P. O. Box 457
Michigan Center, MI 49254

Ref. No. 01-0266

Dear Mr. Dixon:

This is in response to your October 3, 2001 letter concerning assignment of a hazardous material to a specific packing group under the Hazardous Material Regulations (HMR: 49 CFR Parts 171-180). Specifically, you ask how to properly reassign a flammable liquid adhesive from a Packing Group II to a Packing Group III when the liquid is too thick to complete the ISO 2431 (1984) viscosity test in § 173.121(b)(2)(i), preventing the comparison of its viscosity and flash point required in § 173.121(b)(1)(iv). I apologize for the delay in responding and any inconvenience this may have caused.

You state that the adhesive has a flashpoint of 18°F and a boiling point of 185°F, does not separate when tested, does not contain any substances with a Division 6.1 (poison) or Class 8 (corrosive) hazard class, and is placed in six one-gallon inner packagings inside one outer packaging. You also state that the adhesive flows freely through an ISO standard cup until the cup is 50 to 75 percent full, then thickens while standing and does not flow freely for the remaining time required to complete the test. You further state that extrapolation of the test results yields flow times over 100 seconds through the 6 mm orifice.

It is the shipper's responsibility to properly classify a hazardous material in accordance with § 173.22. This office does not perform that function. However, based on the information you provided, it is our opinion that the test results you have already completed for the adhesive fulfill the intent of the viscosity test prescribed in § 173.121(b)(2)(i). No further calculations estimating product performance are necessary, and the adhesive meets the criteria to be assigned to Packing Group III as prescribed in § 173.121(b)(1).

I hope this satisfies your request.

Sincerely,

John A. Gale
Transportation Regulations Specialist
Office of Hazardous Materials Standards

010266

173.121

Stevens Edmonston
§173.121
Packing Group
01-0266

ADCO

Designing and Manufacturing Adhesive & Sealant Solutions

October 3, 2001

Mr. Edward Mazzullo
RSPA Office of Hazardous Materials Standards (DHM-10)
U.S. Department of Transportation
400 Seventh Street, SW
Washington, D.C. 20590

Subject: **Viscosity Test-49 CFR 173.121 (b)(2)(i)**

Dear Mr. Mazzullo:

We are requesting a written opinion concerning the following problem that we are experiencing with assigning a packing group to a product that we produce and offer for shipment:

We currently manufacture a liquid adhesive product that is considered a Class 3 flammable liquid based on a flash point of 18°F. The boiling point of the adhesive product is 185°F; therefore, we may assign the product to Packing Group II. The liquid adhesive contains materials which make it quite viscous. Under 49 CFR 173.121 (b) we can assign the product to Packing Group III if we meet the conditions set forth under 49 CFR 173.121 (b)(1).

We regularly conduct separation tests on the product and experience no separation; therefore, we meet the condition for 49 CFR 173.121 (b)(1)(i). The product does not contain any substances with a primary or a subsidiary risk of Division 6.1 or Class 8, so we also meet the condition for 49 CFR 173.121 (b)(1)(ii). The product is packaged in one-gallon cans with six cans to each package making the capacity of the packaging six gallons. This meets the conditions of 49 CFR 173.121 (b)(1)(iii). The final condition that must be met, 49 CFR 173.121 (b)(1)(iv), is a table comparing the viscosity of the material with the flash point. This is where we experience our problem.

As a measure of the viscosity of the material, 49 CFR 173.121 (b)(2)(i) references ISO-2431 be used. This test measures the flow time of the material. The flow time is measured by putting material in an ISO-cup and timing the flow through a 4mm or 6mm orifice. The flow time is measured by watching the stream out of the orifice and stopping when the stream breaks. In the case of our liquid adhesive product, the product flows through the orifice with a nice stream until the ISO-cup reaches a level of about 50% to 75% full upon which the material begins to drip out through the orifice. Because of the thixotropic properties exhibited by the adhesive product we cannot get an accurate measurement of the flow time to use for comparison on the table shown in 49 CFR 173.121 (b)(1)(iv). We can extrapolate our results based on the flow time that we measure and the amount of product still left in the ISO-cup. Extrapolation of our results yields flow times over 100 seconds through the 6mm orifice. This would then meet the conditions set forth in 49 CFR 173.121 (b)(1)(iv) and allow us to assign the adhesive product to Packing Group III.

ADCO Products, Inc.
4401 Page Avenue ♦ PO Box 457 ♦ Michigan Center, MI 49254 ♦ (517) 764-0334 ♦ (517) 764-6697 Fax

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On October 1, 2001, I spoke with Dr. Spencer Watson of the U.S. Department of Transportation Office of Hazardous Materials Technology about the problem that we are experiencing. His opinion was that we appear to be meeting the intent of the viscosity test and that our product is viscous enough to meet the conditions set in 49 CFR 173.121 (b)(1)(iv).

If you have any further questions or concerns, please contact me by phone at 517-841-7207 or by email at daniel.dixon@adcocorp.com. I look forward to your opinion.

Sincerely,

Daniel M. Dixon, Jr.

Daniel M. Dixon, Jr.
Health, Safety and Environmental Manager

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