



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

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

AUG 28 2002

Mr. David W. Olson
Senior Dangerous Goods Specialist
Applied Biosystems
850 Lincoln Centre Drive
Foster City, CA 94404

Ref. No. 02-0198

Dear Mr. Olson:

This responds to your July 26, 2002 letter requesting clarification on the proper shipping name assigned to your material under an approval dated April 5, 2001 for EX-0104016 for "Flammable liquid n.o.s. (1H-tetrazole solution in acetonitrile)." Specifically, you request clarification on why the proper shipping name assigned under the approval was selected instead of the proper shipping name "Acetonitrile solution."

According to your July 26, 2002 letter with enclosures and test data, you conclude that the more appropriate proper shipping name for your product is "Acetonitrile solution". You have concluded that 1H-tetrazole, when added to acetonitrile at a concentration of 3.1 percent, does not contribute to the hazard of your product, therefore, the proper shipping name is "Acetonitrile solution."

Based on the current approval issued on April 5, 2001 and your follow-up letter and data, the explosive properties of 1H-tetrazole solution in acetonitrile presents a hazard in transportation that must be identified for emergency response purposes. Therefore, it remains the opinion of this Office that the most appropriate shipping name for your product is "Flammable liquid, n.o.s.(1H-tetrazole solution in acetonitrile), not "Acetonitrile solution."

I hope this answers your inquiry.

Sincerely,

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



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Proper Shipping Name

02-0198

July 26, 2002

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

Re: Classification of Acetonitrile/1H-Tetrazole Activator Solution for transportation in commerce

Dear Mr. Mazullo:

Applied Biosystems is a global instrument manufacturer whose products are utilized in the study and synthesis of DNA as well as other life science projects. In support of these instruments, we also provide various chemical products – several of which we have classified as hazardous in transportation - to customers around the world. During a recent review of our hazardous materials, we discovered a classification of one of our products – Acetonitrile/1-H Tetrazole Activator Solution which is used as an activator in DNA synthesis - that we do not understand. Mr. George Cushmac in your Office of Hazardous Materials Technology suggested we write you a letter asking for clarification.

On April 2, 2001, a letter (see Enclosure 1) citing 49 CFR 173.56, was written on behalf of Applied Biosystems by HMT Associates, LLC, and sent to the Department of Transportation, Research and Special Programs Administration regarding the activator solution. In response, DOT issued a Classification of Explosives letter to Applied Biosystems dated April 5, 2001 (see Enclosure 2), assigning the proper shipping name of:

Flammable liquid, n.o.s. (1H-Tetrazole solution in Acetonitrile)

However, measurements of the explosive properties (UN Test Series 1) of Acetonitrile/1H-Tetrazole Activator Solution provided by New Mexico Tech, Energetic Materials Research and Testing Center (EMRTC) on March 8, 2001 (see Enclosure 3) clearly demonstrate that this material does not exhibit the characteristics of an explosive. Therefore, we do not understand why 49 CFR 173.56 would apply since this material does not meet the definition of a "new explosive" in 49 CFR 173.56 (a).

Furthermore, test data provided by Chilworth Technology on June 17, 2002 (see Enclosure 4) shows that the measured flash point of this material (5°C) is, within experimental error, the same as the published flash point of technically pure Acetonitrile (6°C). Therefore, 1-H Tetrazole does not contribute to the flammability of this product. This is further supported by data on 1-H Tetrazole submitted to the United Nations (see Enclosure 5) showing that this material is not a flammable solid and is stable to 75°C.

Based on the specific product test data and the provisions of 49 CFR 172.101(c)(12)(ii), therefore, we conclude that the more appropriate proper shipping name of this product is:

Acetonitrile Solution

Mr. Cushmac indicated that we should address the scenario where Acetonitrile might evaporate leaving pure, dry 1-H Tetrazole. These products are shipped in combination packaging designed and tested to meet the UN specifications for a Packaging Group II Flammable Liquid. Sufficient bunting and absorbent material is used to contain the entire contents of the inner package should its integrity be compromised during transport. In over 21 years of operations concerning the transporting of hazardous materials, Applied Biosystems has experienced no transportation related incidents with this item. In our opinion, it is unlikely that this scenario would be encountered under, "conditions normally incident to transportation" [49 CFR 173.24(b)].

In summary, we have concluded that 1H-Tetrazole, when added to Acetonitrile at our concentration of 3.1%, does not contribute to the hazard of this product and that the proper shipping name of this mixture should be *Acetonitrile Solution*. We would appreciate it if you would please confirm this conclusion or clarify why *Flammable liquid, n.o.s. (1H-Tetrazole solution in Acetonitrile)* is more appropriate.

Thank you for your consideration in this matter. Please do not hesitate to contact me if you need further information or explanation. Since this is a critical product, a timely response would be appreciated. Should it be deemed necessary by your offices, we would be willing to visit your office in Washington in order to facilitate this request.

Sincerely,



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Enclosures