



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

FEB 11 2004

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

Mr. Andrew N. Romach  
Corporate Regulatory Manager  
URS Corporation  
1600 Perimeter Park Drive  
Morrisville, NC 27560

Ref. No. 04-0161

Dear Mr. Romach:

This responds to your letter requesting our assistance in determining the correct shipping description for a metal powder, which meets the definition of a flammable solid, when suspended in a flammable liquid under the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180). You posed a scenario of a material, Aluminum powder coated, 4.1, UN1309, PG II, suspended in a flammable liquid (solvent) mixture that has a flash point of about 63°F (Class 3, PG II). It is your understanding that there are no proper shipping names listed in the § 172.101 Hazardous Materials Table (HMT) for these mixtures except for Zirconium suspended in a liquid, UN1308. I apologize for the delay in responding and any inconvenience it may have caused.

You are correct that no specific or generic description for your material currently exists in the HMT. In your scenario, provided the aluminum powder is compatible with the flammable liquid in your mixture and the overall mixture does not meet the definition of another hazard class, it is our opinion that it should be described as "Flammable liquids, n.o.s. (1-methoxy-2-propyl acetate, Xylene), 3, UN1993, PG II." We anticipate proposing generic descriptions in the HMT for scenarios such as yours in a future rulemaking.

I trust this satisfies your inquiry. Please contact us if we can be of further assistance.

Sincerely,

Hattie L. Mitchell  
Chief, Regulatory Review and Reinvention  
Office of Hazardous Materials Standards



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172.101



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July 6, 2004

Mr. Ed Mazzullo, Director  
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 Research and Special Programs Administration  
 U.S. Department of Transportation  
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Stevens  
 § 172.101  
 Proper Shipping Name  
 04-0161

Dear Mr. Mazzullo:

I am writing to you to request a written regulatory interpretation clarifying what would be the most appropriate proper shipping name to use when transporting a metal powder that meets the definition of a flammable solid, when it is suspended in a flammable liquid. In the Hazardous Material Table (49 CFR 173.101), I found a proper shipping name that addressed a specific metal powder, zirconium: Zirconium suspended in a liquid.<sup>1</sup> (Dry zirconium is classified as a 4.2; wetted zirconium is classified as a 4.1.) This proper shipping name lists a primary hazard class of Class 3 but lists no subsidiary hazards. Three packing groups are listed, dictated by the flashpoint of the flammable liquid. Taking this precedence into account, it would appear that the flammable liquid would become the primary and only conveyed hazard for a flammable solid suspended in a flammable liquid.

A specific scenario that I recently encountered is an aluminum flake (classified as Aluminum Powder Coated, 4.1, UN1309, PGII) suspended in a solvent mixture of xylene and 1-methoxy-2-propyl acetate, with overall solution flashpoint of about 63°F (Class 3, PGII):

Chemical Name	CAS No.	Weight %
1-Methoxy-2-propyl acetate	108-65-6	40-50%
Aluminum Powder	7429-90-5	50-60%
Xylene	1330-20-7	5-10%

I was unable to find a generic proper shipping name to describe this scenario, such as: Flammable solid, suspended in a flammable liquid, n.o.s.; or Metal powder, flammable, suspended in a flammable liquid, n.o.s.

What would be the appropriate proper shipping name for the above-described solution? If a generic proper shipping name is selected, what would be the appropriate technical names to list and in what order?

Thank you for your consideration of this request.

Sincerely,

Andrew N. Romach  
 Corporate Regulatory Manager  
 URS Corporation

<sup>1</sup> In the International Civil Aviation Organization's (ICAO) *Technical Instructions for the Safe Transport of Dangerous Goods by Air*, the comparable proper shipping name is: Zirconium suspended in a flammable liquid. In the ongoing move toward harmonization, it would seem the DOT should align its proper shipping name with ICAO.