



U.S. Department  
of Transportation

Pipeline and Hazardous  
Materials Safety  
Administration

1200 New Jersey Avenue, SE  
Washington, D.C. 20590

AUG 11 2014

Patricia Siefferman, Ph.D.  
Product Safety Specialist  
Atotech USA Inc.  
Americas Headquarters  
1750 Overview Drive  
Rock Hill, SC 29730

Ref. No. 14-0081

Dear Dr. Siefferman:

This responds to your April 2, 2014 request for clarification on the classification of corrosive and toxic materials under the Hazardous Materials Regulations (HMR; 49 CFR parts 171-180). Specifically, you seek clarification on the applicable classification of a chromium trioxide mixture with up to 50% chromium trioxide.

You indicate that testing of the material shows that it has an oral or dermal toxicity that meets the definition of a Division 6.1 (toxic) material specified in § 173.132. You state that conversations with PHMSA representatives affirmed that mixtures with a high chrome content may be classified as "Chromic acid solution, 8 (6.1), UN1755" or "Corrosive liquid, toxic, n.o.s., (chromium trioxide), 8 (6.1), UN 2922." You also indicate that you seek to harmonize with the European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR).

The HMR authorizes the proper shipping description of "UN 1755, Chromic acid solution, 8," not "UN 1755, Chromic acid solution, 8 (6.1)." In accordance with § 173.22, it is the shipper's responsibility to properly class and describe a hazardous material. This Office does not generally perform that function. However, you indicate that you seek to harmonize with the ADR. The listing in the 2013 edition of the ADR for "UN 1755, Chromic acid solution, 8, PGII" describes the material as aqueous solution, with not more than 30% chromic acid and does not include the subsidiary Division 6.1 risk. Therefore, provided your material meets the definitions for corrosive (see § 173.136) and toxic (see § 173.132) materials, it is our opinion that "UN2922, Corrosive liquid, toxic, n.o.s. (chromium trioxide), 8 (6.1), PGII", is the most appropriate description for your material and will not conflict with the ADR.

I hope this answers your inquiry. If you need additional assistance, please contact this office at 202-366-8553.

Sincerely,

Robert Benedict  
Chief, Standards Development Branch  
Standards and Rulemaking Division



**ATOTECH**

Boothe  
§ 172.101

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§ 172.402(a)(e)  
Labeling  
14-0081

April 2, 2014

Mr. Charles E. Betts  
Director, Standards and Rulemaking Division  
U.S. DOT/PHMSA (PHH-10)  
Office of Hazardous Materials Standards  
1200 New Jersey Ave, SE. East Building, 2<sup>nd</sup> Floor  
Washington, D.C. 20590

Dear Mr. Betts:

This is to request clarification of the provisions of Hazardous Materials Regulations (HMR; 49 CFR Part 172.402(a)(2)) as it may apply to mixtures containing a high percentage of chromium trioxide (as much as 50%). Specifically, we seek clarification for when and how the Toxic subsidiary hazard class 6.1 is to be used in classification.

The Hazardous Materials Table (§ 172.101) lists the proper shipping name Chromic Acid Solution, 8, UN1755 with no subsidiary hazard. However, during the course of DOT certification training, several trainers have recommended the use of Corrosive liquid, toxic, n.o.s. (chromium trioxide), 8(6.1), UN2922, PGII, stating that it more accurately conveys the hazardous characteristics of the product offered for transport. Additionally, some colleagues use the aforementioned § 172.402(a) to add Toxic subsidiary class 6.1 to the Chromic Acid Solution shipping name as the paragraph states the package should be labeled with subsidiary hazards according to the table in that paragraph. The table indicates Subsidiary Class 6.1 is to be added for all packing groups (I, II, and III), and it further notes that it is required for all modes of transport. From recent conversations with your office, it was affirmed that mixtures with high chrome content may be classified as Chromic Acid Solution, 8(6.1), UN1755 or UN2922, 8(6.1).

For the purpose of classifying and assigning packing groups to mixtures which possess oral or dermal toxicity hazards, we use DOT's formula at § 173.132(c)(3) to determine the acute LD<sub>50</sub> of mixtures. Using a chrome LD<sub>50</sub> oral rat of 50 mg/kg (Source: [IUCLID] International Uniform Chemical Information Database), and finding that our high chrome mixtures exceed DOT's toxic threshold of  $\leq 300$  mg/kg, we classified these products as UN2922, 8(6.1) or UN1755, 8(6.1).

However, our affiliates have interpreted the ADR (Agreement concerning International Carriage of Dangerous Goods by Road) to require UN1755, with no subsidiary class allowed. We seek to harmonize the labeling of our products if possible. Therefore, we seek an interpretation and clarification of the classification of chrome mixtures that exceed DOT's toxic threshold:

- Chromic acid solution, 8, UN1755, PGII
- Chromic acid solution, 8(6.1), UN1755, PGII
- Corrosive liquid, Toxic, n.o.s., (Chromium trioxide), 8(6.1), UN2922, PGII

Thank you in advance for your assistance.

Kindest Regards,

*Patricia Siefferman*

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