



U.S. Department
of Transportation

**Research and
Special Programs
Administration**

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

SEP 21 1999

Mr. Jimmy W. Boyd
President
International Carbon Black Association
Post Office Box 2831
Borger, TX 79008-2831

Ref. No: 99-0186

Dear Mr. Boyd:

This is in response to your letter of June 29, 1999, requesting clarification on the requirements for transporting carbon black under the Hazardous Materials Regulations (HMR; 49 CFR parts 171-180). You provided a Material Safety Data Sheet for carbon black and also provided test results which verify that the carbon black does not meet the Division 4.2 criteria of § 173.124. It is your determination that carbon black is not a hazardous material.

Based on the information and test results you provided, we agree that the carbon black identified in your letter does not meet any of the hazard class criteria of the HMR and is therefore not a regulated material.

I hope this information is helpful.

Sincerely,

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



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INTERNATIONAL CARBON BLACK ASSOCIATION

PLEASE REPLY TO:

Mr. Jimmy W. Boyd
Post Office Box 2831
Borger, TX 79008-2831
Tel. (806) 273-1454
Fax. (806) 273-1473

June 29, 1999

Edward T. Mazzullo, Director
Office of Hazardous Material Standards
U.S. DOT - RSPA DHM-10
400 Seventh Street SW
Washington, DC 20590-0001

Re: U.S. DOT Regulation of Carbon Black Transportation;

Dear Sir:

The International Carbon Black Association (ICBA) represents all United States, Canadian, and European Community manufacturers of carbon black. The ICBA consolidates expertise from industry and universities that have performed substantial scientific research concerning the safety, health effects, and protection of the environment as related to carbon black.

For the reasons set forth below, the ICBA requests that you supply an official letter interpretation clarifying that commercial carbon black is not properly included in the listing for "carbon, animal or vegetable origin" at 49 C.F.R. § 172.101 and, therefore, is not subject to the transportation restrictions listed thereunder.

The Hazardous Materials Regulations Misclassify Commercial Carbon Black

The Department of Transportation Hazardous Materials Transportation regulations at 49 C.F.R. § 172.101 contain a listing for "carbon, animal or vegetable origin," indicating a United Nations identification number of UN1361.¹ This entry leads to an error in the classification of commercial

¹ See Attachment A, p. 128 of the 1998 Edition of 49 C.F.R. Parts 100 - 185.

carbon black.² The reference specifies that the material is forbidden for transport on commercial aircraft. This specific type of carbon black comprises less than 1% of the total commercial carbon black production. The origin of this material is from charred animal bones, which is manufactured by one California facility in the U.S.

In contrast, commercial carbon black, classified as CAS #1333-86-4, has no assigned UN or NA number. Commercial carbon black is produced by thermal decomposition of heavy aromatic oil, natural gas, or acetylene (*i.e.*, it is of "mineral" origin), and produces a dry, fine particulate matter used primarily in the production of tires, manufactured rubber goods, inks, and toners.

Due to a lack of understanding, freight companies misclassify commercial carbon blacks using the above-referenced entry in the Dangerous Goods regulations. This misclassification has caused unwarranted refusal to accept freight, delays for our customers, and frustration for the manufacturers.

Commercial Carbon Black is Not a Spontaneously Combustible Material

The United States Department of Transportation Hazardous Materials regulations contain two references to carbon: "Carbon, activated", and "Carbon, animal or vegetable origin." 49 C.F.R. § 172.101. Both are listed with a hazard class of Division 4.2, or spontaneously combustible.

A spontaneously combustible material is one of two things: a pyrophoric material, or a self-heating material. A pyrophoric material is a material that, even in small quantities and without an external ignition source, can ignite within five minutes of coming in contact with air. A self-heating material is one that, when in contact with air and without an energy supply, is liable to self-heat. A material of this type which exhibits spontaneous ignition or exceeds 200 °C (392 °F) in a 24 hour test under the UN Manual of Tests and Criteria is classified as a Division 4.2 material. 49 C.F.R. § 173.124(b).

In contrast, most commercial carbon blacks are stable products, relatively neutral in pH, contain less than 1% volatile material, and have a minimum ignition temperature in excess of 600 °F. This information is found in Sections 9, 2, and 5, respectively, of the attached Material Safety Data Sheet (MSDS).³ Since most of these commercial grade carbon blacks are so stable, they do not constitute a potential danger to freight companies.

In addition, the ICBA sponsored specific testing on carbon black to measure certain flammability, explosivity, and other related properties. In sum, the testing determined that the Lower Limit for

² Indeed the International Air Transport Association ("IATA") Dangerous Goods regulations contain a corresponding entry of "carbon black, animal or vegetable origin." This entry in the IATA guidelines, which is based on the U.S. DOT and ICAO provisions, has been cited by carriers as the reason for refusing to transport commercial carbon black by air.

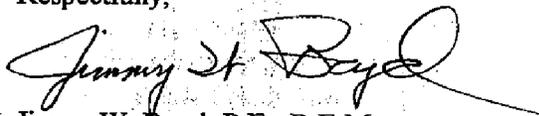
³ A current MSDS for carbon black is attached as Attachment B.

Explosion was approximately a 375 g/m³ concentration of carbon black when applying an energy source of 30 KJ, which is nearly 30 times the energy produced by a welding torch. In addition, the minimum autoignition temperature was found to exceed 800 °C. Other testing revealed that carbon black should not be classified as "Highly Flammable" or "Easily Ignitable" according to European Directive 84/449 and the German VDI Guideline 2263. As a result of the this testing, the ICBA submits that there is no basis to classify commercial carbon black as a U.S. DOT Division 4.2 material, and, therefore the restrictions on UN 1361 should not apply to commercial carbon black. Attachment C hereto documents some of the above information.

The ICBA requests that DOT clarify its Hazardous Materials regulations through an official letter interpretation to differentiate commercial carbon blacks from those that contain the UN1361 identification number. Alternatively, ICBA requests that commercial carbon black, CAS #1333-86-4, be delineated in a separate listing that indicates the appropriate transportation restrictions, if any. Providing a separate listing will reduce the current confusion freight companies experience when attempting to classify carbon black and being presented with only the listing for "carbon black, animal or vegetable origin," or UN 1361.

If you should have any questions about the information presented or would like to discuss these issues further, please do not hesitate to contact me at 806/273-1454.

Respectfully,



Jimmy W. Boyd, P.E., R.E.M.

President

International Carbon Black Association

Attachments

cc: I. Berry St. John, Jr.