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

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

OCT 12 2004

Mr. Gordon R. Crawley
Pacific Asphalt Services Company
10501 N. E. 38th Place
Kirkland, WA 98033

Ref. No. 04-0108

Dear Mr. Crawley:

This responds to your March 30, 2004 letter requesting clarification on shipping asphalt under the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180). Specifically, you ask for clarification on the proper shipping name and authorized packaging for use in the shipment of asphalt.

In your letter, you state that asphalt manufacturers ship asphalt with a flashpoint of 316° C that is loaded into portable tanks at a temperature greater than 100° C for transportation by vessel under the proper shipping description "Elevated temperature material, liquid, n.o.s., 9, NA/UN 3257, III, (Asphalt PG 58-28)."

Your questions are paraphrased and answered as follows:

Q1. What is the correct shipping name for this asphalt product or other grades of asphalt when transported by vessel?

A1. For asphalt with a flashpoint at or above 37.8° C offered for transportation or transported by vessel at or above its flashpoint, the shipping description for both domestic and international transportation is "Tars, liquid, 3, UN 1999, III." For domestic transportation, you may elect to use the shipping description "Asphalt, 3, NA 1999, III."

For asphalt offered for transportation or transported by vessel at or above 100° C and below its flashpoint, the shipping description for both domestic and international transportation is "Elevated temperature liquid, n.o.s., (Asphalt), 9, UN 3257, III."

Q2. May a company, individual, or marine carrier load or ship asphalt products in steel containers that are not equipped with pressure relief devices?

A2. A bulk packaging authorized or used for the transport of elevated temperature materials must conform to § 173.247(g) which indicates that pressure control equipment (pressure relief device) is not required if pressure in the packaging would increase less than 10 percent as a result of heating the lading from the lowest design operating temperature to a temperature likely to be encountered if the packaging were engulfed in a fire. However, when pressure control equipment

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173.247

is required (e.g., if the pressure in the packaging increases greater than 10 percent as a result of heating the lading from the lowest design operating temperature to a temperature likely to be encountered if the packaging were engulfed in a fire), it must prevent rupture of the packaging from heating, including fire engulfment.

I hope this answers your inquiry.

Sincerely,

John A. Gale
Chief, Standards Development
Office of Hazardous Materials Standards

PACIFIC ASPHALT SERVICES COMPANY

10501 N.E. 38th Place / Kirkland, WA 98033 / (425) 739-6964 / Fax (425) 576-5113

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§172.101
§173.247
Proper Shipping Name
04-0108

March 30, 2004

United States Coast Guard
Marine Safety Center
400 7th Street SW
Room 6302
NASSIF Building
Washington D.C. 20590-0001

Re: Request for Determination and Clarification.
Loading and Shipment of Asphalt in appropriate shipping containers.

Gentlemen:

Please accept this correspondence as our Request for Determination in regards to the proper loading and shipping of asphalt in portable containers to various locations that require travel in ships or barges on the Pacific Ocean. I would first like to offer what we believe to be the history of previous asphalt shipments.

History:

The first shipment of asphalt in bulk started prior to 1985. Prior to the use of ISO containers the most common method of shipment was steel containers of various sizes and shapes. These containers varied in volume from 5 tons to 13 tons, or about 1,250 gallons to 3,250 gallons. These containers had no pressure relief valves nor did they meet any other current standards. Per CFR 172.101 these containers are not recognized by the Department of Transportation as an approved method of transporting asphalt products either as UN1999 or UN3257.

The use of cargo containers were introduced to this region in 1985 by a local oil company. The containers used were IMO101 tanks built by Hyundai Corporation. They have the proper D.O.T. testing and documentation required for carrying Asphalt hot or cold. These containers were used from 1985 to 2002. At the same time, a few companies and one marine carrier still used and shipped the old non-pressure relief device steel containers.

PASCO is a corporation that was formed in 2003 to ship asphalt products once the local oil company determined that they no longer wished to own portable asphalt containers. PASCO purchased new containers that met all current CFR requirements, and also purchased the containers from the oil company.

PASCO repaired the containers from the oil company and had them inspected and certified by the Coast Guard to ship asphalt products. All portable containers used for shipping asphalt by PASCO are pressure vessels meeting the current CFR's, and the requirements of UN3257 and UN1999. PASCO owns enough containers to meet all the asphalt requirements in the geographic area that they operate.

PASCO was willing to spend the money for new containers and repair other containers to meet current CFR's when we realized that the marine carriers and asphalt container owners were given two years notice prior to 2003 of the impending changes. These marine carriers and container owners were given the opportunity to comment and request changes to the 2003 CFR's, but chose not to. It is our understanding that these changes to the CFR's were made to comply with the IMDG, UN, and DOT Harmonization requirements which went into effect January 1, 2003.

PASCO also owns approximately 300 non-pressure relief device steel containers that formerly were used to ship asphalt products. PASCO voluntarily is not utilizing these containers because in our opinion, they do not meet the current CFR's.

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PASCO's concern is that they have capitalized and set up a business plan to meet the new CFR requirements to ship asphalt, but there are some container owners and one marine carrier that are willing to ship the old steel containers with asphalt products, which do not have pressure relief valves and do not meet the CFR's. Our desire in this correspondence is to answer all questions in an affirmative manner which will then require the marine carrier to only ship asphalt containers that are certified pressure vessels meeting all CFR requirements. The marine carrier has stated that if it is determined that the old steel containers are no longer legal shipping containers for asphalt products; they will comply with the current regulations.

Questions for Determination:

The first question we have is in regards to the manifesting and labeling of the asphalt product in portable shipping containers.

a.) The oil manufacturer's material safety data sheet refers to the product by its Trade name Asphalt Cement and then the particular name such as PG58-28. It is then listed by its Generic Name, Asphalt. This is also true for other asphalt grades (e.g. PG 58-22, PG 52-28, PG 64-28, etc.). The DOT Shipping name is listed as Elevated Temperature Material, Liquid, N.O.S., 9, NA/UN3257, III (Asphalt PG 58-28). See Attachment 1 for a MSDS sheet for the asphalt product.

b.) We reference CFR172.101(c)(12)(ii), which requires us to start with the proper shipping name. Asphalt is the technical, generic and trade name used. Using the Hazardous Materials Table, CFR 172.101, we have two choices for this product. Asphalt at or above its flash point, and Asphalt, cutback. We are concerned with the second option because we are shipping asphalt at or below its flash point. This listing refers us to Tars, liquid, etc.

c.) Tars, liquids including road asphalt and oils, bitumen and cut backs. This material has a Hazard Class 3 rating, an identification number of UN1999 and packaging groups (II) and (III).

140.9°F

The asphalt manufacturers at this time are labeling the DOT shipping name as Elevated Temperature Material, Liquid, N.O.S., 9, NA/UN3257, III (Asphalt PG 58-28). The manufacturers state that they list the asphalt product on the Bill of Lading with this label because the definition of a Class 3 hazard material requires the flash point of the product to be less than 60.5 Centigrade. Since the flash point of this product is 316 Centigrade, and it is loaded into the containers at a temperature greater than 100 Centigrade, they feel that this is the proper shipping label, rather than "Asphalt". (See Attachment 2 for sample Bill of Lading) The marine carrier uses the asphalt manufacturers labeling as their argument for what type of containers are required for shipping.

600°F

212°F

Question 1: What is the correct shipping name for this asphalt product or other grades of asphalt <u>over the water?</u>

If the correct shipping name per the CFR's is Asphalt - Tars, Liquids, etc. we have no more questions. In our opinion it is very straight forward with this labeling of the product that the correct loading and shipping regulations require the product to be in a pressure vessel meeting the requirements shown in Table 172.101.

The remaining questions are based upon a determination that states that the correct shipping name for the asphalt product is Elevated Temperature Material, Liquid, N.O.S., 9, NA/UN3257. PASCO recognizes that this shipping name is still a hazardous material.

Since this product can only be loaded into a container at an elevated temperature, CFR 173.32 states that; "A hazardous material may not be loaded in a DOT Specification 51, DOT Specification 60, an IM or UN portable tank unless the portable tank has a pressure relief device that provides total relieving capacity meeting the requirements of this subchapter".

Question 2: Since the steel containers have no pressure relief devices, can a company, individual, or marine carrier load or ship these non-pressure relief containers with asphalt products?

The asphalt products over time, once loaded into the portable container will cool down to below the elevated temperature of 100 Centigrade. Once the product has been shipped, it requires the owner of the container to heat the product above the elevated temperature to get the asphalt product out of the portable container.

Table 172.101 Hazardous Materials, Elevated Temperature Liquid N.O.S., states that the bulk packaging must comply with CFR 173.247. This regulation states in part, "Pressure control equipment is not required if pressure in the packaging would increase less than 10 percent as a result of heating the lading from the lowest design operating temperature to a temperature likely to be encountered if the packaging were engulfed in

a fire. When pressure control equipment is required, it must prevent rupture of the packaging from heating, including fire engulfment".

It is a well known fact by users of asphalt products that during the heating of the product in portable containers, pressure will increase by more than 10% in the container. That is why the container lids are opened during the heating process to relieve pressure.

An argument by the marine carrier, is once the asphalt product falls below its elevated temperature in the container, it is no longer a hazardous material, therefore they do not have to comply with the CFR's as regards to shipping or receiving the asphalt product in the non-pressure relief device steel containers.

PASCO contends that (1) the asphalt products must be loaded at an elevated temperature into a vessel with a pressure relief device, (2) unloading the asphalt product requires the same type of vessel, and (3) if by chance the portable container was engulfed in a fire during transportation, the vessel would have to be able to relieve the pressure. Therefore, you must use a pressure relief device vessel to load, ship, and unload asphalt products.

Question 3: Even though this asphalt product may fall below its elevated temperature at some point during transportation, must you use a pressure relief device vessel for shipping this asphalt product over the water?

There is an even more obscure argument made by a marine carrier. They state that if you loaded the non-pressure relief device steel containers at a different location than the marine carriers address, and let them set for a period of time, (e.g. 7 days, two weeks, etc.), that these containers would not be considered portable containers for transportation because they set and cooled for a period of time. This would then allow the owner of the containers to ship asphalt products at a later date utilizing a different bill of lading label without complying with any CFR requirements for hazardous materials.

Question 4: Can the above argument be used as a justification to not comply with the current CFR's?

We request affirmative answers to our questions so that we may operate on a level playing field, in a safe manner that requires all individuals and companies to work within the current CFR's.

Thank you for your attention to our questions.

Sincerely,

Gordon R. Crawley
President

Enclosures