U.S. Department
of Transportation

**Pipeline and
Hazardous Materials Safety
Administration**

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

OCT 12 2006

Mr. E.A. Altemos
HMT Associates, L.L.C.
603 King St., Suite 300
Alexandria, VA 22314-3105

Ref. No. 06-0180

Dear Mr. Altemos:

This is in response to your August 1, 2006 letter regarding the proper classification, description, and associated transportation requirements for materials under the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180). Specifically, you state your product, solid carbon dioxide, contains an ozone concentration which is above the typical naturally-occurring concentrations and has been added to your product during the manufacturing process. You ask whether, because the ozone concentration in your material does not meet the definition of a Division 2.3 gas, the proper shipping name, "Carbon dioxide, solid *or* Dry ice" (UN 1845) is the proper classification and description of your material.

Section 173.22 of the HMR requires a shipper to properly class and describe the hazardous material in accordance with Parts 172 and 173 of the HMR, and to determine that the packaging or container is an authorized packaging in accordance with Part 173. This Office does not perform that function. However, if you determine that the ozone concentration does not meet the definition of any hazard class or division in the HMR, including Division 2.3, and is not a hazardous substance or hazardous waste, "Carbon dioxide, solid *or* Dry ice" (UN 1845) would be the proper classification and description of your material.

I hope this information is helpful.

Sincerely,

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

060180

173.22
173.115

Foster
§173.22
§173.115
Shipper's Responsibility
Definition
06-0180

HMT ASSOCIATES, L.L.C.

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E.A. ALTEMOS
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WRITER'S DIRECT DIAL NUMBER
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August 1, 2006

Dr. Charles Ke
Sciences Branch (PHH-21)
Office of Hazardous Materials
Technology
Pipeline and Hazardous Materials
Safety Administration
Department of Transportation
Washington, DC 20590-0001

Dear Dr. Ke:

This is to request your confirmation of the proper classification, description, and associated transport requirements applicable under the Hazardous Materials Regulations ("the HMR", 49 CFR Parts 171-180) to solid carbon dioxide which contains a concentration of ozone that is above the typical naturally occurring concentration.

The material concerned is solid carbon dioxide ("dry ice") which may be in pellet, block, or other solid form, and which contains a generally uniform distribution of ozone which has been added to the material during the manufacturing process. The approximate concentration of ozone in the material is 20 ppm (by weight). As you know, gaseous ozone would meet the criteria for classification in Division 2.3, and would exhibit other hazardous characteristics (i.e., strong oxidizing properties). However, owing to the relatively low concentration of the ozone in the material, the gas evolved as the material sublimes does not meet the criteria for classification in Division 2.3, does not exhibit the characteristics of an oxidizing gas for purposes of transport classification, and poses essentially the same hazard in transportation as does the carbon dioxide that is evolved by the sublimation of "normal" dry ice.

Based on the foregoing, it is my conclusion that the dry ice/ozone mixture described above poses a hazard in transportation essentially no different from that of "normal" dry ice. Consequently,

I believe this material can be properly described as "**Carbon dioxide, solid** *or* **Dry ice**" (UN 1845), classified in Class 9, and transported under the requirements and exceptions in the HMR as applicable to a material so described. Your confirmation of this conclusion is requested.

Should you disagree with this conclusion, your guidance is requested as to the proper classification and description of the material for transportation. As offered for transportation, neither the material itself nor the gas evolved from it would meet the criteria for classification in any hazard class. With regard to Class 9, as you know there are no quantitative criteria for classification in this "miscellaneous" hazard class. While this material may nevertheless be considered a candidate for classification in Class 9 under the qualitative criteria in § 173.140(b) and description as an "**Aviation regulated solid, n.o.s.**" (UN 3335), this is considered inappropriate for this material for two reasons. Firstly, unlike use of the "Dry ice" description, use of this proper shipping name would result in the material being considered regulated in air transportation but not for transportation by vessel. In addition, the packaging required for aviation regulated solids (§ 173.204) - unlike the packagings prescribed for dry ice (§ 173.217) - does not provide for the necessary release of the sublimed gas from the packaging in order to prevent rupture or failure of the packaging during transport. For these reasons, if this material is not classified in Class 9 and described as "**Carbon dioxide, solid** *or* **Dry ice**" (UN 1845), it is entirely unclear how it should be classified and described under the HMR in that there is no other available classification and description that will ensure application of the appropriate conditions, limitations, and packaging requirements on its transport.

In closing, please do not hesitate to contact me if you have questions or need additional information concerning this matter. Thank you for your consideration of this request, and I look forward to your response at your earliest opportunity.

Sincerely,

E. A. Altemos

cc: Mr. Ed Mazzullo (PHH-10)