U.S. Department
of Transportation

**Pipeline and
Hazardous Materials Safety
Administration**

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

SEP 15 2006

Mr. Peter Olsen
Transportation Systems Solutions
318 Hampshire Lane
Crystal Lake, Illinois 60014

Ref. No. 06-0155

Dear Mr. Olsen:

This is in response to your June 27, 2006 letter requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 100-180) applicable to testing criteria for Hazard Division 5.1 Oxidizers. Your questions are paraphrased and addressed as follows:

Q1. Is a material that does not meet the definition of an "Oxidizer" as specified under § 173.127 of the HMR when it is transported in a solid tablet form required by the United Nations (UN) Manual for Test and Criteria to be ground to a powder form to conduct the oxidizer test?

A1. As specified in § 173.127 of the HMR, a solid material is classed as a Division 5.1 material (Oxidizer) if, when tested in accordance with the UN Manual of Tests and Criteria, its mean burning time is less than or equal to the burning time of a 3:7 potassium bromate/cellulose mixture. The UN Manual of Tests and Criteria specifies that tests are conducted on the substance to be evaluated mixed with dry fibrous cellulose in mixing ratios of 1:1 and 4:1, by mass, of sample to cellulose. The UN Manual of Tests and Criteria also specifies that a substance, in the form in which it will be transported, should be inspected for any particles less than 500 μm in diameter. If that powder constitutes more than 10% (mass) of the total, or if the substance is friable, then the whole of the test sample should be ground to a powder before testing to allow for a reduction in particle size during handling and transport. In addition, the UN Manual for Tests and Criteria specifies that, as the particle size has a significant effect on the result of the test performed to determine the potential for a solid substance to increase the burning rate or burning intensity of a combustible material, the particle size of the substance should be stated in the test report.

Q2. If the material that has been ground to a powder form meets the definition of an "Oxidizer," does the UN Manual for Tests and Criteria allow for a specific percentage of the powder to be generated from the tablet form?

A2. See response above.

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173.127

Q3. Is there a grain size limit for the powder of the above material generated before the tablets would be considered an "Oxidizer" under § 173.127?

A3. See response above.

I trust this satisfies your inquiry.

Sincerely,

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

Foster
§173.127(a)(1)
Definition
06-0154
-0155

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Office of Hazardous Materials Safety
400 7th St S.W
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Dear Sir/Madam,

Transportation Systems Solutions (TSS) respectfully seeks an interpretation as to the testing criteria for a solid oxidizer, as defined in 49 CFR 173.127(a)(1). If the solid oxidizer in question is in a solid tablet form for transportation purposes and when in this solid tablet form it does not meet the definition of an oxidizer as defined in 49 CFR 172.127 is it required that this tablet be ground to a powder form to conduct the oxidizer test? Given that if the solid tablet is ground to a powder that it does meet the definition for an oxidizer TSS respectfully asks does the UN Manual for Test and Criteria allow for a certain percentage of powder to be generated from the solid tablets during transport and is there a grain size limit for the powder generated before the tablets would have to be considered an oxidizer by definition?

The solid tablets in question, that do not meet the definition of an oxidizer, are packaged in an impervious plastic liner in a strong outer packaging such that any powder generated during transport would not be released.

I thank you for your assistance in this matter and look forward to your response.

Yours Truly,

Peter Olsen
TSS