



U.S. Department
of Transportation

**Pipeline and
Hazardous Materials Safety
Administration**

MAY 12 2005

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

Mr. William Deneuté
Space Gateway Support, LLC
P.O. Box 21237
Kennedy Space Center, FL 32815

Ref No.: 05-0053

Dear Mr. Deneuté:

This responds to your February 23, 2005 letter requesting clarification of the weight percent threshold for classification of mixtures of nitric oxide and dinitrogen tetroxide under the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180). You state that a threshold of 11% nitric oxide in a mixture with dinitrogen tetroxide appears to be the point where the characteristics of the mixture diverge from that of pure "Dinitrogen tetroxide, UN1067." You request that 11% be the threshold level where a mixture of nitric oxide and dinitrogen tetroxide is classified as "Nitric oxide and dinitrogen tetroxide mixtures, UN1975" rather than "Dinitrogen tetroxide, UN1067."

In accordance with § 173.22, it is the shipper's responsibility to determine the shipping description for the material being transported. When selecting a proper shipping name, the shipper must select the name that most appropriately describes the material (see § 173.101(c)(12)). For a mixture of nitric oxide and dinitrogen tetroxide that meets the definition of a Division 2.3 material that is poisonous by inhalation in Hazard Zone A and exhibits oxidizer and corrosive subsidiary hazards, it is the opinion of this Office that, notwithstanding the percentage of nitric oxide in the mixture, the most appropriate shipping description is "Nitric oxide and dinitrogen tetroxide mixtures, 2.3 (5.1, 8), UN 1975." The proper shipping name "Dinitrogen tetroxide" may be used only for pure dinitrogen tetroxide that meets the definition of a Division 2.3 material that is poisonous by inhalation in Hazard Zone A and exhibits oxidizer and corrosive subsidiary hazards.

I hope this information is helpful. Please contact us if you require additional assistance.

Sincerely,

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



050053

191.1
173.22



Supko
3171.1
Exemption
05-0053

Space Gateway Support, LLC
P.O. Box 21237
Kennedy Space Center, FL 32815-0237

DATE: February 23, 2005 230-05-036
TO: Edward T. Mazullo, Director
Office of Hazardous Materials Standards
US DOT / RSPA (DHM-10)
400 7th Street SW.
Washginton, D.C. 20590-0001
SUBJECT: **REQUEST FOR WRITTEN INTERPRETATION REGARDING THE WEIGHT PERCENT THRESHOLD FOR CLASSIFYING NITRIC OXIDE AND DINITROGEN TETROXIDE MIXTURES WITH THE UN1975 IDENTIFIER – 49 CFR 172-101.**

Dear Mr. Mazullo,

Currently, NASA – KSC transports MON-1 and MON-3 (Mixed Oxides of Nitrogen and Dinitrogen Tetroxide) under exemptions DOT-E 10887 and 11383 (as grantee) under the UN ID 1067 (DiNitrogen Tetroxide.) NASA is also a party to exemptions DOT-E 03121 and 11580 and will forward this interpretation to the grantees (DOD and Columbiana Boilers.)

Our concern is that the weight percent of NO is so low (1% and 3% respectively) that the mixtures exhibit the same characteristics as the pure Dinitrogen Tetroxide. There are occasions where MON-10 is transported under some of the above exemptions also. This mixture does exhibit a higher vapor pressure so the UN 1975 designation may be prudent there but we believe the vapor pressure really diverges above 11% NO by weight. If there is no set weight percent which the OHM has identified, we would like to submit 11% (MON-11) as a threshold level as that is the point where the characteristics appear to diverge from NTO. We would concede that a conservative level would be 7% NO by weight which is the point where the vapor pressures shows a 50% increase above atmospheric pressure.

Currently there is a modification request in by NASA for adding UN 1975 to DOT-E 11383 as an additional Division 2.3 material in non-DOT specification Steel cylinders (FR Vol. 70, No. 13, 1/21/05 – 11383-M.) If the conservative weight percent of NO (7%) is accepted as a limit for UN 1975, we would respectfully request the modification be cancelled as MON-10 is not transported under that exemption.

Sincerely,

William C. Deneuté, 2/23/05

William Deneuté

Space Gateway Support, LLC

Attachments

Vapor Pressure Calculations & interpolation chart

Cc:

Chuck Davis, TA-E3; Kyrn Craig, UPC-272

Dwayne Breaux, SGS-127; Hemant Solanky, SGS-127