



U.S. Department
of Transportation

Pipeline and Hazardous
Materials Safety
Administration

1200 New Jersey Avenue, SE
Washington, D.C. 20590

MAR 29 2016

Mr. Edwin Van Schoick
18213 Bittern Avenue
Lutz, FL 33558

Reference No. 15-0136

Dear Mr. Van Schoick:

This is in response to your recent letter requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to transporting five Division 2.3 (poisonous) gases and one Division 2.2 (non-flammable) gas, all with subsidiary hazards. We have listed the gases you described in the table below. Specifically, you ask if these gases are segregated in the manner prescribed in § 177.848(e)(6) may they be transported on the same vehicle. We have paraphrased your questions and answered them in the order you provided.

No.	ID No.	Hazardous Material	Primary Hazard	Subsidiary Hazard	Hazard Zone
1	UN 2188	Arsine	2.3	2.1	A
2	UN 2199	Phosphine	2.3	2.1	A
3	UN 1953	Compressed gas, toxic, flammable, n.o.s.	2.3	2.1	C
4	UN 2418	Sulfur tetrafluoride	2.3	8	A
5	UN 2190	Oxygen difluoride, compressed	2.3	5.1, 8	A
6	UN 1070	Nitrous oxide	2.2	5.1	None

- Q1. Do my Division 2.3 hazardous materials that have a Class 8 (corrosive) subsidiary hazard need to be segregated from other Division 2.3 hazardous materials when the Class 8 material is not in a liquid state since the segregation table in § 177.848 requires that Division 2.3 materials must be segregated from "8 liquids only"?
- A1. The answer is no. Division 2.3 hazardous materials with a Class 8 subsidiary hazard are not subject to the segregation requirements prescribed in § 177.848 for transportation in commerce by motor vehicle when no corrosive liquid is present. In addition, § 177.848(e)(6) waives the segregation requirements for subsidiary "secondary" hazards in hazardous materials with the same primary hazard class provided these materials will not react dangerously with each other.
- Q2. By segregating in a motor vehicle the materials meeting the Division 2.1 (flammable gas) subsidiary hazard class from the materials meeting the Division 5.1 (oxidizer) subsidiary hazard class, in my opinion a dangerous reaction between them would be eliminated by virtue of the fact that if there were simultaneous leaking containers of

these materials, both gases would be sufficiently diluted in concentration by the air in the transport vehicle. The hazard of a dangerous reaction is posed by the air in the transport vehicle in the event of a leaking Division 2.1 subsidiary hazard material. Can these materials be transported on the same transport vehicle if properly segregated?

- A2. The segregation requirements in § 177.848(d) and (e) permit Division 2.1 materials to be placed in the same motor vehicle with Division 5.1 materials, but prohibit Division 2.3, Zone A, materials from being placed in the same motor vehicle with Division 5.1 materials. However, § 177.848(e)(6) provides segregation relief by permitting materials with the same primary hazard regardless of their subsidiary hazards to be placed on the same motor vehicle provided they are not capable of reacting dangerously with each other and causing combustion or dangerous evolution of heat, evolution of flammable, poisonous, or asphyxiant gases, or formation of corrosive or unstable materials.

I hope this satisfies your request.

Sincerely,

A handwritten signature in cursive script that reads "T. Glenn Foster". The signature is written in black ink and is positioned above the typed name.

T. Glenn Foster
Chief, Regulatory Review and Reinvention Branch
Standards and Rulemaking Division

Edmonson
§ 177.848(e)(6)
Segregation
15-0136

June 24, 2015

U.S. DOT
PHMSA Office of Hazardous Materials Standards
Attn: PHH-10
East Building
1200 New Jersey Ave., SE.
Washington, DC 20590-0001

Request for interpretation of 49CFR177.848(e)(6):

Can the following hazardous materials be transported on the same transport vehicle:

Hazardous Material	ID No.	Primary Hazard	Zone	Subsidiary Hazard
Arsine	UN2188	2.3	A	2.1
Phosphine	UN2199	2.3	A	2.1
Compressed gas, toxic, flammable, n.o.s., IHZ C	UN1953	2.3	C	2.1
Sulfur tetrafluoride	UN2418	2.3	A	8
Oxygen difluoride, Compressed	UN2190	2.3	A	5.1/8
Nitrous oxide	UN1070	2.2	none	5.1

Since all of the above materials are gases in hazard class 2, then if they meet the standard in 49CFR177.848(e)(6) they would be able to be transported on the same transport vehicle.

Questions:

1. Given that neither of the materials with a subsidiary hazard of class 8 are liquids, is it necessary that they be segregated?
2. By segregating the materials with the division 2.1 subsidiary hazard from the materials with the division 5.1 subsidiary hazard a dangerous reaction between them is eliminated by virtue of the fact that if there were simultaneous leaking containers of these materials, both of them would be diluted in concentration by the air in the transport vehicle. The hazard of a dangerous reaction is posed by the air in the transport vehicle in the event of a leaking division 2.1 subsidiary hazard material.
Can these materials be transported on the same transport vehicle if properly segregated?

Thank you for your guidance in this matter.

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Lutz, FL 33558 (713)817-8033 daytime phone no.