

Material Safety Data Sheet

Product: XM-103-T PETN Simulant

Date of Preparation: 6/22/01

Section 1 - Chemical Product and Company Identification

Product/Chemical Name: Simulant for Pentaerythritol tetranitrate (PETN)

Chemical Formula: for PETN $C_5H_5N_5O_6$,

CAS Number:

Other Designations: Fused Silica with Pentaerythritol tetranitrate

General Use: To have the vapor signature of an explosive, but will not explode.

Manufactured for: XM division of Van Aken International, 9157 Rochester Court, Rancho Cucamonga, CA 91730,
TEL (909) 980-2001, FAX (909) 980-2333 (hours 8:00am till 4:30pm of operation), emergency TEL (909) 260-2561.

☆☆☆☆☆ Emergency Overview ☆☆☆☆☆

Section 2 - Composition / Information on Ingredients

Ingredient Name	CAS Number	% wt
Silica, fused	60676-86	>96%
Pentaerythritol tetranitrate	78115	<4%

Trace Impurities: None

Ingredient	OSHA PEL		ACGIH TLV		NIOSH REL		NIOSH IDLH
	TWA	STEL	TWA	STEL	TWA	STEL	
Silica	80mg/m ³	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.
PETN	1500mg/m ³ (SKIN)	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.

Toxicity Data: Exposure Limits 0.1 mg/m³ (resp), 1.5 mg/m³ (skin), 500 mg/24H MLD(skn-rbt), 500 mg/ 1H MLD (eye-rbt)

Section 3 - Physical and Chemical Properties

Physical State: granular solid

Appearance and Odor: light brown to white

Odor Threshold: None

Density: 2.2 gm/cc

Specific Gravity (H₂O=1, at 4 °C):1.03

pH:

Water Solubility: 0.006

Other Solubilities:

Melting Point: 138°C for PETN

Section 4 - Fire-Fighting Measures

Flash Point: none

Burning Rate:

Autoignition Temperature: none

LEL: N/A

UEL: N/A

Flammability Classification: 94 V-1

Extinguishing Media: Water Spray, carbon dioxide or dry chemical

Unusual Fire or Explosion Hazards: none

Hazardous Combustion Products: CO, CO₂, NO

Fire-Fighting Instructions: Do not release runoff from fire control methods to sewers or waterways.

Fire-Fighting Equipment: Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full face piece operated in pressure-demand or positive-pressure mode.

Section 5 - Stability and Reactivity

Stability: Product is stable at room temperature in closed containers under normal storage and handling conditions.

Polymerization: Hazardous polymerization cannot occur.

Chemical Incompatibilities: none known

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Conditions to Avoid: none known

Hazardous Decomposition Products: none

Section 6 - Health Hazard Information

Potential Health Effects

Primary Entry Routes: Inhalation, skin contact and absorption

Target Organs: eyes, skin, lungs, nervous system, bone marrow

Acute Effects

Inhalation: Respiratory tract irritation, convulsions, and unconsciousness

Eye: irritation

Skin: irritation

Ingestion: Headache, fall in blood pressure, methemoglobinemia

Carcinogenicity: IARC, NTP, and OSHA do not list product or chemical as a carcinogen.

Medical Conditions Aggravated by Long-Term Exposure: Vasodilation, methemoglobinemia, diseases of the cardiovascular system

Chronic Effects: contact dermatitis

Emergency and First Aid Procedures

Inhalation: Remove affected person to well ventilated area.

Eye Contact: Wash with water.

Skin Contact: Wash with soap and water.

Ingestion: Induce vomiting.

After first aid, get appropriate in-plant, paramedic, or community medical support.

Note to Physicians: PETN is vasodilator like other nitrate esters

Special Precautions/Procedures:

Section 7 - Spill, Leak, and Disposal Procedures

Spill /Leak Procedures: Dispose of material as a non-explosive waste.

Small Spills: Same

Large Spills: Same

Containment: For large spills, dike far ahead of liquid spill for later disposal. Do not release into sewers or waterways.

Cleanup: Do not use acetone, use water as necessary.

Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910.120).

Disposal: Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable Federal, state, and local regulations.

Disposal Regulatory Requirements: As an inert material.

Container Cleaning and Disposal: Use water.

Ecological Information: None

EPA Regulations:

RCRA Hazardous Waste Number: Not listed (40 CFR 261.33)

RCRA Hazardous Waste Classification (40 CFR 261.): Not classified

CERCLA Hazardous Substance (40 CFR 302.4) unlisted specific per RCRA, Sec. 3001; CWA, Sec. 311 (b)(4); CWA, Sec. 307(a), CAA, Sec. 112

CERCLA Reportable Quantity: none known

SARA 311/312 Codes: none known

SARA Toxic Chemical (40 CFR 372.65): Not listed

SARA EHS (Extremely Hazardous Substance) (40 CFR 355): Not listed.

OSHA Regulations:

Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-1-A): Not listed

OSHA Specifically Regulated Substance (29CFR 1910.109)

State Regulations: Same

Section 8 - Exposure Controls / Personal Protection

Engineering Controls: Handle as an inert material.

Ventilation: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs (Sec. 8.2). Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.

Administrative Controls: Maintain in approved storage area.

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Respiratory Protection: Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA/NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. For emergency or nonroutine operations (cleaning spills, reactor vessels, or storage tanks), wear an SCBA.

Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres. If respirators are used, OSHA requires a written respiratory protection program that includes at least: medical certification, training, fit-testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.

Protective Clothing/Equipment: Wear chemically protective gloves, boots, aprons, and gauntlets to prevent prolonged or repeated skin contact. Wear protective eyeglasses or chemical safety goggles, per OSHA eye- and face-protection regulations (29 CFR 1910.133). Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with contact lenses. Handle behind a barrier.

Safety Stations: Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

Contaminated Equipment: Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment.

Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

Section 9 - Special Precautions and Comments

Handling Precautions: none

Storage Requirements: none

DOT Transportation Data (49 CFR 172.101):

Shipping Name: Simulant, not an explosive

Shipping Symbols: none

Hazard Class: not applicable

ID No.:

Packing Group:

Label:

Special Provisions:

Packaging Authorizations

a) Exceptions:

b) Non-bulk Packaging:

c) Bulk Packaging: N/A

Quantity Limitations

a) Passenger, Aircraft, or Railcar:

b) Cargo Aircraft Only:

Vessel Stowage Requirements

a) Vessel Stowage:

b) Other:

Prepared By: B. MacDonald

Revision Notes: RVA 1/29/08

Disclaimer: