

Material Safety Data Sheet

Product: TNT Simulant XM-601-Q (formerly XM-501-Q)

Date of Preparation: 5/28/03

Section 1 - Chemical Product and Company Identification

Product/Chemical Name: Simulant for Trinitrotoluene (TNT), XM-601-Q (formerly XM-501-Q)

Chemical Formula: for TNT $C_7H_5N_3O_6$

CAS Number:

Other Designations: Trinitrotoluene with water and Aerosil 200

General Use: For calibration and testing of explosive detection systems.

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) 374-0686.

☆☆☆☆☆ Emergency Overview ☆☆☆☆☆

Section 2 - Composition / Information on Ingredients

Ingredient Name	CAS Number	% wt
water	7732185	34%
2,4,6-Trinitrotoluene	118-96-7	63%
Silicon Dioxide	112945-52-5	3%

Trace Impurities: None

Ingredient	OSHA PEL		ACGIH TLV		NIOSH REL		NIOSH IDLH
	TWA	STEL	TWA	STEL	TWA	STEL	
Silicon Dioxide	6mg/m ³	none estab.	10 mg/m ³	none estab.	none estab.	none estab.	none estab.
TNT	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)

Section 3 - Physical and Chemical Properties

Physical State: granular paste

Water Solubility: 0.5%

Appearance and Odor: light brown to white, no odor

Other Solubilities:

Odor Threshold: None

Freezing/Melting Point: 240° for TNT

Density: 1.6 gm/cc

Specific Gravity (H₂O=1, at 4 °C): 1.1

pH:

Section 4 - Fire-Fighting Measures

Flash Point: N/A

Burning Rate:

Autoignition Temperature: none

LEL: N/A

UEL: N/A

Flammability Classification: 94-V1

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 facepiece 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

Conditions to Avoid: high temperature, and shock impact

Hazardous Decomposition Products: none

Section 6 - Health Hazard Information

Potential Health Effects

Primary Entry Routes: Inhalation

Target Organs: Lungs

Acute Effects

Inhalation: High intraperitoneal, intratracheal, intravenous. Cause pulmonary dust disease.

Eye: none

Skin: none

Ingestion: same as above

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

Medical Conditions Aggravated by Long-Term Exposure: silicosis

Chronic Effects: Same

Emergency and First Aid Procedures

Inhalation: Remove affected person to well ventilated area.

Eye Contact: Wash with water.

Skin Contact: Wash with water.

Ingestion: Induce vomiting.

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

Note to Physicians:

Special Precautions/Procedures:

Section 7 - Spill, Leak, and Disposal Procedures

Spill /Leak Procedures: Dispose of powder 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. Collect material in 50 micro meter mesh filter

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.

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: Store away from heat and open flame. Quantity limits of designated areas should be followed.

DOT Transportation Data (49 CFR 172.101):

Shipping Name: Simulant, not an explosive

Shipping Symbols: none

Hazard Class: 4.1

ID No.: UN1356

Packing Group: 1

Label: 4.1

Special Provisions:

Packaging Authorizations

a) **Exceptions:**

b) **Non-bulk Packaging:** 211

c) **Bulk Packaging:** N/A

Quantity Limitations

a) **Passenger, Aircraft, or Railcar:** do not ship by air

b) **Cargo Aircraft Only:** do not ship by air

Vessel Stowage Requirements

a) **Vessel Stowage:** none

b) **Other:**

Prepared By: B. MacDonald

Revision Notes:

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