

# Material Safety Data Sheet

## ANFO X-RAY SIMULANT - XM-11-X

9/11/02

MSDS

### Section 1 – Chemical Product and Company Identification

**Product/Chemical Name:** XM-11-X ANFO - Commercial Explosive Simulant

**Chemical Formula:** Mixture

**CAS Number:** Mixture

**Other Designations:** Item # 20149

**General Use:** To have the X-ray signature of an explosive, but will not explode or rapid burn.

**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
Tartaric Acid	87-69-4	37.4
	526-83-0	
Ethene-Hexene_copolymer	25213-02-9	26.7
Graphite	7782-42-5	30.1
Aluminum	7429-90-5	5.8

  

Ingredient	OSHA PEL		ACGIH TLV		NIOSH REL		NIOSH IDLH
	TWA	STEL	TWA	STEL	TWA	STEL	
Tartaric Acid	None estab	None estab.	None estab.	None estab.	None estab	None estab	None estab.
Graphite	None estab	None estab.	2.0 mg/m <sup>3</sup>	None estab.	None estab	None estab	None estab
Aluminum	15 mg/m3	None estab	10, 5 mg/m3	None estab.	None estab	None estab	None estab.
1-Hexene, polymer with ethene	None estab	None estab.	None estab.	None estab.	None estab	None estab	None estab.

### Section 3 – Physical and Chemical Properties

**Physical State:** granular solid

**Appearance and Odor:** gray

**Odor Threshold:** None

**Density:** .89 g/cc

**Specific Gravity:** n/a

**Ph:** not applicable

**Water Solubility:** nil

**Other Solubilities:**

**Melting Point:** 169 degrees C Tartaric Acid

**Evaporation Rate:**

**Vapor Pressure (mm Hg at 20<sup>0</sup>c):** n/a

### Section 4 – Fire-Fighting Measures

**Flash Point:** N/A

**Burning Rate:**

**Autoignition Temperature:** 797 degrees F Tartaric Acid

**LEL:** N/A

**UEL:** N/A

**Flammability Classification:** Non-Flammable

**Extinguishing Media:** Water spray, carbon dioxide or dry chemical

**Unusual Fire or Explosion Hazards:** none

**Hazardous Combustion Products:** Carbon monoxide, olefinic and parafinic compounds, trace amounts of organic acids, ketones. Aldehydes and alcohols may be formed.

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

**Fire-Fighting Equipment:** Wear an approved positive pressure self-contained breathing apparatus and firefighter turnout gear.

## Section 5 – Stability and Reactivity

**Stability:** Product is stable under normal temperatures and pressures.

**Polymerization:** Hazardous polymerization will not occur under normal conditions.

**Chemical Incompatibilities:** Oxidizing agents, metals

**Conditions to Avoid:** Strong oxidizers, excessive heat, sparks or open flame.

**Hazardous Decomposition Products:** CO<sub>2</sub>, CO ( Carbon dioxide, Carbon monoxide )

## Section 6 – Health Hazard Information

### Potential Health Effects

**Primary Entry Routes:** Inhalation

**Target Organs:** No data available

**Acute Effects:**

**Inhalation:** Product will act as a nuisance dust. Inhalation of high concentrations of dust may cause coughing and mild, transitory respiratory irritation.

**Eye:** irritation may occur

**Skin:** May cause mild irritation

**Ingestion:** May cause irritation to gastrointestinal tract

**Carcinogenicity:** Not expected to occur.

**Medical Conditions Aggravated by Long-Term Exposure:** Emphysema, asthma, or other respiratory problems.

**Chronic Effects:** Cases of pulmonary fibrosis, emphysema and cor pulmonale may result from prolonged inhalation of dust.

### Emergency and First Aid Procedures

**Inhalation:** Remove affected person to well ventilated area. If necessary, seek medical attention.

**Eye Contact:** Immediately flush with large quantities of water for at least 15 minutes and call a physician.

**Skin Contact:** Wash thoroughly with warm water and soap.

**Ingestion:** Wash out mouth, then dilute by drinking large amounts of water, seek medical attention.

**Special Precautions/Procedures:**

## Section 7 – Spill, Leak, and Disposal Procedures

**Spill /Leak Procedures:**

**Small Spills:** Contain spill, sweep up, collect and place in a disposal container. Avoid runoff into storm sewers and ditches which lead to waterways.

**Containment:**

**Cleanup:** Use water as necessary, for final cleanup

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

**Disposal:** Follow applicable Federal, state, and local regulations.

**Disposal Regulatory Requirements:** As an inert material.

**Container Cleaning and Disposal:** Wipe down and use water as necessary for final cleanup.

**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.Ê2). 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:** 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 non-routine 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:** Practice reasonable care and caution

**Storage Requirements:** Store in a cool dry ventilated area away from heat and open flame.

### DOT Transportation Data (49 CFR 172.101):

**Shipping Name:** Simulant, not an explosive

**Shipping Symbols:** none

**Hazard Class:** n/a

**ID No.:**

**Packing Group:**

**Label:**

**Special Provisions:**

#### Packaging Authorizations

a) **Exceptions:** none

b) **Non-bulk Packaging:**

c) **Bulk Packaging:** none

#### Quantity Limitations

a) **Passenger, Aircraft, or Railcar:**

b) **Cargo Aircraft Only:**

**Vessel Stowage Requirements**

a) **Vessel Stowage:** none

b) **Other:**

**Prepared By:** T. Aquino

**Revision Notes:**

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