



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material Name LTB-1
Revision Date 12/21/2011
Version # 2
Product Use Breaker
Manufacturer / Supplier FRAC TECH SERVICES LLC
2500 HWY 62 West
Chickasha, OK 73018
US
General information: 1-405-222-2300
Emergency 24 Hour Emergency: INFOTRAC: 1-800-535-5053

2. Hazards Identification

Physical State Solid.
Appearance Solid Orange Granules.
Emergency Overview Oxidizer. Avoid breathing dust. Dust may be harmful and irritating. Ammonium Persulfate has low dermal toxicity and is moderately toxic when ingested. This product contains crystalline silica that may cause silicosis and cancer.
OSHA regulatory status Not available.
Routes of exposure
Eyes Minimally irritating to the eyes.
Skin Non-irritating to the skin, but may cause skin sensitization, and allergic reaction, upon repeated exposure which becomes evident upon re-exposure.
Inhalation May cause respiratory tract infection. Inhalation may be fatal as a result of spasm, inflammation, edema of the respiratory tract.
Ingestion May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May be harmful if swallowed.
Potential environmental effects Not available.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Ammonium Persulfate	7727-54-0	>75
Cured acrylic resin	Proprietary	>16
Silica, Crystalline- Quartz	14808-60-7	<10

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First Aid Measures

First aid procedures

Eye Contact Do not rub eyes. IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. COLD water may be used. DO NOT use an eye ointment. Seek medical attention if irritation develops and persists.
Skin Contact If the chemical got onto the clothed portion of the body, remove the contaminated clothes, and shower. If the chemical touches exposed skin, such as the hands; Gently and thoroughly wash contaminated skin with running water and non-abrasive soap. COLD water may be used. If irritation develops and persists, seek medical attention.
Inhalation Immediately go to a well ventilated area and rest. Seek immediate medical attention. If breathing is difficult, give oxygen. If not breathing give artificial respiration.
Ingestion Remove material from mouth and rinse with water if the victim is conscious and alert. If the material is swallowed, DO NOT induce vomiting. If victim is conscious and alert, give 2 to 4

Notes to physician cupfuls of water. Seek immediate medical attention.
 Not available.

5. Fire Fighting Measures

Flammable Properties This material is not considered flammable or combustible.

Extinguishing media

Suitable extinguishing media Deluge with water.

Unsuitable extinguishing media Do not use carbon dioxide or other gas filled fire extinguishers, as they will have no effect on decomposing persulfates.

Specific Hazards arising from the Chemical Oxidizer: Decomposes in storage under conditions of excessive heat and/or moisture.

Firefighting equipment / instructions Full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece.

Specific Methods Not available.

Hazardous combustion products Oxides of nitrogen, sulfur and oxygen that supports combustion.

6. Accidental Release Measures

Personal precautions Ventilate area of leak or spill. Clean-up personnel require goggles and MSHA/NIOSH respiratory protection for dust and organic vapors.

Methods for cleaning up Pick up spill in a manner which does not create dust and place in a suitable container for reclamation or disposal in a method that does not generate dust.

7. Handling and Storage

Handling Do not breath in dust. In case of insufficient ventilation, wear suitable respiratory equipment. If you feel unwell, seek medical attention and show the label when possible. Avoid contact with skin and eyes. Keep away from incompatibles such as reducing agents, organic materials, metals, and moisture.

Storage Oxidizing agents should be stored in a separate safety storage cabinet or room. Store in a cool dry place. Keep away from heat. Keep away from sources of ignition. Keep away from combustible materials. Avoid breakage of material. Keep in a tightly closed container, stored in a dry, ventilated area. Product has a shelf life of 12 months. Use in a first in first out storage system.

8. Exposure Contols / Personal Protection

Occupational exposure limis

US. ACGIH Threshold Limit Values

Components	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3
Ammonium Persulfate	Not available.	0.1	Not available.	Not available.
Cured acrylic resin	Not available.	Not available.	Not available.	Not available.
Silica, Crystalline- Quartz	Not available.	0.1	Not available.	Not available.

US. OSHA Table Z-1 Limits for Air Contaminates (29 CFR 1910.1000)

Components	PEL	
	ppm	mg/m3

Ammonium Persulfate	Not available.	0.1
Cured acrylic resin	Not available.	Not available.
Silica, Crystalline- Quartz	Not available.	0.1

Canada. Alberta OELs (Occupational Health Safety Code, Schedule 1, Table 2)

Components	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3
Ammonium Persulfate	Not available.	Not available.	Not available.	Not available.
Cured acrylic resin	Not available.	Not available.	Not available.	Not available.
Silica, Crystalline- Quartz	Not available.	Not available.	Not available.	Not available.

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3
Ammonium Persulfate	Not available.	Not available.	Not available.	Not available.
Cured acrylic resin	Not available.	Not available.	Not available.	Not available.
Silica, Crystalline- Quartz	Not available.	Not available.	Not available.	Not available.

Canada. Ontario OELs. (Ministry of Labor - Control of Exposure to Biological or Chemical Agents) Components

Components	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3
Ammonium Persulfate	Not available.	Not available.	Not available.	Not available.
Cured acrylic resin	Not available.	Not available.	Not available.	Not available.
Silica, Crystalline- Quartz	Not available.	Not available.	Not available.	Not available.

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) Components

Components	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3
Ammonium Persulfate	Not available.	Not available.	Not available.	Not available.
Cured acrylic resin	Not available.	Not available.	Not available.	Not available.
Silica, Crystalline- Quartz	Not available.	Not available.	Not available.	Not available.

Mexico. Occupational Exposure Limit Values

Components	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3
Ammonium Persulfate	Not available.	Not available.	Not available.	Not available.
Cured acrylic resin	Not available.	Not available.	Not available.	Not available.
Silica, Crystalline- Quartz	Not available.	Not available.	Not available.	Not available.

Engineering controls Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits.

Personal protective equipment

Eye / face protection Splash goggles.

Skin protection Gloves.

Respiratory protection Dust mask or respirator are not necessary in areas with adequate ventilation. Be sure to use a MSHA/NIOSH approved respirator when ventilation is inadequate.

General hygiene consideration Not available.

9. Physical and Chemical Properties

Appearance:	Solid Orange granules
Color	Orange
Odor	Slightly Acrid
Odor threshold	Not available.
Physical State	Solid
Form	Granules
pH	4.5 – 5.5 (1% slurry in water)
Melting point	Not available.
Freezing point	Not available.
Boiling point	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Specific Gravity	1.815
Solubility (water)	Partially Soluble
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.

Decomposition temperature	Not available.
Bulk Density	15.14 lb/gal
VOC	Not available.
Viscosity	Not available.
Percent volatile	Not available.

10. Chemical Stability Reactivity Information

Chemical Stability	This product is stable under ordinary conditions of use and storage. This product becomes unstable in the presence of moisture and reducing agents.
Conditions to avoid	Incompatible materials
Incompatible material	Highly reactive with reducing agents and organic materials. Reactive with metals and moisture. Slightly reactive with acids and alkalis. Slightly corrosive in the presence of steel. Very slightly corrosive in the presence of aluminum, of zinc, and of copper.
Hazardous decomposition products	Oxides of sulfur, sulfuric and ammonia, phosphines, oxides of nitrogen, oxygen which may support combustion and ozone.
Possibility of hazardous reaction	Not available.

11. Toxicology Information

Toxicological Data

Components	Test Results
Ammonium Persulfate	ORAL (LD50): Acute: 700 mg/kg (rat) DERMAL (LD50): >2000 mg/kg (rabbit)
Cured acrylic resin	Not available.
Silica, Crystalline- Quartz	ORAL (LD50): Acute: 3160 mg/kg (rat)

Sensitization Not available.

Carcinogenicity

Ammonium Persulfate	Not available.
Cured acrylic resin	Not available.
Silica, Crystalline- Quartz	Crystalline silica (Quartz) inhaled from occupational sources is classified as carcinogenic to irritant in case of skin contact and ingestion.

Epidemiology Not available.

Mutagenicity Not available.

Reproductive effects Not available.

Teratogenicity Not available.

Further Information Dust may be harmful and irritating. Product is minimally irritating to the eyes and non-irritating to the skin.

12. Ecological Information

Ecotoxicological data

Components**Test Results**

Ammonium Persulfate	LC50: Bluegill sunfish (96 hr) 103 mg/L Rainbow trout (96 hr) 76.3 mg/L Daphnia (48 hr) 120 mg/L Grass Shrimp (96 hr) 391 mg/L
Cured acrylic resin	Not available.
Silica, Crystalline- Quartz	Not available.

Ecotoxicity	Not available.
Persistence and degradability	Not available.
Bioaccumulation / Accumulation	Not available.
Mobility in environmental media	Not available.
Partition coefficient (n-octanol/water)	Not available.

13. Disposal Considerations

Waste codes	Not available.
Disposal instructions	Whatever cannot be saved for reclamation may be disposed by following local, state, and federal regulations.
Contaminated packaging	Not available.

14. Transport Information**DOT**

UN number	UN1444
Proper shipping name	Ammonium Persulfate
Hazard class	5.1
Packing Group	III
Labels required	
DOT reportable quantity	Not available.
Additional information	
Special provisions	
Packaging exceptions	
Packaging non bulk	
Packaging bulk	
ERG number	

IATA

UN number	
Proper shipping name	Not available.
Hazard class	
Packing group	
Additional information	
ERG code	

IMDG

UN number	
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Proper shipping name Not available.
Hazard class
Packing group
EmS No
IMDG Additional information:

15. Regulatory Information

US federal regulation

CERCLA (Superfund) Reportable Quantity: Not available.

Superfund amendments and Reauthorization Act of 1986 (SARA)

Hazard Categories	Immediate Hazard:	No
	Delayed Hazard:	No
	Fire Hazard:	No
	Pressure Hazard:	No
	Reactivity Hazard:	No

Inventory Status

Country	Inventory Name	On Inventory *
Australia	AICS	No
Canada	DSL	No
Canada	NDSL	No
China	IECSC	No
Europe	EINECS	No
Europe	ELINCS	No
Japan	ENCS	No
Korea	ECL	No
New Zealand	NZI	No
United States / Puerto Rico	TSCA	No
Phillipines	PICCS	No

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s).

WHMIS Information

Class C: Oxidizing material
 Class D-2A: Material causing other toxic effects (crystalline silica)

R8- Contact with combustible material may cause fire.
 R9- Explosive when mixed with combustible materials.
 R22- Harmful if ingested.
 R26/28- Very toxic by inhalation-crystalline silica
 R36- Irritating to eyes.

State Regulation

Not available.

16. Other Information

Further Information

HMIS® is a registered trade and service mark of the NPCA.

HMIS® ratings

Health: 1
 Flammability: 0
 Physical Hazard: 1

A HMIS® rating including an * indicates a chronic hazard.

NFPA ratings

Health: 1
Flammability: 0
Instability: 1

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