



## MATERIAL SAFETY DATA SHEET (MSDS)

(This MSDS Complies with 29CFR 1910.1200)

### I. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Manufacturer/Supplier:** Universal Minerals, Inc.  
6319 Brookhill Drive, Houston, Texas 77087  
Tel: 713.797.0054 / 1.800.528.7086 Fax: 713.797.1014  
www.universalminerals.com

**Trade Names:** SharpJet Garnet, Red River Garnet, Syntex Garnet  
**Product/Chemical Name:** Garnet Abrasive Grains  
**Chemical Formula:**  $\text{Fe}_3\text{Al}_2(\text{SiO}_2)$  with Mg & Mn in partial substitution for Fe in the formula  
**CAS Number:** 1302-62-1  
**Other Designations:** Almandite, Pyrope and Spessartine Garnet  
**General Use:** Industrial; not limited to abrasives, non-skid components, water filtration

### II. HAZARDOUS INGREDIENTS / IDENTITY INFORMATION

This material is a natural mixture of almandine garnet -  $\text{Fe}_3\text{Al}_2(\text{SiO}_2)$  with Mg and Mn in partial substitution for Fe in the formula, and other trace minerals. The following substances are present and regulated by OSHA or ACGIH limits:

Substance	WT. %	ACGIH TLV TWA	CAS NUMBER
Nuisance Dust	n/a	15 mg/m <sup>3</sup>	n/a
Respirable Dust	n/a	5 mg/m <sup>3</sup>	n/a
Crystalline Silica	<0.5%	0.10 mg/m <sup>3</sup>	n/a

### III. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Reddish brown to pink grains  
**Particle Shape:** Sub-rounded to angular  
**Odor:** Not applicable  
**Water Solubility:** Insoluble  
**Hardness:** 7.5 – 8.0 Mohs

**Avg. Bulk Density:** 2.4g/cm<sup>3</sup> (150 lbs/ft<sup>3</sup>)  
**Specific Gravity:** 4.1 g/cm<sup>3</sup> (H<sub>2</sub>O = 1.0)  
**Melting Point:** 1,250°C (2,282°F)  
**Reactivity:** Inert

### IV. SECTION 4 – FIRE AND EXPLOSION HAZARD

**Flash Point:** Material is a non-flammable solid  
**Flash Point Method:** Not applicable  
**Flammable Limits:** Not applicable  
**LEL:** Not applicable  
**UEL:** Not applicable  
**Flammability Classification:** Not applicable

NFPA Rating



**Extinguishing Media:** Use extinguishing media appropriate for the surrounding fire.  
**Special Fire Fighting Procedures:** As appropriate to surrounding, fire fighters should be protected from nuisance dust.  
**Unusual Fire and Explosion Hazards:** None

## V. STABILITY AND REACTIVITY

<b>Stability:</b>	Stable
<b>Polymerization:</b>	Will not occur
<b>Chemical Incompatibilities:</b>	None known
<b>Hazardous Decomposition Products:</b>	None known

**Almandine garnet is an inert, stable solid needing no special handling in normal use.**

## VI. HEALTH HAZARD INFORMATION

<b>Health Hazards (acute and chronic):</b>	None known. Use care to limit possible exposure to nuisance dust during blast cleaning.
<b>Carcinogenicity:</b>	Crystalline silica (quartz) – contains less than 0.5%.
<b>Inhalation:</b>	Dust may cause irritation of the nasal and respiratory tract.
<b>Skin:</b>	May cause abrasions.
<b>Ingestion:</b>	None known; however, ingestion is not recommended.
<b>Medical Conditions Generally Aggravated by Exposure:</b>	Chronic bronchitis, emphysema and other lung diseases may be aggravated by exposure to nuisance dust.

### EMERGENCY FIRST AID PROCEDURES

<b>Inhalation:</b>	Remove to fresh air; administer oxygen if breathing is difficult.
<b>Eye Contact:</b>	Wash eyes with water to flush out dust particles; obtain medical assistance if needed.
<b>Skin Contact:</b>	Wash affected area with soap and water.
<b>Ingestion:</b>	Obtain first aid or medical assistance, if needed.

## VII. PRECAUTIONS FOR SAFE HANDLING AND USE

### SPILL / LEAK PROCEDURES

<b>Spills:</b>	Sweep or vacuum material for disposal or recovery.
<b>Disposal:</b>	Follow local, state and federal guidelines for disposal of inert solid waste. <b>MATERIAL CONTAMINATED IN USE MAY REQUIRE SPECIAL HANDLING.</b>
<b>Handling / Storage Precautions:</b>	None – use good housekeeping practices to reduce dust; use approved hand, eye and respiratory protection when handling.
<b>Other Precautions:</b>	Use materials only for the purposes intended, and incorporate methods of dust Control to maintain airborne dust within federal or local TLV limits.

## VIII. CONTROL MEASURES

<b>Ventilation:</b>	Provide sufficient local exhaust or mechanical (general) ventilation to maintain dust exposure limit below threshold limit value (TLV).
<b>Respiratory Protection:</b>	NIOSH/MSHA approved filters and air supplied hoods / helmets for blasters.
<b>Eye Protection:</b>	Safety glasses with side shields, goggles or face shield.
<b>Protective Gloves:</b>	Leather or equivalent – in use.
<b>Other Protective Clothing or Equipment:</b>	Normal safety protection is adopted.
<b>Work / Hygienic Practices:</b>	Maintain a clean and safe work environment and monitor work practices.

Updated: 01/10

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## TECHNICAL DATA & PHYSICAL CHARACTERISTICS FOR SHARPJET GARNET ABRASIVES

### Average Chemical Composition (wt %)

SiO <sub>2</sub> .....	38%
Al <sub>2</sub> O <sub>3</sub> .....	22%
Fe <sub>2</sub> O <sub>3</sub> .....	30%
TiO <sub>2</sub> .....	1%
MnO.....	1%
CaO.....	1%
MgO.....	7%

### Average Chemical Composition (wt %)

U.S. Mesh	Grade		
	30x60	80 Mesh	100 Mesh
35	5		
40	11		
50	44	9	
60	26	42	
70	11	31	5
80	3	16	50
100		2	35
120			8
140			2

### Recommended Blasting Conditions

Nozzle pressure.....90+ psi  
 Material flow .....400-600 lbs/hr  
 Nozzle size ..... #6 or larger  
 Work distance ..... 18-24 inches

### Mineral Composition (Typical)

Garnet (Almandite).....	+98-99%
Ilmenite.....	<0.8%
Zircon.....	<0.2%
Quartz.....	<0.5%
Others.....	<0.2%

### Physical Characteristics

Bulk density.....131-137 lbs/ft<sup>3</sup>  
 Specific Gravity.....4.1  
 Hardness (Mohs).....7.50  
 Melting Point.....1,250°C  
 Particle Shape.....Sub-rounded to sub-angular  
 Reactivity.....Inert

### Other Characteristics

Conductivity.....0-15ms/m (max 25 ms/m)  
 Radioactivity.....Not detectable above background  
 Moisture Absorption.....Non-hydroscopic  
 Total Chlorides.....10-15 ppm (max 25 ppm)  
 Free Iron.....Less than 0.01%  
 Copper.....Less than 0.01%  
 Other Heavy Metals.....Less than 0.01%

UMI's Sharpjet garnet is certified by the California Air Resources Board for dry unconfined blasting. UMI's garnet meets all current EPA, NIOSH and OSHA chemical limits and is on the Qualified Products List for U.S. Navy specification MIL-A-22262B(SH).

<p>For more information:</p>	<p>Distributed by:</p> <p><b>Corrosion Control Equipment and Supplies</b></p>	<p><b>Houston Office:</b>          248 McCarty Dr.          Houston, TX 77029          (713) 672-8251          Fax (713) 672-6636</p> <p style="text-align: center;"><b>1-800-CLEMTEX</b>  <a href="http://www.clemtex.com">www.clemtex.com</a>  <a href="mailto:houston@clemtex.com">houston@clemtex.com</a></p>	<p><b>Dallas Branch:</b>          4770 Gretna          Dallas, TX 75207          (214) 631-6584          Fax (214) 631-5824          1-800-BLAST 97  <a href="mailto:dallas@clemtex.com">dallas@clemtex.com</a></p> <p><b>Corpus Christi Branch:</b>          4750 Westway          Corpus Christi, TX 78408          (361) 882-8282          Fax (361) 882-6029  <a href="mailto:corpus@clemtex.com">corpus@clemtex.com</a></p>
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