



# Material Safety Data Sheet

## Section: I – IDENTIFICATION

Garnet Name : Almandine  
Product Name : Garnet Abrasive Grit  
Grade Name & Use : Grade : # 30 ~ 60 - Blasting  
Manufacture's Name : MCS RESOURCES  
320 Serangoon Road,  
# 16-02, Centrium Square,  
Singapore 218108.

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## Section: II – MINERALS COMPOSITION

Garuda garnet is a natural mixture of Almandine garnet and it was collected from Inland and sea shore area. Almandine garnet purity and other mixed trace minerals

Minerals / Chemical composition	CAS. NO.	Proportion By weight
Almandine Garnet (Fe <sub>3</sub> Al <sub>2</sub> (SiO <sub>4</sub> ) <sub>3</sub> )	1302-62-1	> 98.00 %
Ilmenite (FeTiO <sub>3</sub> )	103170-28-1	< 01.50 %
Shell (CaCO <sub>3</sub> )	471-31-1	< 00.20 %
Quartz (SiO <sub>2</sub> )	14808-60-7	< 00.50 %
Zircon (ZrSiO <sub>4</sub> )	14940-68-2	< 00.20 %

## Section: III - HAZARDS INFORMATION

Non-Hazardous and Non-Dangerous cargo according to criterion NOHSC : 1008(2004). Because it is natural minerals.

## Section: IV - HEALTH HAZARDS & FIRST AID PROCEDURES

Swallowed: Non toxic. There are no known health hazard effects resulting from accidental ingestion as that may occur while the workers normal handling. Absorb the larger amounts may cause irritation due to abrasiveness. First aid is unlikely to be required, but if necessary wash mouth with water ensuring the mouthwash is not swallowed. Contact medical consultant, if any problems develop.

Eye: Materials and dust contact can cause eye irritation due to abrasiveness. Normal force with lot of clean water for at least 10 minutes or until the abrasive is removed. Also can contact medical consultant, if any problems develop.



Skin: There are no known health effects from skin contact that may happen during normal handling. Contact medical consultant, if any problems develop. Also while blasting the material contact with skin under pressure will damage skin. Gently remove the contamination clothing to avoid dust, then wash the skin. If the irritation is resists, Contact medical advice.

Inhaled: Normally regarded as general nuisance dust, but can be irritating if inhaled in high concentration may cause lung irritation. Shift to fresh air and blow nose to remove particulates from nasal passages. Contact medical consultant, if any problems found.

#### **SECTION - V - STABILITY & REACTIVITY DATA**

Stability	-	Stable
Polymerization	-	Cannot occur
Incompatibility	-	None Known
Hazardous Reactions	-	None Known
Decomposition	-	Not applicable

#### **SECTION -VI - FIRE AND EXPLOSION HAZARD DATA**

Flammability	-	Non-flammable solid
Flash Point	-	Not applicable
General Hazard	-	Non-flammable and does not support burning
LEL	-	Not applicable
UEL	-	Not applicable
Extinguishing Media	-	Use appropriate extinguishing media for the surrounding fire.

#### **SECTION - VII - PHYSICAL & CHEMICAL CHARACTERISTICS**

##### **a) Physical Characteristics: -**

Melting point	-	1320 °C
Specific gravity	-	4.1
Bulk density	-	2.42 g/cm <sup>3</sup>
Solubility in water	-	Insoluble
Acid solubility	-	< 0.5 %
Appearances & Odour	-	Pink to red & No odour
Physical state	-	Solid
Viscosity	-	Not Applicable
Boiling point	-	Not Applicable
Vapour Pressure	-	Not Applicable
PH	-	Neutral
Hardness	-	> 7 Moh scale
Free metal	-	< 0.01 %
Water soluble Chloride	-	< 25 ppm
Conductivity	-	< 50 mS/m
Moisture	-	< 0.20 % (Dry solid)
Grade Shape	-	Spheroid
Grain Size	-	150 micron to 850 micron

**b) Composition :-**

SiO <sub>2</sub>	-	35.00 %
Fe <sub>2</sub> O <sub>3</sub>	-	33.00 %
Al <sub>2</sub> O <sub>3</sub>	-	21.00 %
MgO	-	07.30 %
CaO	-	01.50 %
TiO <sub>2</sub>	-	01.00 %
Cr <sub>2</sub> O <sub>3</sub>	-	00.05 %
MnO	-	00.50 %
P <sub>2</sub> O <sub>5</sub>	-	00.04 %

**SECTION – VIII – PERSONAL PROTECTION**

Crystalline silica	-	0.10 mg/m <sup>3</sup>
Repairable dust	-	5 mg/m <sup>3</sup>
Nuisance dust	-	15 mg/m <sup>3</sup>

If these levels are exceeded respiratory protection must be applied

**Personal Protection:** Safety glasses, Gloves and nose mask. Maintain a clean and safe work place and monitor effectiveness.

**Engineering controls:** Dust collector and ventilation requirements will depend on handling methods and the amount in use, but should be sufficient to maintain dust levels exposure limit. Points of dust generation such as conveyor and hopper discharges should be equipped with an effective extraction system.

**SECTION – IX – HANDLING AND STORAGE**

Adopt good house keeping practices to reduce dust. Use approved hand, eye and respiratory protection devices while the material handling. No special safety measures required. Storage place should be ventilated and dust generation minimized when handling.

**SECTION – X – CONTROL MEASURES**

Respiratory Protection (Specify type)

NIOSH / MSHA – Approved filters and air supplied goods for blasters

Ventilation	Local Exhaust	Special
Yes	Use when blast cleaning	None
	Mechanical (General)	Other
	Meet dust TLV	None

Protection Gloves: Leather gloves, cabs and paper mask.

Eye Protection: Safety glasses with side shields approved by central.

Other Protective clothing or Equipment: Normal safety protection is adopted.

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Work / Hygienic Practices: keep a clean and safe work place and monitor work practices.

**SECTION – XI – TRANSPORT**

ICAO / IATA NOT REGULATED

**SECTION – XII – DISPOSAL PROCEDURES**

As per the local, state and central rules for the disposal of inert solid waste. Material contaminated in use may require special handling and disposal.

**SECTION – XIII - REGULATORY INFORMATION**

This product is natural and dry mineral and the material collected from inland and sea shore. It is non- hazardous and non-dangerous cargo and does not require any special precautions.

**SECTION – XIV – ENVIRONMENTAL INFORMATION**

This material is a natural mineral with no known ecotoxicity. It is insoluble in water, because it is very heavy material and it should not contaminate waterways and food materials. Also it does not dangerous to animals and plants.

**SECTION – XV – TOXIC INFORMATION**

This product is non-toxic with no known sensitive health effects relating to human exposure.

**SECTION – XVI – SPECIAL COMMENTS & PRECAUTIONS**

The above said information is believed to be accurate, but is not warranted with respect to the accuracy of the information or recommendations. As per the work safety rule, each and every user should reconsider the above information while product using.