



## Safety Data Sheet

### Safety Data Sheet : Garnet Abrasive

Issue Date: 18th August, 2014

#### Section 1 - IDENTIFICATION: PRODUCT IDENTIFIER AND CHEMICAL IDENTITY

**Product Name:** GARNET

**Recommended Use of the Chemical and Restriction on Use:**

Blast cleaning abrasive, water jet cutting abrasive, water filtration, aggregate and surface preparation.

**Details of Manufacturer or Importer:**

Dustless Blasting  
17 Daintree Drive  
Redland Bay QLD 4165

**Phone Number:** 1300 304 415

**Emergency telephone number:** 0488 038 986

#### Section 2 - HAZARDOUS IDENTIFICATION

**Hazardous Nature:**



health hazard

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

**Label Elements**

**Signal Word** Warning

**Hazard Statements** H373 May cause damage to organs through prolonged or repeated exposure.

**Precautionary Statements**

P260 Do not breathe dust/fume/gas/mist/vapours/spray. P314 Get medical advice/attention if you feel unwell. P501 Dispose of contents/container in accordance with local/regional/national regulations.

**Additional Information**

The product as supplied contains traces of quartz (crystalline silica) which when used as an abrasive can break down to respirable dust size (particles small enough to go into deep parts of the lung when breathed in). Respirable crystalline silica is a listed carcinogenic substance which may cause silicosis and cancer. The product is dominantly garnet (hard rock Almandine variety), a non-hazardous substance. Traces of dust in the unused product is from calcium carbonate which is also non-dangerous and non-hazardous.

#### Section 3 - COMPOSITION AND INFORMATION ON INGREDIENTS

**Chemical Characterization: Mixtures**

**Description:**

This material is a natural mixture of almandine garnet with the chemical composition or formula of  $(\text{Fe}^{2+}\text{Mg})_3\text{Al}_2(\text{SiO}_4)_3$  and other trace minerals as per CAS No. for Almandine garnet 1302-62-1.

Hazardous Components:		
1302-62-1	Almandine Garnet $(\text{Fe}^{2+}\text{Mg})_3\text{Al}_2(\text{SiO}_4)_3$	>95%
103170-28-1	Ilmenite $(\text{Fe}^{2+}\text{TiO}_3)$ , reaction products with carbon monoxide	<2%
471-34-1	Carbonic acid, calcium salt (1:1)	<1.5%
149040-68-2	Zircon $(\text{ZrSiO}_4)$	<0.2%
14808-60-7	Quartz $(\text{SiO}_2)$	<0.5%

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### Additional information:

Typical Chemical Composition:

Silica (SiO <sub>2</sub> ):	34-38%
Iron (Fe <sub>2</sub> O <sub>3</sub> +FeO):	25-30%
Alumina (Al <sub>2</sub> O <sub>3</sub> ):	18-22%
Magnesium (MgO):	4-6%
Calcium (CaO):	1-9%
Manganese Dioxide (MnO):	1-2%
Titanium Oxide (TiO <sub>2</sub> ):	1-2%

## Section 4 - FIRST AID MEASURES

### Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention if breathing problems develop.

### Skin Contact:

In case of skin contact, immediately wash affected areas with mild soap and lukewarm water. Seek medical attention if symptoms occur.

### Eye Contact:

In case of eye contact, hold eyelids open and rinse with lukewarm water for at least 15 minutes to flush out particles, moving the eyelids by occasionally lifting the upper and lower lids. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention if symptoms persist.

### Ingestion:

If swallowed, immediately rinse mouth and drink some water. Never give anything by mouth to an unconscious person. Seek medical attention if symptoms occur.

### Information for Doctor

#### Symptoms Caused by Exposure:

Inhalation: May cause throat and lung irritation, coughing or shortness of breath.

Eye contact: May cause eye irritation resulting in redness, watering or/and an infection.

## Section 5 - FIRE FIGHTING MEASURES

### Suitable Extinguishing Media:

Use fire extinguishing methods suitable to surrounding conditions.

### Specific Hazards Arising from the Chemical:

This material is non-flammable and does not support combustion. Ensure adequate ventilation to prevent dust explosions.

### Special Protective Equipment and Precautions for Fire Fighters:

Wear Safe Work Australia approved self-contained breathing apparatus and full protective clothing.

## Section 6 - ACCIDENTAL RELEASE MEASURES

### Personal Precautions, Protective Equipment and Emergency Procedures:

Wear Safe Work Australia approved dust/particulate filter respirator and full protective clothing. Evacuate all non-essential personnel from affected area. Do not breathe dust. Ensure adequate ventilation. Avoid generating dust.

### Environmental Precautions:

In the event of a major spill, prevent spillage from entering drains or water courses.

### Methods and Materials for Containment and Cleaning Up:

Stop leak if safe to do so. Cover the material with a tarpaulin and secure to the ground in order to protect against dust emissions and gravitational flows into waterways. Clean up the spilled material immediately once the site is secured, avoiding generating dust. Use vacuum equipment with HEPA filters or wet sweeping/dust suppressant if sweeping is required. Collect in suitable, closed containers for subsequent disposal.



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### Section 7 - HANDLING AND STORAGE

#### Precautions for Safe Handling:

Use of safe work practices are recommended to avoid eye or skin contact and inhalation of dust. Food, beverages and tobacco products should not be stored or consumed where this material is in use. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use. Provide eyewash fountains and safety showers in close proximity to points of potential exposure.

#### Conditions for Safe Storage:

Store in a cool, dry and well ventilated area. Keep container tightly closed to prevent dust exposure. Do not store near a heat source. Avoid dust generation. Regularly vacuum enclosed areas where the product is used or install a dust extraction system.

### Section 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Standards:	
<b>471-34-1 Carbonic acid, calcium salt (1:1)</b>	
NES	TWA: 10 mg/m <sup>3</sup>
<b>14808-60-7 Quartz (SiO<sub>2</sub>)</b>	
NES	TWA: 0.1 mg/m <sup>3</sup> respirable dust

Nuisance dust: TWA - 10 mg/m<sup>3</sup> (total dust) TWA - 2 mg/m<sup>3</sup> (respirable dust)

#### Engineering Controls:

Ensure adequate ventilation of the workplace. Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below the limits. Local exhaust is recommended if dusts are generated.

#### Personal Protective Equipment (PPE):

##### Respiratory Protection:

Where an inhalation risk exists, wear a Class P1 (particulate) respirator. At high dust levels, wear a powered air purifying respirator (PAPR) with Class P3 (Particulate) filter or an air-line respirator or a full-face Class P3 (particulate) respirator. Industrial abrasive blasting operations should use an AS 175 approved air fed abrasive blasting hood, such as a NOVA 2000. See Australian/New Zealand Standards AS/NZS 1715 and 1716 for more information.

Hearing protection should also be worn when using this material for blasting.

##### Skin Protection:

Leather/pigskin, rubber, neoprene or nitrile gloves. See Australian/New Zealand Standard AS/NZS 2161 for more information. When selecting hand protection, the product should comply with relevant performance criteria. For example, gloves should meet a suitable level of abrasion resistance to provide protection against hazards of a workplace.

Occupational protective clothing, e.g. full length protective trousers and shirts, heavy duty protective suit and safety boots (depending on conditions in which it has to be used, in particular as regards the period for which it is worn, which shall be determined on the basis of the seriousness of the risk, the frequency of exposure to the risk, the characteristics of the workstation of each worker and the performance of the protective clothing). See Australian/New Zealand Standard AS/NZS 4501 for more information.

##### Eye and Face Protection:

Eye and face protectors for protection against dust. Low impact goggles with indirect ventilation (HT or CT with C, D optional) are typically most appropriate and commonly used for this material. See Australian/New Zealand Standard AS/NZS 1337 for more information.



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### Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:**

**Form:** Granular and solid (free flowing sand/rough grit)  
**Colour:** Reddish brown to pink  
**Odour:** Odourless

**Odour Threshold:** No information available

**pH-Value:** 7 (Neutral)

**Melting point/Melting range:** 1250-1315 °C

**Initial Boiling Point/Boiling Range:** Not applicable

**Flash Point:** Not applicable

**Flammability:** Product is not flammable

**Auto-ignition Temperature:** No information available

**Decomposition Temperature:** No information available

**Explosion Limits:**

**Lower:** Not applicable

**Upper:** Not applicable

**Vapour Pressure:** Not applicable

**Bulk Density:** 1.9-2.4 g/cm<sup>3</sup>

**Relative Density:** 3.8-4.2 g/cm<sup>3</sup> (water=1)

**Vapour Density:** Not applicable

**Evaporation Rate:** Not applicable

**Solubility in Water:** Insoluble

**Solubility in Acid:** Less than 1%

**Additional Information:**

Particle Size Range: 0.05mm-5mm  
Particle Shape: Sub-rounded to Angular  
Free Flow: >90%  
Moisture: <0.2%  
Hardness: 7.5-8.0 Mohs  
Reactivity: Inert  
Radioactivity: Non detectable above background levels  
Conductivity: Less than 25ms/m  
Corrosiveness: Non corrosive  
Cleanness: Sa 2.5  
Roughness: <75  
Mean Refractive Index: 1.77-1.79

### Section 10 - STABILITY AND REACTIVITY

**Possibility of Hazardous Reactions:** Hazardous polymerisation will not occur.

**Chemical Stability:** Stable at ambient temperature and under normal conditions of use.

**Conditions to Avoid:** None known.

**Incompatible Materials:** None known.

**Hazardous Decomposition Products:** Not applicable.



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### Section 11 - TOXICOLOGICAL INFORMATION

#### Toxicity:

LD <sub>50</sub> /LC <sub>50</sub> Values Relevant for Classification:		
471-34-1 Carbonic acid, calcium salt (1:1)		
Oral	LD <sub>50</sub>	6450 mg/kg (rat)

#### Acute Health Effects

**Inhalation:** May cause throat and lung irritation, coughing or shortness of breath.

**Skin:** May cause skin irritation.

**Eye:** May cause eye irritation resulting in redness, watering or/and an infection.

**Ingestion:** Ingestion is unlikely through normal use, however, swallowing any amount of this product may cause immediate or delayed abdominal discomfort due to abrasion.

**Skin Corrosion / Irritation:** Based on classification principles, the classification criteria are not met.

**Serious Eye Damage / Irritation:** Based on classification principles, the classification criteria are not met.

**Respiratory or Skin Sensitisation:** No sensitising effects known.

**Germ Cell Mutagenicity:** Based on classification principles, the classification criteria are not met.

#### Carcinogenicity:

Silica dust, crystalline, in the form of quartz or cristobalite is classified by IARC as Group 1 - Carcinogenic to humans.

**Reproductive Toxicity:** Based on classification principles, the classification criteria are not met.

#### Specific Target Organ Toxicity (STOT) - Single Exposure:

Based on classification principles, the classification criteria are not met.

#### Specific Target Organ Toxicity (STOT) - Repeated Exposure:

Causes damage to organs through prolonged or repeated exposure.

**Aspiration Hazard:** Based on classification principles, the classification criteria are not met.

#### Chronic Health Effects:

Prolonged inhalation of crystalline silica may result in silicosis, a disabling pulmonary fibrosis characterized by fibrotic changes and miliary nodules in the lungs, a dry cough, shortness of breath, emphysema, decreased chest expansion, and increased susceptibility to tuberculosis. In advanced stages, loss of appetite, pleuritic pain, and total incapacity to work. Advanced silicosis may result in death due to cardiac failure or destruction of lung tissue.

#### Existing Conditions Aggravated by Exposure:

Chronic respiratory, bronchitis, emphysema and other lung diseases may be aggravated by exposure to nuisance dust.

### Section 12 - ECOLOGICAL INFORMATION

#### Ecotoxicity:

This material is a naturally occurring mineral with no known ecotoxicity. It is insoluble in water and unlikely to contaminate waterways or food chains.

**Aquatic toxicity:** No information available

**Persistence and Degradability:** No information available

**Bioaccumulative Potential:** No information available

**Mobility in Soil:** No information available

### Section 13 - DISPOSAL CONSIDERATIONS

**Disposal Methods and Containers:** Dispose according to applicable local and state government regulations.

#### Special Precautions for Landfill or Incineration:

Please consult your state Land Waste Management Authority for more information.

### Section 14 - TRANSPORT INFORMATION

UN Number	Not regulated
Proper Shipping Name	Not regulated
Dangerous Goods Class	Not regulated
Packing Group	Not regulated

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### Section 15 - REGULATORY INFORMATION

Australian Inventory of Chemical Substances:	
103170-28-1	Ilmenite (Fe <sup>2+</sup> TiO <sub>3</sub> ), reaction products with carbon monoxide
471-34-1	Carbonic acid, calcium salt (1:1)
14808-60-7	Quartz (SiO <sub>2</sub> )

### Section 16 - OTHER INFORMATION

**Creation Date:** 18.08.2014

**Prepared by:** MSDS.COM.AU Pty Ltd [www.msds.com.au](http://www.msds.com.au)

**Abbreviations and acronyms:**

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

IARC: International Agency for Research on Cancer

STEL: Short Term Exposure Limit

TWA: Time Weighted Average

NES: National Exposure Standard (Safe Work Australia - Workplace Exposure Standards For Airborne Contaminants)

**Disclaimer**

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