

GARNET

ABRASIVE

SECTION 1: IDENTIFICATION OF MATERIAL AND SUPPLIER

Product Name:	MarineBlast, TankBlast, SteelBlast, PipeBlast, ToughBlast, SpeedBlast, PremiumBlast, NewSteel
Other Names:	Garnet Sand, Almandine Garnet, Aluvial Garnet, Crushed Garnet
Recommended Use:	Blast Cleaning Abrasive, Industrial Abrasive Media
Supplier:	BlastOne International
Address:	4510 Bridgeway Avenue, Columbus, OH 43219
Telephone Number (24/7):	(614) 476 3000
Fax Number:	(614) 476 6939
E-mail:	sales@blastone.com

SECTION 2: HAZARDS IDENTIFICATION

United States (U.S.)

According to OSHA 29 CFR 1910.1200 HCS

Classification of the substance or mixture: HCS 2012 Carcinogenicity 1A - H350

Label Elements: OSHA HCS 2012

Hazard statements: None required.

Precautionary Statements: None required.

OTHER HAZARDS

OSHA HCS 2012

Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this material is not considered hazardous.

CLP

According to Regulation (EC) No. 1272/2008 (CLP) this material is not considered hazardous.

DSD/DPD

According to European Directive 1999/45/EC this material is not considered dangerous.

If the crystalline silica (fine fraction) content in mixtures and substances is below 0.1 %, no classification is required.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

This material is a natural mixture of almandine garnet and other trace minerals.

CHEMICAL IDENTITY	COMMON NAME	CAS NUMBER	PROPORTION (WEIGHT %)
$(\text{Fe,Ca})_3\text{Al}_2(\text{SiO}_4)_3$	Garnet*	1302-62-1	>92%
$(\text{Ca, Fe}_2)\text{Si}_2\text{Al}_2\text{O}_6$ $(\text{Mg,Mn})\text{Si}_2\text{Al}_2\text{O}_6$ $(\text{Mg,Mn}^2)\text{Si}_2\text{Al}_2\text{O}_6$	Proxene	12174-37-3	4%
FeTiO_3	Ilmenite	103170-28-1	<1%
SiO_2	Quartz (Crystalline Silica)	14808-60-7	<0.1%
$\text{Ca}_2(\text{Mg,Fe,Al})_5(\text{Al,Si})_8\text{O}_{22}(\text{OH})_2$	Hornblende	1178-42-6	<2%

SECTION 4: FIRST AID MEASURES

Ingestion:	May cause abdominal discomfort due to abrasiveness; get medical attention if symptoms develop.
Eye Contact:	In case of eye contact, immediately flush eyes with running water with plenty of clean water for at least 20. If eye irritation persists; seek medical advice/attention.
Skin Contact:	There are no known health effects from skin contact that may occur during normal handling. Contact with material under pressure will damage skin by abrasion. Clean and dress any open wound and seek medical advice/attention.
Inhalation:	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Administer oxygen if breathing is difficult. If breathing difficulties persist, seek medical attention immediately.

It is recommended that eyewash facilities are available in the workplace.

Most important symptoms and effects, both acute and delayed: Refer to Section 11 - Toxicological Information.

Indication of immediate medical attention and special treatment needed, if necessary:

All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

SECTION 5: FIRE FIGHTING MEASURES

This product is non-flammable and does not support combustion.

Extinguishing media:	Non-flammable. Use media suitable for the surrounding materials.
Specific hazards arising from the chemical:	None known.
Special protective equipment and precautions:	No specific procedures given. Use protective equipment and precautions suitable for surrounding fire.

NFPA



SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal:	Do not walk through spilled material. Wear appropriate Personal Protective Equipment (PPE).
Environmental:	This material should not be dumped in nature but collected and disposed of in accordance with local, state or federal guidelines. Avoid run off to waterways and sewers.
Containment:	Avoid generating unnecessary dust. Sweep or vacuum up material for disposal or recovery.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling:	No special precautions necessary for normal handling of the material. Use only with adequate ventilation. Wear appropriate personal protective equipment.
Conditions of safe storage, including any incompatibilities:	No special precautions necessary for normal storage of the material. Keep container/package tightly closed and in a well-ventilated place. Practice good housekeeping practiced to keep nuisance dust to a minimum.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters/Exposure Standards: OELs (respirable fraction) in air for dust containing crystalline silica (quartz).

Standard	Exposure Limits
ACGIH TLV** (8-Hour Time-Weighted Average)	0.025 mg/m ³
NIOSH REL** (10-Hour Time-Weighted Average, 40-hour work week)	0.05 mg/m ³
MSHA/OSHA PEL* (8-Hour Time-Weighted Average)	10 mg/m ³ / (% SiO ₂ +2)
AIOH	0.1 mg/m ³
OHS	0.025 mg/m ³

* Crystalline silica is normally measured as respirable dust. The OSHA/MSHA standard also presents a formula for calculation of the PEL based on total dust: 30 mg/m³ / (% SiO₂ +2). The OSHA/MSHA PEL for dust containing crystalline silica (quartz) is based on the silica content of the respirable dust sample. The OSHA/MSHA PEL for crystalline silica as tridymite and cristobalite is one-half the PEL for crystalline silica (quartz).

** The ACGIH and NIOSH limits are for crystalline silica (quartz), independent of the dust concentration. The ACGIH TLV for crystalline silica as cristobalite is equal to the TLV for crystalline silica as quartz. In 2005, ACGIH withdrew the TLV for crystalline silica as tridymite. OELs in air for inert/nuisance dust.

Standard	Respirable Dust	Total Dust
MSHA/OSHA PEL (as Inert or Nuisance Dust)	5 mg/m ³	15 mg/m ³
ACGIH TLV (as Particles Not Otherwise Specified)	3 mg/m ³	*10 mg/m ³

Note: The limits for Inert Dust are provided as guidelines. Nuisance dust is limited to particulates not known to cause systemic injury or illness. * The TLV provided is for inhalable particles not otherwise specified.

California/OSHA's Permissible Exposure Levels over an 8-hour average basis.

Respirable crystalline silica (quartz, fused, tripoli), 0.1 mg/m³ - 0.1 milligrams of Silica in 1 cubic meter of air. Total crystalline silica (quartz), 0.3 mg/m³, Respirable cristobalite and tridymite, 0.05 mg/m³.

Canadian OEL:

Canada Labor Code (Canadian Centre Occupational Health & Safety [OHS]): 0.025 mg/m³ (respirable) Alberta, British Columbia: 0.025 mg/m³ (respirable quartz and cristobalite)

Saskatchewan: 0.05 mg/m³ (respirable, cristobalite); 0.05 mg/m³ (respirable, quartz); 0.1 mg/m³ (respirable, Tripoli, as quartz)

Manitoba, Newfoundland, Prince Edward Island: 0.025 mg/m³ (respirable, crystalline silica)

Ontario: 0.05 mg/m³ (respirable cristobalite); 0.1 mg/m³ (quartz, tripoli)

Quebec: 0.05 mg/m³ (respirable, cristobalite, tridymite); 0.1 mg/m³ (quartz, tripoli) New Brunswick: 0.1 mg/m³ (quartz); 0.05 mg/m³ (cristobalite)

Nova Scotia: 0.025 mg/m³ (quartz, cristobalite)

Yukon: 300 particles/ml measured with a konimeter (quartz, and tripoli); 150 particles/ML measured with a konimeter (cristobalite and tridymite)

Northwest Territories, Nunavut: 0.05 mg/m³ (respirable, cristobalite, tridymite); 0.1 mg/m³ (respirable) Austria OEL: - Maximum allowable concentration 0.15 mg/m³

Australia: (AIOH) (OEL) – 0.1 mg/m³

Mexico: 0.1 mg/m³ (quartz, tripoli containing respirable quartz powder, inhalable), 0.05 mg/m³ (cristobalite, tridymite inhalable) (Also refer to ACGIH)

Argentina: 0.05 mg/m³ (quartz, cristobalite, tridymite respirable) 0.1 mg/m³ (tripoli, respirable) United Kingdom OEL: 0.1 mg/m³ (quartz, cristobalite, tridymite)

Japan OEL: Japan Society of Occupational Health Respirable crystalline silica 0.03 mg/m³ Poland OEL TWA:

- 2 mg/m³ (total inhalable dust, containing >50% free crystalline silica);
- 0.3 mg/ mg/m³ m³ (respirable dust, containing >50% free crystalline silica);
- 4.0 mg/m³ (total inhalable dust, containing 2% to 50% free crystalline silica);
- 1.0 mg/m³ (respirable dust, containing 2% to 50% free crystalline silica); and
- 10.0 mg/m³ (total inhalable dust, containing < 2% free crystalline silica)

If your Country or Territory is not listed, stricter regulations (ACGIH) apply where the materials are being used.

Key to abbreviations

PEL = Permissible Exposure Level determined by the Occupational Safety and Health Administration (OSHA)

ACGIH = American Conference of Governmental Industrial Hygiene

AIOH = Australian Institute of Occupational Hygienists

OSHA = Occupational Safety and Health Administration

NIOSH = National Institute of Occupational Safety and Health

TLV = Threshold Limit Value determined by the American Conference of Governmental Industrial Hygienists (ACGIH)

TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

(b) Engineering Measures and Controls:

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable use process enclosures, exhaust ventilation or dust collectors to maintain airborne levels below recommended exposure limits. Operate and maintain dust collectors per manufacture recommendations.

(c) Personal Protective Equipment:

For limited exposure use an N95 dust mask or equivalent. For prolonged exposure follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149.

Wear safety glasses

Wear protective clothing and gloves

Follow local, state or federal guidelines for the use of personal protection equipment. Blast cleaning operations should use an air fed blast hood conforming to the required OSHA or NIOSH standards, as well as leather (or equivalent) gloves and apron when in use. Hearing protection should also be worn when blast cleaning.

Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Pink to red colored free flowing sand.
Odor:	Odorless.
Odor threshold	Not applicable.
pH:	8.0 to 9.0
Melting Point:	Approximately 1250°C (2282°F)
Flash Point:	Non-combustible.
Evaporation rate	Not applicable.
Flammability (solid, gas):	Non-flammable.
Upper/lower flammability or explosive limits:	Non-combustible.
Vapor Pressure:	Not applicable.
Vapor density	Not applicable.
Specific Gravity:	4.1
Solubility:	Insoluble.
Radioactivity:	Not detectable above background levels.
Hardness:	7.5 – 8.0 Mohs
Particle Size:	Average range between 0.1 – 0.6mm, depending on grade.
Particle Shape:	Sub-angular.
Source:	Alluvial and crushed garnet
Bulk Density:	Approximately 2.4 t/m ³ (149.82 lbs/ft ³)
Volatile organic compounds content:	Below detectable limits.
Partition coefficient: n-octanol/water	Not applicable.
Auto-ignition temperature:	Not applicable.
Decomposition temperature:	Not applicable.
Viscosity:	Not applicable.

SECTION 10: STABILITY AND REACTIVITY

Reactivity:	Inert solid under normal and anticipated storage, handling and use conditions.
Chemical Stability:	Stable.
Possibility of hazardous reactions:	None known.
Conditions to Avoid:	None known.
Incompatible Materials:	None known.
Hazardous decomposition products:	Not applicable.

SECTION 11: TOXICOLOGICAL INFORMATION

No acute or chronic health effects known in workers arising from short or long term exposure to this product. This product does not contain toxic substance above known reportable limits.

Symptoms related to physical, chemical and toxicological characteristics: none known.

Delayed and immediate effects and also chronic effects from short and long term exposure: none known.

Numerical measures of toxicity: none known.

Crystalline Silica (SiO₂)

14808 -60 -7

Acute Toxicity: Inhalation-Human TCl₀ • 16 mppcf 8 Hour(s) 17.9 Year(s)-Intermittent; Lungs, Thorax, or Respiration: **Fibrosis, focal (pneumoconiosis)**; Lungs, Thorax, or Respiration: **Cough**; Lungs, Thorax, or Respiration: **Dyspnea**; Inhalation-Rat TCl₀ • 200 mg/kg; Lungs, Thorax, or Respiration: **Fibrosis, focal (Pneumoconiosis)**; Lungs, Thorax, or Respiration.

GHS Properties	Classification
Acute Toxicity	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
Aspiration Hazard	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
Carcinogenicity	EU/CLP • Data lacking OSHA HCS 2012 • Carcinogenicity 1A
Germ Cell Mutagenicity	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
Skin Corrosion/Irritation	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
Skin Sensitization	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
STOT-RE	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
STOT-SE	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
Toxicity for Reproduction	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
Respiratory Sensitization	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
Serious Eye Damage/Irritation	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking

Potential Health Effects

Inhalation

Acute (Immediate): Exposure to dust may cause irritation.

Chronic (Delayed): Inhalation of respirable dusts containing crystalline silica may cause lung injury or disease silicosis and/or cancer.

Skin Acute (Immediate): May cause abrasions.

Chronic (Delayed): No data available.

Eye Acute (Immediate): Exposure to dust may cause irritation.

Chronic (Delayed):	No data available.
Ingestion Acute (Immediate):	No known effects, however ingestion not recommended.
Chronic (Delayed):	No data available.
Carcinogenic Effects:	This product contains crystalline silica and/or quartz. IARC Monographs on Evaluation of Carcinogenic Risk of Chemicals to Humans (Monograph 68, 1997) concludes that there is sufficient evidence for the carcinogenicity of crystalline silica to humans (IARC Group I). Crystalline Silica is classified as a Known Carcinogen according to NTP.

Carcinogenic Effects			
	CAS	IARC	NTP
Crystalline Silica (SiO ₂)	14808-60-7	Group 1-Carcinogenic	Known Human Carcinogen

SECTION 12: ECOLOGICAL INFORMATION

This material is a naturally occurring mineral with no known Eco-Toxicity. It is insoluble in water and unlikely to contaminate waterways or food chains. Garnet does not contain rubber or plastic materials.

Independent laboratory Toxicity Characteristic Leaching Procedure (TCLP) testing for leachates has shown that this material is not a hazardous or toxic substance.

Persistence and degradability:	Data available
Bioaccumulative potential:	Data available
Mobility in soil:	Data available
Other adverse effects:	None known

SECTION 13: DISPOSAL CONSIDERATIONS

Disposal methods:	Dispose of content and packaging waste in accordance with local, state, or federal guidelines for disposal of inert solid waste, e.g. landfill disposal.
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MATERIAL CONTAMINATED OR REDUCED TO DUST IN USE MAY NEED SPECIAL HANDLING AND DISPOSAL. IT IS THE RESPONSIBILITY OF THE USER TO UNDERTAKE ANY EVALUATION CLASSIFICATION AND DISPOSAL OF MATERIAL AFTER USE

SECTION 14: TRANSPORT INFORMATION

UN Number:	None allocated.
UN Proper Shipping Name:	Not classified for transportation.
Transport Hazard Class:	Not classed as dangerous under the ADG Code.
Packing Group:	Not classified for transportation.
Environment Hazards:	Not classified as a marine pollutant. Does not meet the criteria of 2.9.3.3.1 "Environmentally hazardous substances (aquatic environment)".
Special precautions for user:	None necessary. It is recommended to keep bags closed and dry bulk loads covered to prevent dust generation and moisture incursion.
Hazchem Code:	None allocated.
Harmonized System code:	251320

SECTION 15: REGULATORY INFORMATION

Safety, health and environmental regulations/ legislation specific for the substance mixture:

MarineBlast™ is exempt from the obligation to register under REACH legislation (EC 1907/2006) Annex V 7.

This product is an inorganic substance and does not meet the criteria for PBT or vPvB in accordance with Annex XIII of REACH.

No known additional regulations for this product.

SECTION 16: OTHER INFORMATION

This SDS has been prepared by BlastOne International and complies with the Safe Work Australia Code of Practice on the Preparation of Safety Data Sheets for Hazardous Chemicals December 2011 and follows the Globally Harmonized System of Classification and Labelling of Chemicals (the GHS).

As per Worksafe Guidance Note NOHSC 3017, each user should review the information in the specific context of the intended application.

Disclaimer: The information in this SDS was obtained from sources that are believed to be reliable; however, the information is provided without any representation or warranty, express or implied, regarding its accuracy or correctness. The conditions or methods of handling, storage, use, and disposal of this product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage, or expense arising out of, or in any way connected with, the handling, storage, use or disposal of this product.

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