

GARNET MATERIALS SAFETY DATA SHEET

SECTION 1 - IDENTIFICATION OF SUBSTANCE

Material (Product) Name: Almandine Garnet/ Garnet Sand
Recommended Use: Sand Blasting, Industrial Abrasive Media, Blast Cleaning Abrasive, Water Jet Cutting Abrasive, Water Filtration, Aggregate, Surface Preparation.
Exporters Name: Ambika Enterprises, Bhilwara, Rajasthan.

SECTION 2 - COMPOSITION / INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS NUMBER	PROPORTION (% WEIGHT)
Almandine Garnet (Fe, Mg) ₃ Al ₂ (SiO ₄) ₃	1302-62-1	98.08%
Quartz	149040-68--2	< 0.44%
Others	--	<0.38%

SECTION 3 - HAZARDOUS IDENTIFICATION

Natural Minerals hence non-hazardous and Non-Dangerous Cargo according to criterion NOHSC: 1008(2004) Potential Health Effects.

SECTION 4 - HEALTH HAZARDS AND FIRST AID PROCEDURES

Swallowed: Nontoxic, there are no known adverse health effects resulting from minimal accidental ingestion likely to occur during normal handling by workers, absorption to larger amounts may cause irritation due to abrasiveness, first aid unlikely to be required, but if necessary wash mouth with clean water and ensure it is not swallowed, contact a qualified medical if any problem develops.

Eye: If dust, or any dose of this material meets the eyes it may have an immediate or delayed irritating effect resulting in redness & watering or an infection. It is not recommended to repeatedly allow this material to meet the eyes.

Skin: Any level of skin contact with this material may lead to immediate or delayed skin irritations, especially for people with sensitive skin, dermatitis or a skin infection. It is not recommended for people susceptible to skin irritations to allow this material to meet the skin.

Inhalation: Inhalation of large amounts of dust from this product may have an immediate or delayed effect to irritate, inflame or sensitize the nose, throat & lungs and exacerbate pre-existing ailments and

conditions such as asthma and bronchitis. Persistent inflammation of the lungs and pulmonary fibrosis. It is not recommended for people to repeatedly inhale this material.

SECTION 5 - STABILITY AND REACTIVITY DATA

Stability: Stable and inert material under normal and anticipated storage, handling and usage conditions

Polymerization: Polymerization cannot occur.

Incompatibility: None known

Hazardous Decomposition: Not Applicable

Hazardous Reactions: None known

SECTION 6 - FIRE FIGHTING MEASURES

Flammability: Non-flammable solid

Flashpoint: Not Applicable

General Hazard: This material is non-flammable and does not support combustion.

LEL: Non-Relevant

UEL: Non-Relevant

Extinguishing Media: Use appropriate extinguishing media for surrounding fire.

SECTION 7 - PHYSICAL AND CHEMICAL PROPERTIES

• PHYSICAL COMPOSITION

Melting Point	1260°C
Specific Gravity	4.12 g/cm ³ (H ₂ O = 1.0)
Bulk Density	2.31 g/cm ³
Solubility in Water	Insoluble
Appearance & Odor	Dark red, Dark Pink, & Traces of Black Garnet & no Odor
Physical State	Solid
Viscosity	Not Applicable
Boiling Point	Not Applicable
Vapour Density	Not Applicable
Hardness	7.5-8.0 Moh's scale
Grade Shape	Sharp and Sub-Angular

• CHEMICAL COMPOSITION

Al ₂ O ₃	77.44%
MgO	3.96%
CaO	1.86%
TiO ₂	0.09%
Fe ₂ O ₃	35.88%
LOI	0.82%
SiO ₂ (Total)	38.69%
MnO	0.16%
Chloride (PPM)	12
Total Dissolved Solids(PPM)	150

SECTION 8 - PERSONAL PROTECTION

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

Engineering Controls: Ensure the area for workers is adequately ventilated below exposure standards and provide sufficient local exhaust or mechanical (general) ventilation to maintain dust exposure limit below threshold limit value (TLV). Maintain ventilation and/or dust collection to reduce dust exposure to neighboring workers. Maintain a clean and safe work environment.

SECTION 9 - HANDLING AND STORAGE

None, however; Adopt good housekeeping and proper handling practices to reduce dust and approved hand, eye and respiratory protection when handling.

SECTION 10 - TOXIC INFORMATION

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

SECTION 11 - TRANSPORT

No special precautions necessary. It is recommended to keep bags closed and covered using tarpaulin or any sheet while transporting to avoid dust generation. Not classified as hazardous for transport under International Regulation for the Transport of dangerous goods. (CHIP, MDG, IATA, ADR, RID). DOT Classification: Not a DOT controlled Material (United States).

SECTION 12 - CONTROL MEASURES

Respiration Protection (Specific Type)

NIOSH/ MSHA – Approved Filters and Air Supplied Good for Blasters.

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

Protection Gloves: Leather gloves, caps and paper mask.

Eye Protection: Safety Glasses with side shields.

Other Protection: Normal safety protection is adopted

Work/ Hygienic Practice: Keep a Clean and safe work place and monitor work practice.

SECTION 13 - DISPOSAL PROCEDURES

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

SECTION 14 - REGULATION INFORMATION

This product is a natural and dry mineral and the material is collected from the specified mining zone. It is non-hazardous cargo and does not require any special precaution.

SECTION 15 - ENVIRONMENTAL INFORMATION

This product is a natural mineral with no known eco-toxicity, it is insoluble in water and very heavy. hence, should not contaminate waterways and food material. It also does not pose any danger to animal and plant life.

SECTION 16 - SPECIAL COMMENT & PRECAUTIONS

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

ABBREVIATIONS:

Mg/m³ – Milligram per cubic meter

NOHSC – National Occupational Health & Safety Commission

TLV – Threshold Limit Value

mS/m – Mille Siemens per meter

ppm – Parts per million

g/cm³ – Gram per cubic centimeter



SGM LABORATORY

Analysis & Research Centre

AN ISO 9001 : 2008 Certified Co.



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Specialist in : Metals, Minerals, Ores, Chemicals, Fertilizers, Soil, Oil and Water Analysis
(Sample Submitted by Party)

K/64007/2018

CETIFICATE OF ANALYSIS

24/03/2018

Ref. No. SGM/.....

Date :

(a) Name of Party	:	M/s. <i>Ambika Enterprises</i>
(b) Nature of Sample	:	<i>Garnet Sand (Marks :- 20 - 40)</i>
(c) Date of Receipt	:	<i>22/03/2018</i>

Result of Analysis

Average Chemical Composition

SiO ₂	=	38.69 %
Fe ₂ O ₃	=	35.88 %
Al ₂ O ₃	=	17.44 %
TiO ₂	=	0.09 %
MnO	=	0.16 %
CaO	=	1.86 %
MgO	=	3.96 %
LOI	=	0.82 %

Mineral Composition

Garnet	=	98.08 %
Quartz	=	0.44 %
Others	=	0.38 %

Physical Characteristics

Bulk Density	=	2.42gm/cc
Specific Gravity	=	4.12
Hardness(Moh)	=	7.04

For : SGM LABORATORY

Sample will be preserved up to 15 days from the date of submission of results

Particle Size Analysis (PSA) available (Malvern MASTER SIZER)