



# Technical data & Specification

**SG SUPERgarnet**



**PREMIUM GARNET**

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GENERAL DESCRIPTION	Almandite Garnet is a non-metallic mineral chemically stable and quite common in nature, well known for its tenacity, hardness and long lasting durability. The precedent characteristics make Garnet the ideal solution for most of the applications that interest the abrasives' area. Its high density as well as its strong resistance to chemical and abrasives agents, pave the way for its use in filtration.
CERTIFICATIONS	California Air resource board, MIL-A-22262B (SH), QPL-22262 - ISO11126-10 ISO14001-2004 / ISO9001:2008, TUV - SSPC - ARBC - US NAVY QPL22262
WATER SOLUBILITY	Garnet is not soluble in standard conditions [20°C, distilled water]
HARDNESS	7.5/8.0 measured by Mohs index
CHLORIDE CONTENT	<25,6 ppm -GRANTED
SPECIFIC GRAVITY	4,1
RELATIVE DENSITY	4.1 g/cm3
BULK DENSITY	145 lb/ft3
ACID SOLUBILITY (HCL)	<1%
MELTING POINT	1.315 °C
CONDUCTIVITY	< 250 µS/cm - GRANTED
FREE SILICA CONTENT	<1.0%
COLOUR	Intense red, red/brown, reddish pink, reddish brown
GRAIN SHAPE	Sub Angular
AVAILABLE GRAINS	From #12/40 to #120 mesh (US standard grain)
TYPICAL CHEMICAL ANALYSIS	SiO2 35% FeO 33% Al2O3 23% MgO 7% CaO 1% MnO 1% *specific analysis of each batch can be produced.
TYPICAL MINERALOGICAL COMPOSITION	Almandite 97-98% Ilmenite <1-2% Quarz (free Silica) <1.0% Others <0.5%

PACKAGING	MM	MESH	PERCENTAGE RETENTION - TRATTENUTO PERCENTUALE																	
			# 8/12	# 12/25	# 20/30	# 20/40	# 20/60	# 30/60	# 60	# 80	# 85	# 120								
SIEVE ANALYSIS [% RETAINED]	2,360	8	0																	
	1,700	12	0 - 3	0 - 0,1																
	1,400	14	10 - 21	0 - 1																
	1,000	18	70 - 85	12 - 25																
	0,850	20	0 - 7	30 - 45	0 - 2	0 - 0,8	0 - 1													
	0,600	30	0 - 3	30 - 50	60 - 80	25 - 45	7 - 15	0 - 2												
	0,425	40		3 - 11	20 - 40	40 - 60	25 - 40	12 - 22	0 - 0,2	,01 - ,15	0 - 0,4									
	0,355	45			ND	ND	ND	ND	ND	ND	0 - 1									
	0,300	50			0 - 4	0 - 10	35 - 55	45 - 65	20 - 35	10 - 20	3 - 12	0 - 0,1								
	0,250	60					3 - 10	5 - 20	40 - 55	30 - 40	7 - 17	0 - 0,3								
	0,212	70						0 - 3	0 - 10	15 - 30	30 - 40	10 - 20	8 - 15							
	0,180	80							0 - 5	0 - 5	7 - 15	12 - 25	40 - 52							
	0,150	100									ND	18 - 30	27 - 35							
	0,125	120									1 - 5	8 - 20	5 - 10							
	0,106	140										3 - 10	2 - 4							
	0,090	170										2 - 6	0,1 - 0,5							
	0,075	200										0 - 4								

## MATERIAL SECURITY NOTICE BOARD

RANGE OF APPLICATION	Stable non-metallic mineral with outstanding characteristics of tenacity, hardness and durability that indicates Garnet as preferential material in sectors as Abrasives, artisanal and industrial Sandblasting, production of abrasives stripes/discs or composed supports for polishing etc., productions of high performing cements and other special products for construction sites and similar, high retention filters, realization and finalization of new generation's athletic areas, synthetic fields for sportive use.....																														
DANGER EXPOSURE	<p>The material is classified as non-dangerous (Ce directive n. 1994/45)</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Chemical Element:</th> <th style="text-align: center;">TCLP LIMIT</th> <th style="text-align: center;">PRESENCE</th> </tr> <tr> <th></th> <th style="text-align: center;">mg/l</th> <th style="text-align: center;">mg/l</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">As</td> <td style="text-align: center;">5.0</td> <td style="text-align: center;">&lt;0.1</td> </tr> <tr> <td style="text-align: center;">Ba</td> <td style="text-align: center;">100</td> <td style="text-align: center;">&lt;2.0</td> </tr> <tr> <td style="text-align: center;">Cd</td> <td style="text-align: center;">1.0</td> <td style="text-align: center;">&lt;0.02</td> </tr> <tr> <td style="text-align: center;">Cr</td> <td style="text-align: center;">5.0</td> <td style="text-align: center;">&lt;0.05</td> </tr> <tr> <td style="text-align: center;">Pb</td> <td style="text-align: center;">5.0</td> <td style="text-align: center;">&lt;0.5</td> </tr> <tr> <td style="text-align: center;">Hg</td> <td style="text-align: center;">0.2</td> <td style="text-align: center;">&lt;0.001</td> </tr> <tr> <td style="text-align: center;">Se</td> <td style="text-align: center;">1.0</td> <td style="text-align: center;">&lt;0.1</td> </tr> <tr> <td style="text-align: center;">Ag</td> <td style="text-align: center;">5.0</td> <td style="text-align: center;">&lt;0.05</td> </tr> </tbody> </table> <p>EINECS number not applicable</p>	Chemical Element:	TCLP LIMIT	PRESENCE		mg/l	mg/l	As	5.0	<0.1	Ba	100	<2.0	Cd	1.0	<0.02	Cr	5.0	<0.05	Pb	5.0	<0.5	Hg	0.2	<0.001	Se	1.0	<0.1	Ag	5.0	<0.05
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POSSIBLE HAZARDS	<p>Specific chemical identification: OSHA PEL ACGIH. Other recommended limits in%: Garnet is a natural mixture of almandine [ Fe<sub>3</sub>Al<sub>2</sub>( SiO<sub>4</sub>)<sub>3</sub> ] with Mg and Mn in partial substitution of Fe in the precedent formula, other minerals occurring in non-relevant percentage.</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">SUBSTANCE</th> <th style="text-align: center;">%</th> <th style="text-align: left;">OSHA/ACGIH IN USE*</th> </tr> </thead> <tbody> <tr> <td>Disturbing Powder</td> <td style="text-align: center;">-</td> <td>15 mg/cu.m</td> </tr> <tr> <td>Inspirable Powder</td> <td style="text-align: center;">-</td> <td>5 mg/cu.m</td> </tr> <tr> <td>Cristalline Silica</td> <td style="text-align: center;">&lt;0.5%</td> <td>0.10 mg/cu.m</td> </tr> </tbody> </table> <p>*materials exceeding the former level require the use of protection masks.</p>	SUBSTANCE	%	OSHA/ACGIH IN USE*	Disturbing Powder	-	15 mg/cu.m	Inspirable Powder	-	5 mg/cu.m	Cristalline Silica	<0.5%	0.10 mg/cu.m																		
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FIRST AID MEASURES	In case the material comes in contact with eyes or skin it is sufficient an abundant washing with water to remove the eventual parts of powder.									
FIRE FIGHTING MEASURES	The bulk material has not fire exposure risks, the same regarding explosion risk.									
ACCIDENTAL RELEASE MEASURES	None. It is sufficient an accurate cleaning of the contaminated surfaces									
HANDLING	The material can be handled and stored with the normal suggestion of using gloves, protective masks and glasses.									
PERSONAL PROTECTION	<p>Any kind of limit value for exposition known. Recommended use of prevention measures to limit the exposition to the powders originating from the blasting operations. Normal use of gloves, protective glasses and dust masks. For professional exposure to the material see the list below:</p> <table border="0"> <tr> <td>Cancer Risk</td> <td>IARC</td> <td>OSHA</td> </tr> <tr> <td>Cristalline Silica</td> <td>No.42</td> <td>0.1 mg/m<sup>3</sup></td> </tr> <tr> <td>Content:</td> <td>-</td> <td>less than 0.5%</td> </tr> </table> <p>Recommended use of aspiration plants during blasting operations to lower the OSHA limit of inspirable powder.</p>	Cancer Risk	IARC	OSHA	Cristalline Silica	No.42	0.1 mg/m <sup>3</sup>	Content:	-	less than 0.5%
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Cristalline Silica	No.42	0.1 mg/m <sup>3</sup>								
Content:	-	less than 0.5%								
BREATHING PROTECTION	Recommended use of filters, dust masks and caps for sandblasting, local aspiration during blasting sessions.									
HANDS PROTECTION	Leather gloves or similar recommended.									
EYES PROTECTION	Glasses with lateral protection recommended.									
SKIN PROTECTION	Garnet is not an irritating material, suggested normal washing with water.									
ECOLOGICAL IMPACT	The dispersion of the material does not create any damage to the ecosystem, any particular measure of protection is needed but a good use of the common sense and the respect of the correct working practises.									
<b>PHYSICAL &amp; CHEMICAL PROPERTIES</b>										
GENERAL INFORMATIONS	The aspect is that of a mineral in granules, with a solid physical state, appearing intensely red - brown/red coloured.									
INFORMATIONS ON HUMAN HEALTH, SECURITY AND ECOLOGICAL IMPACT	Listed before									
<b>MATERIAL STABILITY AND REACTIVITY</b>										
GENERAL	The material is perfectly stable.									
CONDITIONS TO AVOID	Nothing to mention. Garnet is stable, solid and does not necessitate any particular pre-emptive considerations for its normal use.									
CONTACT WITH OTHER MATERIALS	NO dangerous interaction with other materials is known. NO decaying or polimerization.									
TOXICOLOGICAL INFORMATIONS	Typical syntoms of the exposition are irritation of eyes, breathing problems, and similar. No risks detected for ingestion. A longer exposure to powder could determine an increasing of precedent breathing illness. Garnet does not cause irritation in contact with skin or with eyes (if not in case of repeated contact)									

ECO TOXICITY	The material is not toxic for animals or aquatic plants, its mobility does not cause damages on the environment, but its persistence on the environment is not subject to degrade. Bio-accumulation potential not applicable.
WASTE MANAGEMENT	If considered as bulk Garnet has not any kind of prescription about its recycling or elimination. Due to the different activity in which the material is involved, by the way, the Customer will have to provide the identification of the particular kind of waste the material has become, according to D.L. n.22/98 and its modifications or integrations, as well as with other laws regarding waste management in the specific nation of activity.
INFORMATIONS ON TRANSPORTATION	U.N.O. number not applicable A.D.R. class: the material is not included in any class of danger. I.M.O. class: the material is not included in any class of danger.
LEGISLATIVE INFORMATIONS	Any reference is put on the label: denomination, product code and grain size.
REMARK	Please note that all the statements made before are valid on Garnet's original condition. The information until here given are referred only to the product sold under our trademark, these are reported at the better of our actual know-how and are meant only for an informational purpose, and are valid only under a correct technological use of the product itself. No kind of responsibility can be charged on IGM for any kind of accident happened to the buyer or third people due to an incorrect use of the product.