

**Section 1: Identification of the Substance/Mixture and of the Company/Undertaking****1.1 Product identifier****Product Name**                    **Garnet Abrasive Grains and Powders****Trade Names**                    **80 HPA****Synonyms**                        Almandine and Pyrope Garnet, Staurolite, Magnesium Silicate Blend**1.2 Relevant identified uses of the substance or mixture and uses advised against****Relevant identified use(s)** • Industrial Abrasives**1.3 Details of the supplier of the safety data sheet****Manufacturer**                    • Barton International  
Six Warren Street  
Glens Falls, NY 12801  
United States  
www.barton.com  
info@barton.com**Telephone (General)** • (800) 741 7756**Telephone (General)** • (518) 798 5462**1.4 Emergency telephone number****Manufacturer**                    • (518) 798 5462**Section 2: Hazards Identification****EU/EEC**

According to Regulation (EC) No 1272/2008 (CLP)/REACH 1907/2006 [amended by 453/2010]

According to EU Directive 67/548/EEC (DSD) or 1999/45/EC (DPD)

**2.1 Classification of the substance or mixture****CLP**                                 • Not classified**DSD/DPD**                        • Not classified**2.2 Label Elements****CLP****Hazard statements** • No label element(s) required**DSD/DPD****Risk phrases** • No label element(s) required**2.3 Other Hazards****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.

## United States (US)

According to OSHA 29 CFR 1910.1200 HCS

### 2.1 Classification of the substance or mixture

OSHA HCS 2012 • Non-Hazardous

### 2.2 Label elements

OSHA HCS 2012

#### WARNING



**Hazard statements** • May cause respiratory irritation – H335

#### Precautionary statements

**Prevention** • Obtain special instructions before use. - P201  
Do not handle until all safety precautions have been read and understood. - P202  
Wear protective gloves/protective clothing/eye protection/face protection. - P280

**Response** • IF exposed or concerned: Get medical advice/attention. - P308+P313

**Storage/Disposal** • Store locked up. - P405  
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations. - P501

### 2.3 Other hazards

OSHA HCS 2012 • Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

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## Canada

According to WHMIS

### 2.1 Classification of the substance or mixture

WHMIS • Non-Hazardous

### 2.2 Label elements

WHMIS



• May cause respiratory irritation

### 2.3 Other hazards

WHMIS • The mixture contains less than 0.1% of a regulated substance.

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## Section 3: Composition/Information on Ingredients

### 3.1 Substances

• Material does not meet the criteria of a substance in accordance with Regulation (EC) No 1272/2008.

## 3.2 Mixtures

Composition					
Chemical Name	Identifiers	%	LD50/LC50	Classifications According to Regulation/Directive	Comments
Almandine-Ferric Aluminum Silicate	CAS:1302-62-1	60-100%	NDA	EU DSD/DPD: Not Classified EU CLP: Not Classified OSHA HCS 2012: Not Classified	NDA
Staurolite	CAS:12182-56-8	0-40%	NDA	EU DSD/DPD: Not Classified EU CLP: Not Classified OSHA HCS 2012: Not Classified	NDA
Silicates – Amorphous* (* linked with magnesium in silicate form with less than 1% free silica)	CAS: 112926-00-8	0-21%	>1000 mg/kg	EU DSD/DPD: No hazards have been classified EU CLP: Not Classified OSHA HCS 2012: Carc. 2; STOT RE 1 (Lungs, Inhl)	NDA
Magnesium Oxide	CAS: 1309-48-4	0-13%	>1000 mg/kg	EU DSD/DPD: Not Classified EU CLP: Not Classified OSHA HCS 2012: Not Classified	NDA
Iron Oxide	CAS:1309-37-1	0-7%	>1000 mg/kg	EU DSD/DPD: Not Classified EU CLP: Not Classified OSHA HCS 2012: Not Classified	NDA
Total Quartz (non-respirable and respirable)	CAS:14808-60-7 EC Number:238-878-4	< 1.0%	NDA	EU DSD/DPD: Not Classified EU CLP: Not Classified OSHA HCS 2012: Not Classified	NDA
Respirable Quartz (<10 microns)	CAS:14808-60-7 EC Number:238-878-4	< 0.1% (trace-0.08%)	NDA	EU DSD/DPD: Self Classified: T; R48/20 EU CLP: Self Classified: STOT RE 1, H372 OSHA HCS 2012: Carc. 1A; STOT RE 1 (Lungs, Inhl)	NDA
Iron	CAS:7439-89-6 EC Number:231-096-4	trace to 0.2%	Ingestion/Oral-Rat LD50 • 750 mg/kg	EU DSD/DPD: Self Classified: Xn R22 Xi, R37 Xn R48/20 EU CLP: Self Classified: STOT SE 3: Resp. Irrit., H335; STOT RE 2 (Lungs, Liver), H373; Acute Tox. 4 (oral), H302 OSHA HCS 2012: STOT SE 3: Resp. Irrit.; STOT RE 2 (Lungs, Liver); Acute Tox 4 (oral)	NDA
Hornblende	CAS:12178-42-6	trace to 2.0%	NDA	EU DSD/DPD: Not Classified EU CLP: Not Classified OSHA HCS 2012: Not Classified	NDA
Feldspars	CAS:68476-25-5 EC Number:270-666-7	trace to 2.0%	NDA	EU DSD/DPD: Not Classified EU CLP: Not Classified OSHA HCS 2012: Not Classified	NDA

## Section 4: First Aid Measures

### 4.1 Description of first aid measures

- Inhalation**
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing. Get medical attention immediately.
- Skin**
- In case of contact with substance, immediately flush skin with running water for at least 20 minutes. Wash skin with soap and water.
- Eye**
- In case of contact with substance, immediately flush eyes with running water for at least 20 minutes. If eye irritation persists: Get medical advice/attention.
- Ingestion**
- Get medical attention if symptoms occur.

### 4.2 Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to Physician**

- 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: Firefighting Measures

### 5.1 Extinguishing media

**Suitable Extinguishing Media**

- In case of fire use media as appropriate for surrounding fire.

**Unsuitable Extinguishing Media**

- No data available.

### 5.2 Special hazards arising from the substance or mixture

**Unusual Fire and Explosion Hazards**

- None

**Hazardous Combustion Products**

- No data available.

### 5.3 Advice for firefighters

- Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

## Section 6: Accidental Release Measures

### 6.1 Personal precautions, protective equipment and emergency procedures

**Personal Precautions**

- Do not walk through spilled material. Wear appropriate Personal Protective Equipment (PPE)

**Emergency Procedures**

- As an immediate precautionary measure, isolate spill or leak area for at least 25 meters (75 feet) in all directions.

### 6.2 Environmental precautions

- Avoid run off to waterways and sewers.

### 6.3 Methods and material for containment and cleaning up

**Containment/Clean-up Measures**

- Avoid generating dust. Use wet-methods or vacuum up material for disposal or recovery.

### 6.4 Reference to other sections

- Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

## Section 7: Handling and Storage

### 7.1 Precautions for safe handling

- Handling**
- No special precautions necessary for normal handling of the material. Use only with adequate ventilation. Do not breathe dust. Wear appropriate personal protective equipment, avoid direct contact.

### 7.2 Conditions for safe storage, including any incompatibilities

- Storage**
- No special precautions necessary for normal storage of the material. Keep container/package tightly closed and in a well-ventilated place. Store locked up.

### 7.3 Specific end use(s)

- Refer to Section 1.2 - Relevant identified uses.

## Section 8: Exposure Controls/Personal Protection

### 8.1 Control parameters

Exposure Limits/Guidelines							
	Result	OSHA (US)	ACGIH	Argentina	Austria	Belgium	Chile
Quartz (14808-60-7)	TWAs	0.025 mg/m3 Action Level 0.05 mg/m3 TWA (respirable fraction)	0.025 mg/m3 TLV (respirable fraction)	0.05 mg/m3 TWA [CMP] (respirable fraction)	Not established	0.1 mg/m3 TWA (alveolar dust)	0.08 mg/m3 TWA LPP (respirable fraction)
	MAKs	Not established	Not established	Not established	0.15 mg/m3 TWA [TMW] (yearly average, valid till 12/31/2013, alveolar dust, respirable fraction)	Not established	Not established
Exposure Limits/Guidelines (Con't.)							
	Result	China	Czech Republic	Denmark	Finland	France	
Quartz (14808-60-7)	STELs	2 mg/m3 STEL (10%-50% free SiO <sub>2</sub> , total dust); 1.4 mg/m3 STEL (50%-80% free SiO <sub>2</sub> , total dust); 1 mg/m3 STEL (containing >80% free SiO <sub>2</sub> , total dust); 1.4 mg/m3 STEL (10%-50% free SiO <sub>2</sub> , respirable dust); 0.6 mg/m3 STEL (50%-80% free SiO <sub>2</sub> , respirable dust); 0.4 mg/m3 STEL (containing >80% free SiO <sub>2</sub> , respirable dust)	Not established	Not established	Not established	Not established	Not established
	TWAs	0.7 mg/m3 TWA (containing 50-80% free SiO <sub>2</sub> , total dust); 0.3 mg/m3 TWA (containing 50-80% free SiO <sub>2</sub> , respirable dust); 1 mg/m3 TWA (containing 10-50% free SiO <sub>2</sub> , total dust); 0.7 mg/m3 TWA (containing 10-50% free SiO <sub>2</sub> , respirable dust); 0.5 mg/m3 TWA (containing >80% free SiO <sub>2</sub> , total dust); 0.2 mg/m3 TWA (containing >80% free SiO <sub>2</sub> , respirable dust)	0.1 mg/m3 TWA (dust)	0.3 mg/m3 TWA (total); 0.1 mg/m3 TWA (respirable)	0.05 mg/m3 TWA (respirable, listed under Silicon dioxide, crystalline)	0.1 mg/m3 TWA [VME] (restrictive limit, alveolar fraction)	
Exposure Limits/Guidelines (Con't.)							
	Result	Indonesia	Korea	Mexico	Netherlands	New Zealand	
Iron (7439-89-6)	TWAs	1 mg/m3 TWA	Not established	Not established	Not established	Not established	Not established

Quartz (14808-60-7)	TWAs	0.1 mg/m3 TWA (respirable particulate)	0.05 mg/m3 TWA (respirable fraction, Serial No. 251)	0.1 mg/m3 TWA LMPE-PPT (respirable fraction)	0.075 mg/m3 TWA (respirable dust, listed under Silicium dioxide)	0.2 mg/m3 TWA (respirable dust)
Exposure Limits/Guidelines (Con't.)						
	Result	NIOSH	Norway	Poland	Russia	Slovak Republic
Iron (7439-89-6)	TWAs	Not established	Not established	Not established	10 mg/m3 TWA (aerosol)	6.0 mg/m3 TWA (total aerosol)
Quartz (14808-60-7)	TWAs	0.05 mg/m3 TWA (respirable dust)	0.3 mg/m3 TWA (Dust containing alpha.-Quartz, Cristobalite and/or Tridymite is evaluated by summation formula, total dust); 0.1 mg/m3 TWA (Dust containing .alpha.- Quartz, Cristobalite and/or Tridymite is evaluated by summation formula, respirable dust)	2 mg/m3 TWA [NDS] (>50% free crystalline silica, total inhalable dust); 0.3 mg/m3 TWA [NDS] (>50% free crystalline silica, respirable dust); 4.0 mg/m3 TWA [NDS] (2% to 50% free crystalline silica, total inhalable dust); 1.0 mg/m3 TWA [NDS] (2% to 50% free crystalline silica, respirable dust)	1 mg/m3 TWA (disintegration aerosol, listed under Silicon dioxide amorphous and vitreous)	0.1 mg/m3 TWA (in Cristobalite or Tridymite, total aerosol)  0.1 mg/m3 TWA
	STELs	Not established	Not established	Not established	3 mg/m3 STEL (disintegration aerosol, listed under Amorphous and crystalline silicon dioxide)	0.5 mg/m3 STEL
Exposure Limits/Guidelines (Con't.)						
	Result	Spain	Sweden	Switzerland	United Kingdom	Venezuela
Quartz (14808-60-7)	MAKs	Not established	Not established	0.15 mg/m3 TWA [MAK] (respirable)	Not established	Not established
	STELs	Not established	Not established	Not established	0.3 mg/m3 STEL (calculated, respirable)	Not established
	TWAs	0.1 mg/m3 TWA [VLA-ED] (reclassified IARC group 2A to group 1, respirable fraction)	0.1 mg/m3 LLV (respirable dust)	Not established	0.1 mg/m3 TWA (respirable)	0.05 mg/m3 TWA [CAP]

### Exposure Control Notations

#### Switzerland

•Quartz (14808-60-7): **Carcinogens:** (Category C1 carcinogen) | **Developmental Risk Groups:** (Developmental Risk Group C (listed under Silicon dioxide, crystalline))

#### Norway

•Quartz (14808-60-7): **Carcinogens:** (Carcinogen)

#### Argentina

•Quartz (14808-60-7): **Carcinogens:** (A2 - Suspected human carcinogen)

#### Venezuela

•Quartz (14808-60-7): **Ceilings:** (A2 - Alleged Carcinogen in Humans)

#### Germany DFG

•Quartz (14808-60-7): **Carcinogens:** (Category 1 (causes cancer in man, alveola fraction))

### Exposure Limits Supplemental

#### Spain

•Quartz (14808-60-7): **Under Review:** (0.05 mg/m3 VLA-ED; reclassified by IARC from group 2A possible human carcinogen to group 1 human carcinogen; (respirable fraction))

## 8.2 Exposure controls

- Engineering Measures/Controls**
- Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Maintain good housekeeping standards and do not allow this material to accumulate in areas where it can be re-suspended in air. Clean up spills and dispose of properly.

### Personal Protective Equipment

- Respiratory**
- For limited exposure use an N95 dust mask. For prolonged exposure use an air-purifying respirator with high efficiency particulate air (HEPA) filters. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced.
- Eye/Face**
- Wear safety glasses.
- Skin/Body**
- Wear protective clothing and gloves.
- Environmental Exposure Controls**
- Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways. Follow best practice for site management and disposal of waste.

#### Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene	PEL = Permissible Exposure Level determined by the Occupational Safety and Health Administration (OSHA)
LLV = Limit Level Value is the exposure limit for 8-hour work day	STEL = Short Term Exposure Limits are based on 15-minute exposures
MAK = Maximale Arbeitsplatz Konzentration is the maximum permissible concentration	STEV = Short Term Exposure Value
MAC = Maximum Allowable Concentration	TLV = Threshold Limit Value determined by the American Conference of Governmental Industrial Hygienists (ACGIH)
NIOSH = National Institute of Occupational Safety and Health	TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures
OSHA = Occupational Safety and Health Administration	

## Section 9: Physical and Chemical Properties

### 9.1 Information on Physical and Chemical Properties

Material Description			
Physical Form	Solid	Appearance/Description	Reddish brown to pink grains with no odor.
Color	Reddish brown to pink.	Odor	Odorless
Particulate Size	Varies upon customer demand	Odor Threshold	Data lacking
General Properties			
Boiling Point	Data lacking	Melting Point	1315 C (2399 F)
Decomposition Temperature	> 750 C (> 1382 F)	pH	Not relevant
Specific Gravity/Relative Density	4.1 Water=1	Bulk Density	2.4 g/cm <sup>3</sup>
Water Solubility	Insoluble	Viscosity	Data lacking
Explosive Properties	Non-explosive	Oxidizing Properties:	Data lacking
Volatility			
Vapor Pressure	Not relevant	Vapor Density	Not relevant
Evaporation Rate	Not relevant	VOC (Wt.)	Not relevant
Flammability			
Flash Point	Not relevant	UEL	Not relevant
LEL	Not relevant	Autoignition	Data lacking
Flammability (solid, gas)	Non-flammable		

<b>Environmental</b>			
Octanol/Water Partition coefficient	Data lacking		

## 9.2 Other Information

- No additional physical and chemical parameters noted.

## Section 10: Stability and Reactivity

### 10.1 Reactivity

- No dangerous reaction known under conditions of normal use.

### 10.2 Chemical stability

- Stable

### 10.3 Possibility of hazardous reactions

- Hazardous polymerization will not occur.

### 10.4 Conditions to avoid

- No data available.

### 10.5 Incompatible materials

- None known.

### 10.6 Hazardous decomposition products

- None known.

## Section 11: Toxicological Information

### 11.1 Information on toxicological effects

Components		
Iron (0.01% TO 0.2%)	7439-89-6	<b>Acute Toxicity:</b> Ingestion/Oral-Rat LD50 • 750 mg/kg; <b>Blood:Changes in serum composition (e.g., TP, bilirubin cholesterol); Biochemical:Enzyme inhibition, induction, or change in blood or tissue levels:Transaminases</b>
Respirable Quartz (< 0.1%)	14808-60-7	<b>Acute Toxicity:</b> Inhalation-Human TClO • 16 mppcf 8 Hour(s) 17.9 Year(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Fibrosis, focal (pneumoconiosis); Lungs, Thorax, or Respiration:Cough; Lungs, Thorax, or Respiration:Dyspnea;</i> Inhalation-Rat TClO • 200 mg/kg; <i>Lungs, Thorax, or Respiration:Fibrosis, focal (pneumoconiosis); Lungs, Thorax, or Respiration:Other changes; Nutritional and Gross Metabolic:Changes in Chemistry or Temperature:Fe;</i> <b>Multi-dose Toxicity:</b> Inhalation-Hamster TClO • 3 mg/m <sup>3</sup> 6 Hour(s) 78 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Fibrosis (interstitial); Lungs, Thorax, or Respiration:Changes in lung weight;</i> Inhalation-Rat TClO • 6.2 mg/m <sup>3</sup> 6 Hour(s) 6 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Other changes; Blood:Changes in spleen; Immunological Including Allergic:Increase in cellular immune response;</i> Inhalation-Rat TClO • 80 mg/m <sup>3</sup> 26 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Fibrosis, focal (pneumoconiosis); Blood:Changes in spleen; Immunological Including Allergic:Decrease in cellular immune response;</i> <b>Tumorigen / Carcinogen:</b> Inhalation-Rat TClO • 50 mg/m <sup>3</sup> 6 Hour(s) 71 Week(s)-Intermittent; <i>Tumorigenic:Carcinogenic by RTECS criteria; Liver:Tumors</i>

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 above applicable regulatory PEL's may cause lung injury or disease including 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

- May cause cancer. This product contains crystalline silica as 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
Respirable Quartz	14808-60-7	Group 1-Carcinogenic	Known Human Carcinogen

#### Key to abbreviations

LD = Lethal Dose

TC = Toxic Concentration

## Section 12: Ecological Information

### 12.1 Toxicity

- Material data lacking.

## 12.2 Persistence and degradability

- Material data lacking.

## 12.3 Bioaccumulative potential

- Material data lacking.

## 12.4 Mobility in Soil

- Material data lacking.

## 12.5 Results of PBT and vPvB assessment

- No PBT and vPvB assessment has been conducted.

## 12.6 Other adverse effects

- No studies have been found.

## Section 13: Disposal Considerations

### 13.1 Waste treatment methods

**Product waste** • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

**Packaging waste** • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

## Section 14: Transport Information

	14.1 UN number	14.2 UN proper shipping name	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards
DOT	NDA	Not Regulated	NDA	NDA	NDA
TDG	NDA	Not Regulated	NDA	NDA	NDA
IMO/IMDG	NDA	Not Regulated	NDA	NDA	NDA
IATA/ICAO	NDA	Not Regulated	NDA	NDA	NDA

**14.6 Special precautions for user** • None specified.

**14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** • Data lacking.

## Section 15: Regulatory Information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

#### SARA Hazard Classifications

- Acute

Inventory						
Component	CAS	Canada DSL	Canada NDSL	China	EU EINECS	EU ELNICS
Almandine-Ferric Aluminum Silicate	1302-62-1	No	No	No	No	No
Feldspars	68476-25-5	No	Yes	Yes	Yes	No
Hornblende	12178-42-6	No	No	No	No	No
Iron	7439-89-6	Yes	No	Yes	Yes	No
Staurolite	12182-56-8	Yes	No	Yes	Yes	No
Silicates – Amorphous	112926-00-8	Yes	No	Yes	No	No
Magnesium Oxide	1309-48-4	Yes	No	Yes	Yes	No
Iron Oxide	1309-37-1	Yes	No	Yes	Yes	No

Quartz	14808-60-7	Yes	No	Yes	Yes	No
Inventory (Con't.)						
Component	CAS	Korea KECL		New Zealand		TSCA*
Almandine-Ferric Aluminum Silicate	1302-62-1	No		Yes		No
Feldspars	68476-25-5	Yes		Yes		Yes
Hornblende	12178-42-6	No		No		No
Iron	7439-89-6	Yes		Yes		Yes
Staurolite	12182-56-8	Yes		NA		Yes
Silicates – Amorphous	112926-00-8	Yes		NA		Yes
Magnesium Oxide	1309-48-4	Yes		NA		Yes
Iron Oxide	1309-37-1	Yes		NA		Yes
Quartz	14808-60-7	Yes		Yes		Yes

Note: Almandine-Ferric Aluminum Silicate (Garnet) and minor constituents are naturally occurring minerals and therefore are exempted from TSCA regulations in accordance with 710.4(b)(1).

## Canada

### Labor

#### Canada - WHMIS - Classifications of Substances

•Iron	7439-89-6	Uncontrolled product according to WHMIS classification criteria
•Feldspars	68476-25-5	Not Listed
•Almandine-Ferric Aluminum Silicate	1302-62-1	Not Listed
•Quartz	14808-60-7	D2A (In certain cases, this classification does not apply. For more information, consult the section Substance Specific Issues - Silica, crystalline, encapsulated on Health Canada's WHMIS Division website.)
•Hornblende	12178-42-6	Not Listed
•Staurolite	12182-56-8	Not Listed
•Silicates – Amorphous	112926-00-8	Not Listed
•Magnesium Oxide	1309-48-4	Not Listed
•Iron Oxide	1309-37-1	Not Listed

#### Canada - WHMIS - Ingredient Disclosure List

•Iron	7439-89-6	Not Listed
•Feldspars	68476-25-5	Not Listed
•Almandine-Ferric Aluminum Silicate	1302-62-1	Not Listed
•Quartz	14808-60-7	1 %
•Hornblende	12178-42-6	Not Listed
•Staurolite	12182-56-8	Not Listed
•Silicates – Amorphous	112926-00-8	Not Listed
•Magnesium Oxide	1309-48-4	Not Listed
•Iron Oxide	1309-37-1	Not Listed

### Environment

#### Canada - CEPA - Priority Substances List

•Iron	7439-89-6	Not Listed
•Feldspars	68476-25-5	Not Listed
•Almandine-Ferric Aluminum Silicate	1302-62-1	Not Listed
•Quartz	14808-60-7	Not Listed
•Hornblende	12178-42-6	Not Listed
•Staurolite	12182-56-8	Not Listed
•Silicates – Amorphous	112926-00-8	Not Listed
•Magnesium Oxide	1309-48-4	Not Listed
•Iron Oxide	1309-37-1	Not Listed

## Mexico

### Environment

#### Mexico - Ecological Criteria for Water Quality - Agricultural Irrigation

•Iron	7439-89-6	5.0 mg/L
•Feldspars	68476-25-5	Not Listed
•Almandine-Ferric Aluminum Silicate	1302-62-1	Not Listed
•Quartz	14808-60-7	Not Listed
•Hornblende	12178-42-6	Not Listed
•Silicates – Amorphous	112926-00-8	Not Listed
•Staurolite	12182-56-8	Not Listed
•Magnesium Oxide	1309-48-4	Not Listed
•Iron Oxide	1309-37-1	Not Listed

#### Mexico - Ecological Criteria for Water Quality - Drinking Water Supply Source

•Iron	7439-89-6	0.3 mg/L
•Feldspars	68476-25-5	Not Listed
•Almandine-Ferric Aluminum Silicate	1302-62-1	Not Listed
•Quartz	14808-60-7	Not Listed
•Hornblende	12178-42-6	Not Listed
•Staurolite	12182-56-8	Not Listed
•Silicates – Amorphous	112926-00-8	Not Listed
•Magnesium Oxide	1309-48-4	Not Listed
•Iron Oxide	1309-37-1	Not Listed

#### Mexico - Ecological Criteria for Water Quality - Protection of Fresh Water Aquatic Life

•Iron	7439-89-6	1.0 mg/L
•Feldspars	68476-25-5	Not Listed
•Almandine-Ferric Aluminum Silicate	1302-62-1	Not Listed
•Quartz	14808-60-7	Not Listed
•Hornblende	12178-42-6	Not Listed
•Staurolite	12182-56-8	Not Listed
•Silicates – Amorphous	112926-00-8	Not Listed
•Magnesium Oxide	1309-48-4	Not Listed
•Iron Oxide	1309-37-1	Not Listed

#### Mexico - Ecological Criteria for Water Quality - Protection of Marine Water Aquatic Life

•Iron	7439-89-6	0.05 mg/L
•Feldspars	68476-25-5	Not Listed
•Almandine-Ferric Aluminum Silicate	1302-62-1	Not Listed
•Quartz	14808-60-7	Not Listed
•Hornblende	12178-42-6	Not Listed
•Staurolite	12182-56-8	Not Listed
•Silicates – Amorphous	112926-00-8	Not Listed
•Magnesium Oxide	1309-48-4	Not Listed
•Iron Oxide	1309-37-1	Not Listed

## United States

### Labor

#### U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals

•Iron	7439-89-6	Not Listed
•Feldspars	68476-25-5	Not Listed
•Almandine-Ferric Aluminum Silicate	1302-62-1	Not Listed
•Quartz	14808-60-7	Not Listed
•Hornblende	12178-42-6	Not Listed
•Staurolite	12182-56-8	Not Listed
•Silicates – Amorphous	112926-00-8	Not Listed
•Magnesium Oxide	1309-48-4	Not Listed
•Iron Oxide	1309-37-1	Not Listed

#### U.S. - OSHA - Specifically Regulated Chemicals

•Iron	7439-89-6	Not Listed
•Feldspars	68476-25-5	Not Listed
•Almandine-Ferric Aluminum Silicate	1302-62-1	Not Listed
•Quartz	14808-60-7	Not Listed
•Hornblende	12178-42-6	Not Listed

•Staurolite	12182-56-8	Not Listed
•Silicates – Amorphous	112926-00-8	Not Listed
•Magnesium Oxide	1309-48-4	Not Listed
•Iron Oxide	1309-37-1	Not Listed

## Environment

### U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants

•Iron	7439-89-6	Not Listed
•Feldspars	68476-25-5	Not Listed
•Almandine-Ferric Aluminum Silicate	1302-62-1	Not Listed
•Quartz	14808-60-7	Not Listed
•Hornblende	12178-42-6	Not Listed
•Staurolite	12182-56-8	Not Listed
•Silicates – Amorphous	112926-00-8	Not Listed
•Magnesium Oxide	1309-48-4	Not Listed
•Iron Oxide	1309-37-1	Not Listed

### U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

•Iron	7439-89-6	Not Listed
•Feldspars	68476-25-5	Not Listed
•Almandine-Ferric Aluminum Silicate	1302-62-1	Not Listed
•Quartz	14808-60-7	Not Listed
•Hornblende	12178-42-6	Not Listed
•Staurolite	12182-56-8	Not Listed
•Silicates – Amorphous	112926-00-8	Not Listed
•Magnesium Oxide	1309-48-4	Not Listed
•Iron Oxide	1309-37-1	Not Listed

### U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities

•Iron	7439-89-6	Not Listed
•Feldspars	68476-25-5	Not Listed
•Almandine-Ferric Aluminum Silicate	1302-62-1	Not Listed
•Quartz	14808-60-7	Not Listed
•Hornblende	12178-42-6	Not Listed
•Staurolite	12182-56-8	Not Listed
•Silicates – Amorphous	112926-00-8	Not Listed
•Magnesium Oxide	1309-48-4	Not Listed
•Iron Oxide	1309-37-1	Not Listed

### U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

•Iron	7439-89-6	Not Listed
•Feldspars	68476-25-5	Not Listed
•Almandine-Ferric Aluminum Silicate	1302-62-1	Not Listed
•Quartz	14808-60-7	Not Listed
•Hornblende	12178-42-6	Not Listed
•Staurolite	12182-56-8	Not Listed
•Silicates – Amorphous	112926-00-8	Not Listed
•Magnesium Oxide	1309-48-4	Not Listed
•Iron Oxide	1309-37-1	Not Listed

### U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

•Iron	7439-89-6	Not Listed
•Feldspars	68476-25-5	Not Listed
•Almandine-Ferric Aluminum Silicate	1302-62-1	Not Listed
•Quartz	14808-60-7	Not Listed
•Hornblende	12178-42-6	Not Listed
•Staurolite	12182-56-8	Not Listed
•Silicates – Amorphous	112926-00-8	Not Listed
•Magnesium Oxide	1309-48-4	Not Listed
•Iron Oxide	1309-37-1	Not Listed

### U.S. - CERCLA/SARA - Section 313 - Emission Reporting

•Iron	7439-89-6	Not Listed
•Feldspars	68476-25-5	Not Listed
•Almandine-Ferric Aluminum Silicate	1302-62-1	Not Listed
•Quartz	14808-60-7	Not Listed
•Hornblende	12178-42-6	Not Listed

•Staurolite	12182-56-8	Not Listed
•Silicates – Amorphous	112926-00-8	Not Listed
•Magnesium Oxide	1309-48-4	Not Listed
•Iron Oxide	1309-37-1	Not Listed
<b>U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing</b>		
•Iron	7439-89-6	Not Listed
•Feldspars	68476-25-5	Not Listed
•Almandine-Ferric Aluminum Silicate	1302-62-1	Not Listed
•Quartz	14808-60-7	Not Listed
•Hornblende	12178-42-6	Not Listed
•Staurolite	12182-56-8	Not Listed
•Silicates – Amorphous	112926-00-8	Not Listed
•Magnesium Oxide	1309-48-4	Not Listed
•Iron Oxide	1309-37-1	Not Listed

## United States - California

### Environment

#### U.S. - California - Proposition 65 - Carcinogens List

•Iron	7439-89-6	Not Listed
•Feldspars	68476-25-5	Not Listed
•Almandine-Ferric Aluminum Silicate	1302-62-1	Not Listed
•Quartz	14808-60-7	carcinogen, initial date 10/1/88 (airborne particles of respirable size)
•Hornblende	12178-42-6	Not Listed
•Staurolite	12182-56-8	Not Listed
•Silicates – Amorphous	112926-00-8	Not Listed
•Magnesium Oxide	1309-48-4	Not Listed
•Iron Oxide	1309-37-1	Not Listed

#### U.S. - California - Proposition 65 - Developmental Toxicity

•Iron	7439-89-6	Not Listed
•Feldspars	68476-25-5	Not Listed
•Almandine-Ferric Aluminum Silicate	1302-62-1	Not Listed
•Quartz	14808-60-7	Not Listed
•Hornblende	12178-42-6	Not Listed
•Staurolite	12182-56-8	Not Listed
•Silicates – Amorphous	112926-00-8	Not Listed
•Magnesium Oxide	1309-48-4	Not Listed
•Iron Oxide	1309-37-1	Not Listed

#### U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)

•Iron	7439-89-6	Not Listed
•Feldspars	68476-25-5	Not Listed
•Almandine-Ferric Aluminum Silicate	1302-62-1	Not Listed
•Quartz	14808-60-7	Not Listed
•Hornblende	12178-42-6	Not Listed
•Staurolite	12182-56-8	Not Listed
•Silicates – Amorphous	112926-00-8	Not Listed
•Magnesium Oxide	1309-48-4	Not Listed
•Iron Oxide	1309-37-1	Not Listed

#### U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)

•Iron	7439-89-6	Not Listed
•Feldspars	68476-25-5	Not Listed
•Almandine-Ferric Aluminum Silicate	1302-62-1	Not Listed
•Quartz	14808-60-7	Not Listed
•Hornblende	12178-42-6	Not Listed
•Staurolite	12182-56-8	Not Listed
•Silicates – Amorphous	112926-00-8	Not Listed
•Magnesium Oxide	1309-48-4	Not Listed
•Iron Oxide	1309-37-1	Not Listed

#### U.S. - California - Proposition 65 - Reproductive Toxicity - Female

•Iron	7439-89-6	Not Listed
•Feldspars	68476-25-5	Not Listed

•Almandine-Ferric Aluminum Silicate	1302-62-1	Not Listed
•Quartz	14808-60-7	Not Listed
•Hornblende	12178-42-6	Not Listed
•Staurolite	12182-56-8	Not Listed
•Silicates – Amorphous	112926-00-8	Not Listed
•Magnesium Oxide	1309-48-4	Not Listed
•Iron Oxide	1309-37-1	Not Listed
<b>U.S. - California - Proposition 65 - Reproductive Toxicity - Male</b>		
•Iron	7439-89-6	Not Listed
•Feldspars	68476-25-5	Not Listed
•Almandine-Ferric Aluminum Silicate	1302-62-1	Not Listed
•Quartz	14808-60-7	Not Listed
•Hornblende	12178-42-6	Not Listed
•Staurolite	12182-56-8	Not Listed
•Silicates – Amorphous	112926-00-8	Not Listed
•Magnesium Oxide	1309-48-4	Not Listed
•Iron Oxide	1309-37-1	Not Listed

## 15.2 Chemical Safety Assessment

- No Chemical Safety Assessment has been carried out.

## 15.3 Other Information

- WARNING: This product contains a chemical known to the State of California to cause cancer.

## Section 16: Other Information

### Relevant Phrases (code & full text)

- H335 - May cause respiratory irritation
- H302 - Harmful if swallowed
- H372 - Causes damage to organs through prolonged or repeated exposure.
- H373 - May cause damage to organs through prolonged or repeated exposure.
- R22 - Harmful if swallowed.
- R37 - Irritating to respiratory system.
- R48/20 - Harmful: danger of serious damage to health by prolonged exposure through inhalation.

### Last Revision Date

- 28/June/2017

### Preparation Date

- 19/August/2014

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### Key to abbreviations

NDA = No Data Available