Safety Data Sheet (SDS)
Vampire Abrasives: Garnet

SECTION 1. IDENTIFICATION
Product Identifier: SDS No. 0030 rev2
Name: Garnet Sand IG
Other Identification: Garnet Andradite
Recommended Use: Abrasive jet cutting, abrasive blasting and filtration sand.
Restrictions on Use: Use only as directed.
Manufacturer / Supplier: Hillcrest Industries
40 Favor Street, Attica, New York 14011

Emergency Phone No. CHEMTREC (Canada & USA), 1-800-424-9300, 24 hours
CHEMTREC, (outside North America), 1-703-527-3887, 24 hours

SECTION 2. HAZARDS IDENTIFICATION
Classification of the substance or mixture
Regulation (EC) No. 1272/2008 (CLP)
Hazard category: None
Hazard statement: None

Hazard characteristics: None
R-Phrases: None
For full text of R-phrases, see section 16.
Label elements
Hazard pictograms: None
Signal word: None
Hazard statements: May cause cancer or damage to respiratory system through prolonged or repeated exposure by inhalation.
Precautionary statements: None
Other hazards: Dust may cause irritation. Spilled material is slippery.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>%</th>
<th>Other Identifiers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium metasilicate</td>
<td>13983-17-0</td>
<td>5-25</td>
<td>CaSiO₃</td>
</tr>
<tr>
<td>Goldmanite</td>
<td></td>
<td>25-50</td>
<td>Ca₃(FeV³⁺₂⁺,Al₃⁺₂SiO₁₂)</td>
</tr>
<tr>
<td>Andradite</td>
<td>15078-96-3</td>
<td>40-75</td>
<td>Ca₃Fe₂⁺₂⁺SiO₁₂</td>
</tr>
<tr>
<td>Aluminum oxide</td>
<td>1344-28-1</td>
<td>1-5</td>
<td>Al₂O₃</td>
</tr>
<tr>
<td>Manganese oxide</td>
<td>1317-35-7</td>
<td>1-3</td>
<td>MnO</td>
</tr>
<tr>
<td>Magnesium oxide</td>
<td>1309-48-4</td>
<td>1-3</td>
<td>MgO</td>
</tr>
<tr>
<td>Titanium Dioxide</td>
<td>13463-67-7</td>
<td>1-3</td>
<td>TiO₂</td>
</tr>
<tr>
<td>Zirconium oxide</td>
<td>1314-23-4</td>
<td>1-3</td>
<td>ZrO₂</td>
</tr>
<tr>
<td>Silica, crystalline quartz</td>
<td>14808-60-7</td>
<td>&lt;1</td>
<td>SiO₂</td>
</tr>
</tbody>
</table>

SECTION 4. FIRST-AID MEASURES
Description of first aid measures:
Inhalation: Move to fresh air. If experiencing respiratory symptoms (e.g. coughing, shortness of breath, wheezing), call a Poison Center or doctor.
Skin Contact: Wash gently and thoroughly with lukewarm, gently flowing water and mild soap for 5 minutes.
Eye Contact: Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open. If eye irritation persists, get medical advice/attention.
Ingestion: Never give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing. Do not induce vomiting. Call a Poison Centre or doctor if you feel unwell or are concerned.

Most Important Symptoms and Effects, Acute and Delayed
Acute: Irritation and redness of eyes. Coughing and shortness of breath.
Delayed: Skin, eye, or respiratory tract irritation
Target Organs: Respiratory system.
Identification of any immediate medical attention and special treatment: Treat symptomatically.

HILLCREST INDUSTRIES INC. 40 Favor St. / Attica, NY 14011
585-591-1182
www.hillcrestcoatings.com
SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media:
- Suitable Extinguishing Media
  Not combustible. Use extinguishing agent suitable for surrounding fire.
- Unsuitable Extinguishing Media
  Not applicable.

Specific Hazards Arising from the Chemical:
- Does not burn.
- This product presents no unusual hazards in a fire situation.
- Not known to generate any hazardous decomposition products in a fire.

Special Protective Equipment and Precautions for Fire-fighters:
- No special precautions are necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures:
- Use the personal protective equipment recommended in Section 8 of this safety data sheet. Review Section 7 (Handling) of this safety data sheet before proceeding with clean-up.

Environmental Precautions:
- Although this product is not classified as an environmentally hazardous material, large or frequent spills may cause potential problems.

Methods and Materials for Containment and Cleaning Up:
- Avoid generating dust. Collect using shovel/scoop or approved HEPA vacuum and place in a suitable container for disposal.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling:
- Avoid generating dusts. Wear personal protective equipment to avoid direct contact with this material.

Conditions for Safe Storage:
- Store in an area that is dry.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>AIHA WEL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TWA</td>
<td>STEL</td>
<td>TWA</td>
</tr>
<tr>
<td>Silica, amorphous</td>
<td></td>
<td></td>
<td>6 mg/m³</td>
</tr>
<tr>
<td>Iron Oxide</td>
<td>5 mg/m³ A4</td>
<td></td>
<td>10 mg/m³</td>
</tr>
<tr>
<td>Calcium oxide, reacted</td>
<td>2 mg/m³</td>
<td></td>
<td>5 mg/m³</td>
</tr>
<tr>
<td>Aluminum oxide</td>
<td>1 mg/m³ A4</td>
<td></td>
<td>5 mg/m³</td>
</tr>
<tr>
<td>Manganese oxide</td>
<td>0.2 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magnesium oxide</td>
<td>10 mg/m³ A4</td>
<td></td>
<td>15 mg/m³</td>
</tr>
<tr>
<td>Titanium Dioxide</td>
<td>10 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zirconium oxide</td>
<td>10 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silica, crystalline quartz</td>
<td>0.025 mg/m³ A2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Andradite</td>
<td>5 mg/m³</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* respirable total dust, OSHA (PEL)= 15 mg/m³ crystalline Silica, ACGIH, TWA, 0.10 mg / m³ (ACGIH), 0.025 mg /m³, respirable.

Biological limit values: No data

DNEL/PNEC-values: No data

Exposure controls

Appropriate engineering controls: Adequate dust ventilation required.

Personal protective equipment

Hand protection: Gloves if desired
Eye protection: Goggles if desired.
Body protection: Clean clothing to cover skin.
Respiratory protection: Approved NIOSH dust mask if recommended exposure levels are exceeded.

Environmental exposure controls: None

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Granular powder/ Crystalline</td>
</tr>
<tr>
<td>Color</td>
<td>Gray-brown</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>pH</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>
Melting point/range: Not Applicable
Boiling point/range: Not Applicable
Flash point: Incombustible
Evaporation rate: Not Applicable
Flammability (solid, gas): Not Available
Upper/lower flammability/explosive limits: Not Available
Auto-ignition temperature: Not Available
Decomposition temperature: Not Available
Vapor pressure: Not Applicable
Vapor density: Not Applicable
Solubility: Insoluble
Viscosity, dynamic (20 ºC): Not Available
Viscosity, kinematic: Not Available
Explosive properties: Not Available
Oxidizing properties: Not Available
Partition coefficient: n-Octanol/Water: Not Applicable

Physical hazards: Not Available
Other information: No additional information

SECTION 10. STABILITY AND REACTIVITY
Reactivity: Avoid contact with strong acids.
Chemical stability: Stable under normal conditions.
Possibility of hazardous reactions: None under normal use conditions.
Conditions to avoid: Dust generation without adequate ventilation.
Incompatible materials: Strong acids (e.g. hydrochloric acid). Strong oxidizing agents (e.g. perchloric)
Hazardous decomposition products: None

SECTION 11. TOXICOLOGICAL INFORMATION
Information on toxicological effects
Acute toxicity:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>LC50</th>
<th>LD50 (oral)</th>
<th>LD50 (dermal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silica, amorphous</td>
<td>Not available</td>
<td>3,160 mg/kg (rat)</td>
<td>Not available</td>
</tr>
<tr>
<td>Iron Oxide</td>
<td>Not available</td>
<td>&gt; 10,000 mg/kg (rat)</td>
<td>Not available</td>
</tr>
<tr>
<td>Calcium oxide, reacted</td>
<td>Not available</td>
<td>&gt; 2,000 mg/kg (rat)</td>
<td>Not available</td>
</tr>
<tr>
<td>Aluminum oxide</td>
<td>Not available</td>
<td>&gt; 5,000 mg/kg (rat)</td>
<td>Not available</td>
</tr>
<tr>
<td>Manganese oxide</td>
<td>Not available</td>
<td>Not available</td>
<td>Not available</td>
</tr>
<tr>
<td>Magnesium oxide</td>
<td>Not available</td>
<td>810 mg/kg (mouse)</td>
<td>Not available</td>
</tr>
<tr>
<td>Titanium Dioxide</td>
<td>&gt; 6,820 mg/m3 (rat)</td>
<td>&gt; 25,000 mg/kg (rat)</td>
<td>Not available</td>
</tr>
<tr>
<td>Zirconium oxide</td>
<td>Not available</td>
<td>&gt; 8,800 mg/kg (rat)</td>
<td>Not available</td>
</tr>
<tr>
<td>Silica, crystalline quartz</td>
<td>Not available</td>
<td>22,500 mg/kg (rat)</td>
<td>Not available</td>
</tr>
<tr>
<td>Andradite</td>
<td>Not available</td>
<td>Not available</td>
<td>Not available</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation: May cause mechanical skin irritation. Not corrosive.
Serious eye damage/irritation: May cause mechanical eye irritation.
Respiratory or skin sensitization: Material is irritating to mucous membranes and upper respiratory tract. May cause lung injury. It is expected to be a low hazard for normal industrial handling.
Germ cell mutagenicity: No data
Carcinogenicity: Crystalline Silica (quartz) has been determined as carcinogen.
Reproductive toxicity: None
Specific target organ toxicity (single exposure):
  Inhalation: May irritate or cause inflammation or pulmonary fibrosis of the respiratory system.
  Skin Absorption: May cause irritation.
Specific target organ toxicity (repeated exposure):
  Long term inhalation of dusts can attribute to risk of lung diseases. Inhalation of respirable silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of silica dust may cause serious health effects which can include the following; Silicosis, Accelerated Silicosis, Acute Silicosis, Cancer, Autoimmune Disease, Tuberculosis and Kidney Disease.
Aspiration hazard: No data
Other information: None
SECTION 12. ECOLOGICAL INFORMATION

Toxicity
Acute toxicity: None known
Persistence and degradability: No data
Bioaccumulative potential: The product has low potential for bioaccumulation
Mobility in soil: No data
Results of PBT & PvB assessment: No data
Other adverse effects: No known significant effects or critical hazards

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods
Recommendations: If product becomes contaminated, follow disposal instructions for contaminant. Dispose of in accordance to federal, state, and local regulations. Do not allow product to reach sewage system. Recycle packaging if possible.

Additional information: None

SECTION 14. TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th>UN number</th>
<th>Land transport (ADR/RID)</th>
<th>Inland waterway Transport (ADN)</th>
<th>Sea transport (IMDG)</th>
<th>Air transport (ICAO-TI/IATA-DGR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Hazard label(s)</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Packing group</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

SECTION 15. REGULATORY INFORMATION

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

US Federal regulations
- TSCA Chemical Inventory Status: All components of this product are listed.
- CERCLA Reportable Quantity: None.
- SARA Title III:
  - Section 302 Extremely Hazardous Substances: None.
  - Section 304 Emergency Release Reporting: None.
  - Section 311/312 Hazardous Categories: None.
  - Section 313 Toxic Categories: None.
- Clean Air Act of 1990 – Title VI: This material does not contain, nor was it manufactured using ozone depleting chemicals.

US State regulations
- Info California Proposition 65: Not listed.
- Massachusetts Right to Know List: Not listed.
- New Jersey Right to Know List: Not listed.
- Pennsylvania Right to Know List: Not listed.

Canadian Regulations:
- WHMIS Classification: Exempt
- DSL (Domestic Substance List): All components of this product are listed on the DSL.

EU Regulations (EINECS 231-545-4)
- Indication of Danger: Not dangerous.
- Risk Phrases: None
- Safety Phrases: None
- This product is considered non-dangerous in accordance with 1999/45/EC.

Chemical Safety Assessment: No

SECTION 16. OTHER INFORMATION

Date of preparation: 70/09/2015
Prepared by: Derek Kirsch
Phone No: 585-591-1182
Revision version: 2
Relevant R-phrases (number and full text): None

NFPA hazard rating:
Health hazard: 1 – Exposure could cause irritation but only minor residual injury even if no treatment is given.
Fire hazard: 0 – Will not burn under typical fire conditions.
Reactivity: 0 – Normally stable, even under fire conditions, and is not reactive with water.

Disclaimer: To the best of our knowledge, the information contained in this SDS is accurate or believed to be accurate. However, Hillcrest Industries Inc. assumes no liability, expressed or implied, is assumed for the accuracy or completeness of the information contained herein.