PRECISION GARNET

MATERIAL SAFETY DATA SHEET

1. Product and Company Information

Product Identification
Product name: Precision Garnet

Company Identification
Company: Universal Minerals International
Address: 4620 South Coach Drive
         Tucson, AZ 85714
Telephone: (520) 838-0964
E-mail: info@umint.com

2. Composition/Information Ingredients

Typical Analysis – Mineralogical
Garnet – >90%
Ilmenite – 2-3%
Sillimanite – 2-4%
Quartz – 0.5-0.8%

Typical Analysis – Chemical
SiO2 – 36-38%
Al2O3 – 20-22%
Fe2O3 – 31-33%
TiO2 – 0.1-0.2%
CaO – 2-4%
MgO – 7-9%
LOI – 0.01-0.5%
3. **Hazards Identification**

**Eye:**
Solid or dust is moderate eye irritant due to its abrasive action.

**Inhalation:**
May be regarded as nuisance dust but can be irritating if inhaled at high concentrations and may cause symptoms such as coughing and sneezing. The TLV for occupational exposure nominate 10 mg/m³ as total dust and 5 mg/m³ as a respirable dust.

**Skin:**
Non Hazardous

**Ingestion:**
There are no known hazards caused by accidental ingestion of small amounts such as might occur during normal handling. Ingestion of larger quantities might cause irritation of the gastro-intestinal system as a result of abrasive action.

**Radiation:**
Garnet contains trace (ppm level) amounts of the naturally occurring radioactive substance such as Uranium & Thorium. However the concentration of the Uranium & Thorium are not sufficient for garnet to be classified as a radioactive substance under the International Atomic Energy Agency Regulation for the safe transport of radioactive material.

4. **First Aid Measures**

**Eye:**
Hold eye open and rinse continuously with a gentle stream of clean running water for at least 15 minutes. Seek medical attention if any irritation or soreness of eye persists.

**Inhalation:**
Remove from source of exposure into fresh air and seek medical attention if any symptoms persist.

**Skin:**
No specific first aid is required for skin contact. Remove clothing and wash skin with soap and or water. Seek medical attention if any irritation or soreness of the skin develops.

**Ingestion:**
First aid is unlikely to be required but if necessary rinse mouth with water ensuring that mouth wash is not swallowed and seek medical attention as a precautionary measure if large amounts have been ingested.
5. **Fire Fighting Measures**
   This is a non-combustible material. Use whatever protective equipment and extinguishing agent are suitable for the primary cause of fire.

6. **Accidental Release Measures**
   Wear safety equipment for normal handling, avoid generating dust, sweep or vacuum up, recycle/reuse or dispose of in landfill subject to local regulations. Transport is not regulated and no specific storage requirements.

7. **Handling and Storage**
   **Storage:**
   Transport is not regulated and there is no specific storage requirement but storage should be designated to minimize creation of dust.

   **Spillage:**
   Wear Protective equipment as specified for handling. Sweep or vacuum up and reuse or dispose. Avoid generation of dust.

   **Waste Disposal:**
   Disposal to landfill in such a way as to prevent generation of dust and subject to local regulations

   **Fire Explosion:**
   Incombustible

   **Fire Extinguishing:**
   Use whatever protective equipment and extinguishing agent is suitable for primary cause of fire.

8. **Exposure Controls/Personal Protection**
   **Ventilation:**
   Ventilation requirement will depend upon handling methods and amount in use but extraction of make-up air may be required to minimize dust layers/level below exposure limits.

   **Protective Equipment:**
   Safety goggles or glasses. A dust type respirator may be required to prevent ingestion/inhalation.

   **TLV:**
   10 mg/m³ as total dust
9. Physical and Chemical Properties
   Specific Gravity 4.10 g/cm³
   Hardness 7.5-8 MOH Scale
   Density 2.40 gm/cm³
   Conductivity < 10 Micro Siemens/meter
   Soluble Chloride Less than 20 ppm
   Carbonate Content Free
   Metal Content Below detectable levels
   pH 7.00

10. Stability and Reactivity
    Chemical Stability Stable
    Reactivity Inert
    Incompatibilities None in normal or expected use
    Decomposition Decomposition will not occur

11. Toxicological Information
    Non Toxic

12. Ecological Information
    The matter is unlikely to cause any environmental damage if handled, used and disposed of in the approved manner. It is insoluble in water and unlikely to contaminate waterways or enter the food chain.

13. Disposal Considerations
    This is a non-hazardous material; disposal must be in accordance with federal state and local regulations. Consult and comply with current regulations. If approved, may be transferred to an approved landfill site.

14. Transport Information
    Transport is not regulated and may be transported as a non-hazardous material. Trucks transporting/carrying bulk material should be covered to prevent dust generation.

Disclaimer
The above information is intended to give general health and safety guidance on the storage ad transport of the substance or product to which it relates. The requirement or recommendation of any relevant site or working procedure, system or policy in force or arising from any risk assessment involving the substance or product shall take precedence over any of the guidance contained in this safety data sheet where there is a difference in the information given. The information provided in this safety data sheet is accurate at the date of publication and will be updated as and when appropriate.

Creation date: January 1, 2016