**PRODUCT IDENTIFICATION**

- **PRODUCT NAME**: Iron Oxide Black
- **CHEMICAL FAMILY**: Inorganic Metal Oxide
- **CHEMICAL NAME**: Iron Oxide, Iron Oxide Magnetite
- **CAS NUMBER**: 1309-38-5
- **TSCA STATUS**: On inventory
- **OSHA HAZARD COMMUNICATION STATUS**: This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200. Fe₂O₄
- **CHEMICAL FORMULA**:

<table>
<thead>
<tr>
<th>COMPONENTS</th>
<th>%</th>
<th>OSHA-PEL</th>
<th>ACGIH-TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron Oxide, Magnetite</td>
<td>Essentially 100</td>
<td>None Est.</td>
<td>None Est.</td>
</tr>
</tbody>
</table>

**Note**: There is an 8-hour TWA OSHA-PEL of 10 mg/m³ and ACGIH-TLV of 5 mg/m³ for iron oxide fume. (A fume can be defined as an aerosol of solid particles produced by condensation of vaporized materials such as iron metal. In normally accepted usages, iron oxide pigments would not be present in the form of a fume.)

**PHYSICAL DATA**

- **APPEARANCE**: Solid-powder
- **COLOR**: Black
- **ODOR**: Odorless
- **MELT POINT/FREEZE POINT**: Greater than 1832°F (1000°C)
- **BOILING POINT**: Not Applicable
- **VAPOR PRESSURE**: Not Applicable
- **SPECIFIC GRAVITY**: 4.5 to 4.7 g/mL
- **SOLUBILITY IN WATER**: Insoluble
- **% VOLATILE BY VOLUME**: Not Applicable

**FIRES & EXPLOSION DATA**

- **FLASH POINT °F (°C)**: Not Applicable
- **FLAMMABLE LIMITS**: Not Applicable
- **LEL**: Not Applicable
- **UEL**: Not Applicable

**EXTINGUISHING MEDIA**

- Use extinguishing agents that are suitable to the surrounding fire.

**SPECIAL FIRE FIGHTING PROCEDURES/UNUSUAL FIRE OR EXPLOSION HAZARDS**: Fire fighters should be equipped with self-contained breathing apparatus. Under fire conditions irritating and/or toxic aerosols or gases may be present. Exposure to excessive heat (greater than 131°F, 55°C) can cause this product to become unstable and slowly auto-oxidize from Fe₂O₄ to Fe₂O₃ which generates additional heat. Under certain conditions, this heat may be sufficient to cause combustible materials to ignite.

**HUMAN HEALTH DATA**

**PRIMARY ROUTE(S) OF EXPOSURE**

- Eye and skin contact, inhalation

**HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE**

- Acute: Excessive exposure to airborne dust may reduce visibility and/or cause unpleasant deposits in the eyes, ears and nose. Injury to the skin or mucous membranes can occur by direct mechanical action or by rigorous skin cleaning necessary for removal of dust.

**CHRONIC**: No chronic health effects are known from repeated exposure to iron oxide pigments.

**OTHER**: Prolonged inhalation (6 to 10 years) of iron oxide fumes has been reported to produce changes in lung x-rays of exposed individuals. This condition, siderosis, is considered to be a benign pneumoconiosis that exhibits no adverse health effects. Siderosis has been observed among occupations such as arc-welders where iron oxide fumes are present. To the best of our knowledge, this condition has not been observed after prolonged exposure to iron oxide pigments.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE**: None Known

**CARCINOGENICITY**:

- NTP: Not Listed
- IARC: Not Listed
- OSHA: Not Listed
- ACGIH: Not Listed

**NIOSH in the Registry of Toxic Effects of Chemical Substances (RTECS) lists iron oxide as a suspect human carcinogen. However, the IARC reference to underground hematite mining is the source for this classification. Based on the information currently available, this product is not considered a carcinogen.**

**EXPOSURE LIMITS**

- OSHA PEL: Not established for this product
- ACGIH TLV: Not established for this product. The recommended guideline is the TLV for nuisance particulates, 10 mg/m³ of total dust.
VI. EMERGENCY & FIRST AID PROCEDURES

- **EYE CONTACT**: Flush eyes with plenty of water, lifting lids periodically for at least 15 minutes. Consult a physician if irritation persists.
- **SKIN CONTACT**: Wash with soap and water. Remove from dusty area to fresh air. If not breathing, give artificial respiration. If breathing is immediately contact a physician.
- **INHALATION**: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
- **INGESTION**: Do not induce vomiting unless directed by a physician. Immediately contact a physician.

VII. EMPLOYEE PROTECTION RECOMMENDATIONS

- **EYE PROTECTION**: Safety glasses.
- **SKIN PROTECTION**: Rubber, cloth, or plastic gloves if appropriate for job conditions.
- **RESPIRATORY PROTECTION**: Work at ambient concentration levels and if the recommended exposure limit is exceeded, an NIOSH/MSHA approved dust respirator should be worn. (Do not exceed limits of the respirator.) Use local ventilation to maintain air levels below the recommended exposure limit if dusting is a problem.
- **OTHER**: Eye wash stations and washing facilities should be available. Employees should wash their hands and face before eating, drinking or using tobacco products.

VIII. REACTIVITY DATA

- **STABILITY**: Stable at normal temperatures. At temperatures greater than 131°F (55°C) this product can become unstable and slowly auto-oxidize.
- **POLYMERIZATION**: Will not occur.
- **INCOMPATIBILITY**: None known.
- **HAZARDOUS DECOMPOSITION PRODUCTS**: None known.

IX. SPILL OR LEAK PROCEDURES

- **STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**: Vacuum or scoop material into an appropriately marked container for reclamation or disposal. Avoid excessive generation of dust. If dust is generated, use appropriate respiratory protection.
- **CERCLA (SUPERFUND) REPORTABLE QUANTITY**: None.
- **WASTE DISPOSAL METHOD**: Material which cannot be recycled into your process should be landfilled in accordance with federal, state and local environmental control regulations.

X. SPECIAL PRECAUTIONS & STORAGE DATA

- **STORAGE TEMPERATURE**: Ambient/Ambient.
- **AVERAGE SHELF LIFE**: Unlimited.
- **SPECIAL SENSITIVITY**: Extreme heat (greater than 31°F, 55°C).
- **(HEAT, LIGHT, MOISTURE)**: Store dry at ambient temperatures away from food and beverages. Avoid breathing dust. Avoid contact with eyes and skin. Wash thoroughly after handling. Do not store near strong oxidizers, sources of heat (furnace, stoves, boilers, etc.) or flammable or combustible liquids are stored.

XI. ANIMAL TOXICITY DATA

- **ACUTE TOXICITY**: Greater than 10 g/kg (Rat).
- **EYE EFFECTS**: No irritation at 50 mg (Rabbit).
- **SKIN EFFECTS**: No irritation at 500 mg (Rabbit).
- **AQUATIC TOXICITY**: Fish LC50: No effects up to 1 g/liter (Leuciscus idus).
- **OTHER**: The IARC Monograph on underground hematite mining (1972) states, "No carcinogenic effects were observed in mice, hamsters, or guinea pigs given ferric oxide intratracheally."