

MATERIAL SAFETY DATA SHEET

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DIVISION ADDRESS

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EMERGENCY NO.:
(301) 776-1100

Product Code Number - J8104

I. PRODUCT IDENTIFICATION

PRODUCT NAME Ironoxide Black
CHEMICAL FAMILY Inorganic Metal Oxide
CHEMICAL NAME Iron Oxide, Iron Oxide Magnetite
CAS NUMBER 1309-38-2
T.S.C.A. 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.
CHEMICAL FORMULA Fe₃O₄

II. INGREDIENTS

COMPONENTS:	%	OSHA-PEL	ACGIH-TLV
Iron Oxide, Magnetite	Essentially 100	None Est.	None Est.

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.)

III. 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

IV. FIRE & EXPLOSION DATA

FLASH POINT °F (°C) Not Applicable
FLAMMABLE LIMITS -
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 Fe₃O₄ to Fe₂O₃ which generates additional heat. Under certain conditions, this heat may be sufficient to cause combustible materials to ignite.

V. 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 fume 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
OTHER IARC and NTP both contain listings for underground hematite mining. These listings are for the occupational exposures associated with the mining process which include radon, a known lung carcinogen.
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 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.
INHALATION	Remove from dusty area to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
INGESTION	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 ambient concentrations should be monitored and if the recommended exposure limit is exceeded, a NIOSH/MSHA approved dust respirator should be worn. (Do not exceed use limits of the respirator.)
VENTILATION	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 (MATERIALS TO AVOID)	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.

RCRA STATUS: This product when discarded as sold would not be a RCRA hazardous waste.

X. SPECIAL PRECAUTIONS & STORAGE DATA

STORAGE TEMPERATURE (MIN./MAX.)	Ambient/Ambient
AVERAGE SHELF LIFE	Unlimited
SPECIAL SENSITIVITY (HEAT, LIGHT, MOISTURE)	Extreme heat (greater than 131°F, 55°C)
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING	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, kilns, boilers, etc.) or flammable or combustible liquids are stored.

XI. ANIMAL TOXICITY DATA

ACUTE ORAL, LD50	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."