

MSDS CODE: BL38
Date Revised: 1/20/2009
Prepared By: Nick Paris

Reason for Revision: See Section 16

1. CHEMICAL, PRODUCT AND COMPANY IDENTIFICATION:

Product Code(s): **5059, 51126, 61166, 61204, 61204G, 61335, C1482, C1483, C1516, C1834, C2461, C2472, C2475, L3924, L4026, MC64, MC67, MC68**

Product Name: Iron Oxide Brown
Chemical Family: Inorganic Metal Oxide Mixture
Synonyms: Synthetic Iron Oxide, Blend of Hydrated & Unhydrated Iron Oxide
C.A.S. Number: Mixture of 1309-37-1+51274-00-1+1317-61-9
Color Index Name: Pigment Brown 6
Color Index Number: 77491

Manufacturer's Name/Address:
Rockwood Pigments/Davis Colors, 7011 Muirkirk Road, Beltsville, Maryland, USA 20705
Business Tel: (301) 210-7800 9a-5p (0900-1700) EST M-F
Rockwood Pigments/Davis Colors, 3700 East Olympic Boulevard, Los Angeles, California, USA 90023
Business Tel: (323) 269-7311 9am-5pm (0900-1700) PST M-F

24 Hour Emergency (Chemtrec): 800-424-9300

2. COMPOSITION/INFORMATION ON INGREDIENTS

OSHA Hazardous Ingredients (29CFR1910.1200):

Components:	C.A.S.	%	Exposure Limits (8 Hrs.TWA)	
			OSHA PEL	ACGIH TLV
Silicon Dioxide	7631-86-9	(<4)	6 mg/m ³	10 mg/m ³
Iron Oxide (red)	1309-37-1	(10-90%)	Not established	Not established
Crystalline Silica	14808-60-7	(<1)	0.05 mg/m ³	0.1 mg/m ³
Calcium Carbonate CaCO ₃	1317-65-3	(20-75%)	15 mg/m ³	10 mg/m ³
Total dust			15 mg/m ³	
Respirable Dust Fraction			5 mg/m ³	

Non-Hazardous Ingredients:

Components:	C.A.S.	%	Exposure Limits (8 Hrs.TWA)	
			OSHA PEL	ACGIH TLV
Iron Oxide (yellow)	51274-00-1	(0-75%)	Not established	Not established
Iron Oxide (Black)	1317-61-9	(5-40%)	Not established	Not established

3. HAZARDS IDENTIFICATION

***** EMERGENCY OVERVIEW *****

Dry, brown, red or gold powder with little to no odor. Will not burn or react. Packaging material can burn or melt in fire, producing toxic smoke and fumes.

HMIS Codes: H=1, F=0, R=0, P=0 (0=Minimal, 1=Slight, 2=Moderate, 3=Serious, 4=Severe)

WARNING: CONTAINS CRYSTALLINE SILICA (more than 0.1%). Chronic inhalation of crystalline silica can cause cancer or silicosis (a disabling, nonreversible and sometimes fatal lung disease). May affect eyes, respiratory system and cardiovascular system. May affect lungs. Cancer Hazard.

Potential Health Effects:

Eyes: May cause redness or irritation.
Skin: May cause dryness or skin irritation but is not likely to cause allergic skin reaction. Irritation to skin or mucous membranes can occur by direct mechanical action or by rigorous skin cleaning necessary for removal of dust.
Ingestion: Small amount (less than one ounce/30 grams) swallowed is not likely to cause injury. If large amount ingested, may cause gastric irritation, nausea and diarrhea. Seek medical attention.
Inhalation: Inhalation of large amounts of fine dust may lead to pulmonary edema. As with all dusty materials, inhalation of small amounts may cause respiratory irritation, sneezing, coughing, and runny nose. Tickling cough is a common symptom. Wear respirator and avoid breathing dust.

Human Effects and symptoms of overexposure:

Acute: To date, adverse health effects from exposure have not been reported among workers using this pigment. On the basis of Animal Toxicity Data (see Section 11), we would expect this product to be non-irritating to the eyes and skin and essentially non-toxic by ingestion. However, excessive exposure to airborne dust may reduce visibility and/or cause unpleasant deposits in the eyes, ears and nose. Irritation to skin or mucous membranes can occur by direct mechanical action or by rigorous skin

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cleaning necessary for removal of dust.

Chronic: Prolonged inhalation of amorphous silica may produce x-ray changes in the lungs without disability.
Other Effects: No chronic effects are known from repeated exposure to iron oxide PIGMENT. 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 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 pigment. There is no Iron Oxide FUME contained in this product and none should be generated under normal use.

Medical Conditions None known

Aggravated by Exposure:

Carcinogenicity:

Other:

IARC: Not Listed

NTP: Not Listed

OSHA: Not regulated

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. This product contains above 0.1% Crystalline Silica (CAS 14808-60-7). Crystalline Silica may cause serious lung damage if inhaled over a period of time. Limited evidence suggests Crystalline Silica is a carcinogen. Wear a NIOSH/OSHA approved respirator and avoid breathing dust.

4. FIRST AID MEASURES

Eyes: Flush eyes with water, lifting eyelids periodically. Remove contact lenses. Continue flushing for 15 minutes or until eyes return to normal. Get medical attention if irritation develops or persists.

Skin: Wash with soap and water. Get medical attention if irritation develops or persists. Wash clothing before re-use.

Ingestion: Swallowing less than an ounce (less than 30 grams) will not cause harm. For larger amounts, do not induce vomiting, but give one or two glasses of water to drink and Contact medical personnel or poison control center immediately. Do not give anything by mouth to an unconscious person.

Inhalation: Move from dusty area to fresh air and get medical attention for any breathing difficulty. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get immediate medical attention. (Long-term chronic inhalation risk of cancer. See Section 3).

5. FIRE FIGHTING MEASURES

Flammable Properties: Not Flammable.

Flash Point: Will not flash.

Upper Explosive Limit (UEL): Will not explode

Lower Explosive Limit (LEL): Will not explode

Auto-ignition Temperature: Exposure to excessive heat greater than 176 F (80 C) can cause the portion of Iron Oxide Black contained in this product to slowly auto-oxidize, which generates additional heat. Under certain conditions, this heat may be sufficient to cause the bag or combustible materials stored nearby to ignite.

Extinguishing Media: This product is not combustible or flammable. Use extinguishing agents that are suitable for the surrounding fire: water spray, dry chemical, foam, or CO₂.

Fire fighting Instructions: Firefighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes and smoke inhalation.

6. ACCIDENTAL RELEASE MEASURES

Small Spill: If dust is generated, use appropriate respiratory protection. Vacuum or scoop material into an appropriately marked container for re-use or disposal. Avoid excessive generation of dust.

Large Spill: Use recommended protective clothing and respiratory protection. Use shovel to reclaim material. Vacuum or scoop material into an appropriately marked container for re-use or disposal. Avoid excessive generation of dust. Spill area can be washed with water. Collect wash water for approved disposal. Prevent runoff from entering storm sewers and ditches which lead to natural waterways.

7. HANDLING AND STORAGE

Storage: Store dry at ambient temperature away from food and beverages, excessive heat or flame sources (furnace, kilns, boilers etc.). Avoid breathing dust. Avoid contact with eyes and skin. Wash thoroughly after handling.

Handling: Avoid breathing dust. Avoid getting in eyes or on skin. Wear dust mask and comply with respiratory protection programs. Wear rubber gloves and safety glasses. Wash thoroughly after handling. Avoid contact with moisture. Re-seal bag immediately after use. Pallets are wrapped in polyethylene plastic. Removal may cause an electrostatic spark; therefore removal of the wrap should not be in the presence of flammable

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vapors.

Storage Temperature (Min/Max) : Ambient/50°C (122°F)
 Shelf Life..... : Unlimited in closed container
 Special Sensitivity..... : Excessive Heat
 Other Precautions..... : None

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Use exhaust ventilation or vacuum dust collection equipment to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred to control emissions at their source, preventing dispersion into the general work area. Refer to ACGIH ventilation guidelines and recommended practices.

Eyes: Safety Glasses.

Skin: Body-covering clothing. Rubber, Plastic, Leather or cloth gloves are suggested to facilitate personal hygiene.

Respiratory Protection: Personal Respirators (NIOSH Approved): If the Airborne Exposure Limit is exceeded and engineering controls are not feasible, a half face piece particulate respirator (NIOSH type N95 or better filter) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece particulate respirator (NIOSH type N100 filters) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres. Where respirators are required, you must have a written program covering the basic requirements in the OSHA respirator standard. These include training, fit testing, medical approval, cleaning, maintenance, cartridge change schedules, etc. See 29CFR1910.134 for details.

Other: Emergency showers and eye wash stations should be available. Educate and train employees in the safe use and handling of hazardous chemicals.

Work/Hygiene Practices: Employees should wash their hands and face before eating, drinking or using tobacco products.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance..... : Solid Brown or Gold Powder
 Odor..... : Odorless
 Physical State..... : Dry Powder
 pH..... : 5 - 9 in 50 gr/l H₂O aqueous suspension; DIN 787/9
 Vapor Pressure..... : Not a vapor
 Vapor Density..... : Not a vapor
 Boiling Point..... : Not applicable
 Freezing Point..... : Not applicable
 Melting Point..... : Greater than 1000°C (1832°F)
 Solubility in Water..... : Insoluble
 Specific Gravity (g/ml)..... : 4.4 to 5.0 @ 20°C (68°F); DIN 787/10
 Bulk Density (kg/m³)..... : 500 to 1100 @ 20°C (68°F)
 Particle Size (microns)..... : 0.3-0.6
 Volatile Organic Compounds (VOC)..... : None
 Chemical Formula..... : Fe₃O₄ + Fe₂O₃ + FeOOH + CaCO₃

10. STABILITY AND REACTIVITY

Chemical Stability (Conditions to Avoid): Stable. Keep away from flames and heat. Exposure to excessive heat greater than 176°F (80°C) can cause the portion of Iron Oxide Black contained in this product to slowly auto-oxidize, which generates additional heat. Under certain conditions, this heat may be sufficient to cause the bag or combustible materials stored nearby to ignite.

Incompatibility (materials to avoid): No known material incompatibilities

Decomposition Temperature C° (F°): Does not decompose

Hazardous Decomposition Products: None

Hazardous Polymerization: Will not occur

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11. TOXICOLOGICAL INFORMATION

Eyes: Not irritating to rabbit eyes
 Skin: Not irritating to rabbit skin Dermal, LD 50 not established for product
 Ingestion: Non irritating. The oral, LD50 for rats is greater than 5000 mg/l
 Inhalation: Non irritating. LC 50 not established for product
 Subchronic: Data not established for product
 Chronic/Carcinogenicity: Data not established for product
 Other (Mutagenic, Teratogenic, Reproductive Tests): The IARC monograph on underground hematite mining (1972) states, "No carcinogenic effects were observed in mice, hamsters, or guinea pigs given ferric oxide intratracheally."

12. ECOLOGICAL INFORMATION

Ecotoxicological Information: Fish toxicity: Golden Orfe (*Leuciscus idus*) LCo greater than 1000 mg/l
 Chemical Fate Information: No appreciable bioconcentration is expected in the environment.

13. DISPOSAL CONSIDERATIONS

Material which cannot be re-used should be disposed in accordance with federal, state and local environmental control regulations at an authorized site. This product when discarded as sold is not a RCRA hazardous waste. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40CFR 261.20-24)

14. TRANSPORT INFORMATION

DOT Shipping Name : None
 Technical Shipping Name : Inorganic Oxide
 DOT Hazardous Classification : Non-Regulated
 DOT Hazard Class : Non-Regulated
 DOT Identification Number : None
 DOT Labels required : None
 DOT Placards required : None
 UN Class : None
 UN/NA Number : None
 Freight Class : Iron Oxide; NOI

15. REGULATORY INFORMATION

***** U.S. Federal Regulations *****

OSHA: This product is considered Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200) due to potential to auto-oxidize (self-heat). See section 5.
 CERCLA/SUPERFUND: (40 CFR 117,302) Reportable Quantity (RQ):
 Not Reportable, however, we recommend you contact local authorities to verify requirements for your site.

Superfund Amendments and Reauthorization Act (SARA), Title III:
 Section 302 (Extremely Hazardous Substances): None
 Section 311/312 (Hazard Categories): Delayed Health Hazard
 Section 313 (Reportable Toxic Ingredients):
 Chemical Name: C.A.S. Concentration
 None Reportable

T.S.C.A.: This product is listed on TSCA Inventory.
 NOTE THAT APPLICABLE LAWS AND REGULATIONS MAY REQUIRE YOU TO LABEL AND PROVIDE INFORMATION TO PURCHASERS OR USERS OF YOUR PRODUCTS CONTAINING CRYSTALLINE SILICA.

***** International Regulations *****

Canadian WHMIS: Not restricted/non-hazardous
 Canadian Environmental Protection Act (CEPA): All components of this product are on the Domestic Substances List (DSL), and acceptable for use under the provisions of CEPA.
 EINECS: All components of this product are on the European Inventory of Existing Commercial Chemical Substances (EINECS).

***** State Regulations *****

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California Proposition 65 Warning:

This product contains chemicals known to the state of California to cause cancer and birth defects or other reproductive harm.

- CA = California Safe Drinking Water and Toxic Enforce Act (Proposition 65)
- MA = Massachusetts Hazardous Substance List
- NJ4 = New Jersey Other- included in 5 predominant ingredients >1%
- PA3 = Pennsylvania Non-hazardous present at 3% or greater

Chemical Name:	C.A.S.	Concentration	State Code
Iron Oxide Red	1309-37-1	<10%	PA3,NJ4
Iron Oxide Yellow	51274-00-1	0 to 75%	PA3,NJ4
Iron Oxide Black	1317-61-9	5 to 40%	PA3,NJ4
Silicon Dioxide-Amorphous (SiO ₂)	7631-86-9	2 to 4%	PA3,MA,NJ4
Calcium Carbonate CaCO ₃	1317-65-3	<5%	PA3,NJ4
Arsenic	7440-38-2	<350 ppm	CA,MA
Cadmium	7440-43-9	<10 ppm	CA,MA
Mercury	7439-97-6	<1 ppm	CA
Nickel	7440-02-0	<400 ppm	CA,MA
Lead	7439-92-1	<200 ppm	CA,MA

Note: This information based on random sample analyses. Actual content may vary from batch to batch.

16. OTHER INFORMATION

- Reason for revision:
- 4/20/2005 - Changed crystalline silica chronic exposure text section 3. Removed Umber from Prop 65 List section 15.
 - 3/30/2005 - Changed Umber content to 80-85%, Iron Oxide to <10%, Manganese to <10%. Added Carbon Black <5% to section 15 state regulations list. Changed OSHA status to Hazardous. Added L1566 to product list.
 - 7/18/2003 - Remove aniline from trace content table because it is not contained in product.
 - 7/20/2004 - added product 61166.
 - 11/29/2004 - Changed crystalline silica exposure limit to 0.05 mg/m³.
 - 11/29/2004 - Removed Iron Oxide Fume from ingredients, Section 2, as it is not contained in this product.
 - 1/11/2006 - Updated review date.
 - 9/08/2006 - Added L3924 to product list section 1.
 - 5/07/2007 - Added 61335 and C2475 to product list section 1.
 - 12/13/2007 - Added C1834 to product list section 1.
 - 8/7/2008 - Added C1482, C1483 and C1516 to product list section 1.
 - 1/20/2009 - Added C2461 and C2472 to product list section 1.

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