

## 1. CHEMICAL, PRODUCT AND COMPANY IDENTIFICATION:

Product Code(s): 641, 677, 679, 3202X, 5363, 5873, 5964, 6059, 6069, 6094A, 6114, 6130, 6145, 6156, 6455, 6522, 6804, 6863, 6911A, 6920, 6997, 10078, 10186, 10196, 10233, 10248, 10249, 10266, 10268, 10270, 10271, 10288, 50017, 50533, 50564, 50574, 50694, 50708, 50803, 50838, 50841, 50882, 50945, 51078, 51083, 51084, 51087, 51107, 51127, 51137, 51202, 51203, 51206, 51214, 51215, 51220, 60196, 60294, 60565, 60567, 60581, 60639, 60683, 60700, 60710, 60735, 60745, 60759, 60763, 60764, 60782, 60799, 60825, 60831, 60838, 60847, 60862, 60872, 60879, 60882, 60895, 60905, 60907, 60910, 60948, 60966, 60971, 60975, 60980, 60982, 60995, 60999, 61002, 61041, 61078, 61094, 61189, 61117, 61205, 61222, 61230, 61235, 61252, 61257, 61295, 61328, 61331, 61348, 61350, 61353, 63002, 63003, 63007, 63008, 63009, 63016, 63023, 63024, 63025, 63026, 63027, 63029, 63030, 63034, 63035, 63036, 63053, 63054, 63064, 63065, 63067, 63082, 63083, 63098, 63104, 63122, 63125, 63128, 63133, 63136, 63137, 63140, 63145, 63147, 63152, 63153, 63157, 63160, 63161, 63162, 63167, 63168, 63169, 63172, 63174, 63175, 63180, 63183, 63195, 63196, 63203, 63205, 63207, 63210, 63211, 63216, 63217, 63218, 63219, 63220, 63221, 63223, 63225, 63226, 63229, 63232, 63237, 63238, 63248, 63256, 63258, 63262, 63265, 63298, 63366, 63367, 80200, 4003C, 4003D, 4003E, 4182E, 422S, 50203A, 60322A, 6920H, C1026, C1066, C1115, C1144, C1173, C1182, C1187, C1226, C1278, C1347, C1362, C1367, C1379, C1416, C1437, C1439, C1453, C1454, C1501, C1503, C1535, C1536, C1557, C1560, C1654, C1726, C1727, C1882, C1923, C223, C264b, C2161, C2200, C2257, C2303, C2330, C2407, C2408, C2411, C2412, C2503, C2557, C2667, C2673, C2677, C2711, C2712, C3924, C520, C602, C692, C695a, C704, C717, C750, C753, C760, C769, C840, C841, C842, C858, C895, C896, C898, C898A, C925, L1005, L1006, L1023, L1048, L1049, L1068, L1092, L1099, L1176, L1189, L1201, L1203, L1208, L1209, L1224, L1242, L1271, L1281, L1305, L1315, L1344, L1354, L1358, L1369, L1371, L1392, L1402, L1412, L1444, L1460, L1467, L1469, L1470, L1476, L1477, L1487, L1510, L1513, L4025, P11056

Product Name: Iron Oxide Brown/Tan  
 Chemical Family: Inorganic Metal Oxide  
 Synonyms: Synthetic Iron Oxide  
 C.A.S. Number: Mixture 1309-37-1+51274-00-1+1317-61-9  
 Color Index Name: Pigment Brown 6  
 Color Index Number: 77492

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):			Exposure Limits (8 Hrs.TWA)	
Components:	C.A.S.	%	OSHA PEL	ACGIH TLV
Silicon Dioxide	7631-86-9	(<4)	6 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>
Iron Oxide (red)	1309-37-1	(10-90%)	Not established.	Not established.
Non-Hazardous Ingredients:			Exposure Limits (8 Hrs.TWA)	
Components:	C.A.S.	%	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 or gold powder with little to no odor. Will not burn or react. Long-term inhalation can cause lung irritation or siderosis. Packaging material can burn or melt in fire, producing toxic smoke and fumes.

MSDS CODE: BL4  
Date Revised: 12/02/2009  
Prepared By: Nick Paris

Reason for Revision: See Section 16

\*\*\*\*\*

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

**Potential Health Effects:**

**Eyes:** Non-irritating to the eyes. Excessive exposure to airborne dust may reduce visibility and/or cause unpleasant deposits.  
**Skin:** Will not irritate skin and 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:** Not a hazard in normal industrial use. Wear respirator and avoid breathing dust. As with all dusty materials, inhalation may cause respiratory irritation, sneezing, coughing, and runny nose.

**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 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:** IARC: Not Listed NTP: Not Listed OSHA: Not regulated

**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.

#### 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.

#### 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

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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 to the surrounding fire; water spray, dry chemical, foam or CO<sub>2</sub>  
 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. 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 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: Maintain air levels below the recommended exposure limit using exhaust ventilation if necessary.  
 Eyes: Safety Glasses.  
 Skin: Body-covering clothing. Rubber, Plastic, Leather or cloth gloves are suggested to facilitate personal hygiene.  
 Respiratory Protection: Workplace ambient dust concentrations should be monitored and if the recommended exposure limit is exceeded, a NIOSH/MSHA approved respirator with dust prefilter should be worn.  
 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 H<sub>2</sub>O 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/m<sup>3</sup>)..... : 500 to 1100 @ 20°C (68°F)  
 Particle Size (microns) ..... : 0.3-0.6

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Volatile Organic Compounds (VOC) ..... : None  
 Chemical Formula..... : Fe<sub>3</sub>O<sub>4</sub> + Fe<sub>2</sub>O<sub>3</sub> + FeOOH

## 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 F° (C°): Does not decompose  
 Hazardous Decomposition Products: None  
 Hazardous Polymerization: Will not occur

## 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:

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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.

\*\*\*\*\* 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 \*\*\*\*\*

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 to 90%	PA3, NJ4
Iron Oxide Yellow	51274-00-1	0 to 75%	PA3, NJ4
Iron Oxide Black	1317-61-9	0 to 40%	PA3, NJ4
Silicon Dioxide-Amorphous (SiO <sub>2</sub> )	7631-86-9	2 to 4%	PA3, MA, NJ4
Arsenic	7440-38-2	<100 ppm	CA, MA
Cadmium	7440-43-9	<5 ppm	CA, MA
Mercury	7439-97-6	<1 ppm	CA
Nickel	7440-02-0	<400 ppm	CA, MA
Lead	7439-92-1	<100 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: 7/18/2003 - Remove aniline from trace content table because it is not contained in product.
- 06/09/2004 - Added 422S to product list section 1..
- 08/16/2004 - Removed Iron Oxide Fume from ingredient Section 2 because it is not contained in product.
- 06/14/2005 - Added 6094A to product list section 1.
- 1/11/2006 - Updated review date.
- 5/3/2006 - Added C1454, C2164, C1278, C2303 and C2330 to product list section 1.
- 9/22/2006 - Added C2407, C2408, C2411, C2412 to product list section 1.
- 4/30/2007 - Added 61189 and C2503 to product list section 1.
- 12/13/2007 - Added C2200 to product list section 1.
- 01/31/2008 - Added C2257, C2557, C2677 to product list section 1.
- 01/31/2008 - Added C1535, C1536, C1557 to product list section 1.
- 01/20/2009 - Added C1726 to product list section 1.
- 01/26/2009 - Added C2711, C2712 to product list section 1.
- 12/02/2009 - Added C2673, C2677 to product list section 1.

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