

MSDS CODE: YO1
 Date Revised: 01/20/2009
 Prepared By: Kartik Patel

Reason for Revision: See Section 16

1. CHEMICAL, PRODUCT AND COMPANY IDENTIFICATION:

Product Code(s): **524, 525, 569, 582, 585, 586, 590, 5190, 5191, 5192, 5601, 50892, 50895, 524J, C1191, C1734, C1760, C2245, C2301**

Product Name: Iron Oxide Yellow
 Chemical Family: Inorganic Metal Oxide
 Synonyms: Synthetic Iron Oxide, Hydrated Iron Oxide, Iron (III) Oxide
 C.A.S. Number: 51274-00-1
 Color Index Name: Pigment Yellow 42
 Color Index Number: 77492
 Formula: FeOOH

Manufacturer's Name/Address:
 Rockwood Pigments, 7011 Muirkirk Road, Beltsville, Maryland, USA 20705
 Business Tel: (301) 210-7800 9a-5p (0900-1700) EST M-F
 Rockwood Pigments, 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-Amorphous (SiO ₂)	7631-86-9	(<2)	6 mg/m ³	10 mg/m ³
Non-Hazardous Ingredients:			Exposure Limits (8 Hrs.TWA)	
Components:	C.A.S.	%	OSHA PEL	ACGIH TLV
Iron Oxide (yellow)	51274-00-1	98-100%	Not established	Not established

3. HAZARDS IDENTIFICATION

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

Dry, yellow 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.

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

Potential Health Effects:

Eye Contact: Non-irritating to the eyes. Excessive exposure to airborne dust may reduce visibility and/or cause unpleasant deposits.

Skin Contact: 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: Ingestion causes stomachache, vomiting and diarrhea.

Inhalation: Inhalation causes coughing, sneezing and respiratory problems.

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

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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

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

Ingestion: If conscious, give large quantities of water to induce vomiting. Get medical attention.

Inhalation: If exposed to excessive levels of dust or fumes, 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: Will not ignite. At temperatures greater than 356°F (180°C) the product will convert to Iron Oxide Red (Fe₂O₃).

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 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. It is more effective to clean this product while dry by vacuuming or sweeping. However, 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.). Keep separate from substances subject to catalytic decomposition by dust, e.g. peroxides.

Handling: Avoid breathing dust. Avoid getting in eyes or on skin. Wash hands thoroughly after handling. Avoid contact with moisture. Re-seal bag immediately after use. Pallets are wrapped in

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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 : None
 Other Precautions : None

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Maintain air levels below the recommended exposure limit using process enclosure and exhaust ventilation if necessary. Supply sufficient replacement air to make up for air removed by exhaust systems. If engineering controls and work practices are not effective in controlling exposures, appropriate personal protective equipment including a NIOSH/OSHA approved dust respirator should be worn.

Eyes: Wear Safety Glasses with side shields or goggles. Eye wash stations should be available in workplace.

Skin: Wear body-covering clothing closed at wrists and ankles. Rubber, PVC, or Leather 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 Yellow Powder
 Odor : Odorless
 Physical State : Dry Powder
 pH : 3.5-7.5 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
 Loss on Ignition (%) : 13
 Specific Gravity (g/ml) : 4.1 @ 20°C (68°F); DIN 787/10
 Bulk Density (kg/m³) : 200 to 500 @ 20°C (68°F)
 Particle Size (microns) : 0.1 x 0.7
 Volatile Organic Compounds (VOC) : None
 Chemical Formula : FeOOH

10. STABILITY AND REACTIVITY

Chemical Stability (Conditions to Avoid): This is a stable material. Keep away from flames and heat. At temperatures greater than 356°F (180°C) the product will convert to Iron Oxide Red (Fe₂O₃).

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.

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Skin: Not irritating to rabbit skin Dermal, LD₅₀ not established for product.
 Ingestion: Non irritating. The oral, LD₅₀ for rats is greater than 5,000 mg/l.
 Inhalation: Non irritating. LC₅₀ 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*) LC₅₀ greater than 1,000 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 by an approved contractor. Product and packaging can be disposed of or recycled as non-hazardous waste. 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 (Inorganic Oxide)

15. REGULATORY INFORMATION

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

OSHA: This product is considered Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).
 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.

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

Canadian WHMIS: Not restricted/non-hazardous
 Canadian Environmental Protection Act (CEPA): All components of this product are on the Domestic

MATERIAL SAFETY DATA SHEET

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EINECS: Substances List (DSL), and acceptable for use under the provisions of CEPA.
 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 Yellow	51274-00-1	98 - 100%	PA3,NJ4
Lead	7439-92-1	<50 ppm	CA,MA
Cadmium	7440-43-9	<5 ppm	CA,MA
Arsenic	7440-38-2	<50 ppm	CA,MA
Copper	7440-50-8	<350 ppm	MA
Manganese	7439-96-5	<300 ppm	MA
Nickel	7440-02-0	<200 ppm	CA,MA
Silicon Dioxide	7631-86-9	<2%	PA3,NJ4

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

16. OTHER INFORMATION

- Reason for revision:
- 7/23/ 03 - Revise sections 4, 8, & 13.
 - 1/11/2006 - Removed Calif Prop 65 listing for Copper and Manganese in section 15.
 - 3/14/2006 - Removed 1101, 1103, 1110, 5185, 5190, 5191, 5192, 5196, 5226, 5179J, 5180J, 5185J, 5190LO, 5190LOJ, 5191J, 5191LOJ, 5191Z, 5196J and 569J from product list section 1. Revised ingestion & inhalation effects section 3 and treatment section 4. Changed OSHA status to hazardous section 15. Changed Iron Oxide Yellow concentration from 85 – 87% to 98 – 100% section 2 and 15.
 - 6/02/2006 - Added C2301 to product list.
 - 6/23/2006 - Added 5190 to product list.
 - 8/11/2008 - Added 5192 to product list.
 - 9/24/2008 - Added 5191 to product list.
 - 1/20/2009 - Added C2245 to product list.

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

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