

MSDS CODE: GR2
 Date Revised: 01/20/2009
 Prepared By: Kartik Patel

Reason for Revision: See Section 16

1. CHEMICAL, PRODUCT AND COMPANY IDENTIFICATION:

Product Code(s): **5376**
 Product Name: Chromium Oxide Green
 Chemical Family: Inorganic Metal Oxide
 Synonyms: Chrome (III) Oxide (Trivalent),
 C.A.S. Number: 1308-38-9
 Color Index Name: Pigment Green 17
 Color Index Number: 77288

Supplier'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
Chrome (III) Oxide	1308-38-9	(98-100)	0.5 mg/m ³ *	0.5 mg/m ³ *
Chromic Acid & Chromate (as Cr+6)	13530-68-2	(<500 ppm)	0.005 mg/m ³ *	Not established.

*Time Weighted Average (TWA) for Chrome (III) compounds (as Cr).

Note: OSHA issued final standard on Hexavalent Chromium is considered to be a hazardous chemical under 29 CFR 1910.1200. Hexavalent Chromium is considered to be a hazardous chemical under 29 CFR 1910.1200.
 Chromium on Feb 28, 2006. Effective date is May 29,2006. Refer to OSHA News
 Release: 06-342-NAT.

Non-Hazardous Ingredients:

Non-Hazardous Ingredients:			Exposure Limits (8 Hrs.TWA)	
Components:	C.A.S.	%	OSHA PEL	ACGIH TLV
-None-				

3. HAZARDS IDENTIFICATION

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

Dry, green powder with little to no odor. Will not burn or react. Long-term inhalation can cause lung irritation or chronic respiratory effects. Packaging material can burn or melt in fire, producing toxic smoke and fumes.

HMIS Codes: H=1, F=0, R=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: Ingestion causes stomachache, vomiting and diarrhea.
 Inhalation: Inhalation causes coughing, sneezing and respiratory problems..

Human Effects and symptoms of overexposure:

Acute: On the basis of Animal Toxicity Data we would expect this product to be non-irritating to the eyes and skin and to be 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. As with all dusty materials, inhalation may cause respiratory irritation, sneezing, coughing and runny nose. Good personal hygiene

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and the use of protective creams will minimize this effect. To date, adverse health effects from exposure have not been reported among workers using this pigment.

Chronic: Repeated or Prolonged inhalation of trivalent chromium compounds may cause chronic respiratory effects. (ACGIH "Documentation of the Threshold Limit Values").

Other Effects: None known.

Medical Conditions Aggravated by Exposure: Persons with pre-existing eye conditions or impaired pulmonary function may be more susceptible to the effects of this product.

Carcinogenicity: IARC: Not Listed NTP: Not Listed OSHA: Not regulated

Other: NTP, IARC and ACGIH found "there is sufficient evidence for the carcinogenicity of Chromium and Certain Chromium Compounds both in humans and experimental animals." The Chromium compounds that are considered carcinogenic are Hexavalent chromium compounds. This product is a trivalent chromium compound that contains less than 500 ppm (0.050%) leachable hexavalent chromium. Trivalent chromium is not specifically listed as a carcinogen by NTP, IARC or ACGIH.

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: 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: This is a heat stable material. Will not auto 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 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. 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.

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Storage Temperature (Min/Max) : Ambient/50°C (122°F)
 Shelf Life : Unlimited in closed container
 Special Sensitivity : None Known
 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 Green Powder
 Odor : Odorless
 Physical State : Dry Powder
 pH : 5 - 7 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)..... : 5.2 to 5.5 @ 20°C (68°F); DIN 787/10
 Bulk Density (kg/m³) : 800 @ 20°C (68°F)
 Particle Size (microns)..... : 0.3
 Volatile Organic Compounds (VOC)..... : None
 Chemical Formula..... : Cr₂O₃
 C.A.S. Number..... : 1308-38-9

10. STABILITY AND REACTIVITY

Chemical Stability (Conditions to Avoid): Stable.
 Incompatibility (materials to avoid): No known material incompatibilities
 Decomposition Temperature C° (F°): Does not decompose
 Hazardous Decomposition Products: None
 Hazardous Polymerization: Will not occur

11. TOXICOLOGICAL INFORMATION

Eyes: Not irritating to rabbit eyes. Mechanical irritant only.
 Skin: Not irritating to rabbit skin Dermal, LD₅₀ not established for product.
 Ingestion: Non irritating. The oral, LD₅₀ for rats is greater than 10,000 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): Information not available.

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12. ECOLOGICAL INFORMATION

Ecotoxicological Information: Fish toxicity: Golden Orfe (*Leuciscus idus*) LCo greater than 1,000 mg/l. No harmful effects on *Escherichia Coli* at 1,000 mg/l. Nor harmful effects on *Pseudomonas Fluoresceus* at 10,000 mg/l.

Chemical Fate Information: Information not available..

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 meets the criteria of EP toxicity, and should be managed as 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). Average leachable hexavalent chromium content is 500 ppm.

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..... : Chromium Compound; NOI

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): Chromium and compounds. No Reportable Quantity (RQ) has been established for this generic class. 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): Immediate (acute) health hazard, Delayed (chronic) health hazard

Section 313 (Reportable Toxic Ingredients):
 Chemical Name: C.A.S. Concentration
 Chrome Compound Less than 70% total Chrome (Cr)

T.S.C.A.: This product is listed on TSCA Inventory.

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

Canadian WHMIS: Chrome (III) Oxide 1308-38-9 Approximately 100%
 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).

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***** 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
- CN1 = Canada WHMIS Ingredient Disclosure List over 1%

Chemical Name:	C.A.S.	Concentration	State Code
Chrome (III) Oxide	1308-38-9	Approximately 100%	PA3,MA,NJ4,CN1
Hexavalent Chromium (Cr+6) Leachable hexavalent chromium	18540-29-9	<500 ppm	CA,MA
Lead	7439-92-1	<1 ppm	CA,MA
Cadmium	7440-43-9	<1 ppm	CA,MA
Arsenic	7440-38-2	<1 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:
- 1/11/2006 - Updated review date.
 - 3/09/2006 - OSHA Issues Final Standard on Hexavalent Chromium dated Feb 28, 2006. Cr+6 limits lowered from 0.052 mg to 0.005 mg/m³. Revised Ingestion and Inhalation text in sections 3 and 4. Removed P value from HMIS Codes.
 - 1/20/2009 - Updated document revised date

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