

SECTION 5 – FIRE-FIGHTING MEASURES

Suitable extinguishing media: Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media: Not known.

Specific hazards arising from the chemical: Avoid generating dust; fine dust dispersed in air in sufficient concentrations and in the presence of an ignition source is a potential dust explosion hazard. Hazardous combustion products: carbon, nitrogen and oxides of metals present in the product, low molecular weight organic compounds.

Special Protective Equipment and Precautions for fire-fighters: Wear NIOSH or OSHA approved self-contained breathing apparatus in positive pressure mode with full face piece and full protective gear. Isolate the scene by removing all persons from the incident area. No action should be taken involving any personal risk or without suitable training.

Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Ensure adequate ventilation/exhaust extraction. Avoid breathing dust during clean up. Take precautionary measures against static discharges when cleaning up. Use protective equipment as described in Section 8.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater, basements or confined areas. Inform the relevant authorities if the product has caused environmental pollution. Water polluting material. See Section 12 for more details.

Methods and materials for containment and cleaning up: Move containers from spill area. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with HEPA filter and place in a designated labeled waste container. Seal the container, and properly dispose of the waste material in accordance with existing federal, state and local regulations. Residues from spill cleanup may continue to be regulated under provisions of RCRA and require storage and disposal as hazardous waste. For major spills, see Section 1 for the Emergency contact; for further disposal measures, see Section 13.

SECTION 7 – HANDLING AND STORAGE

Precautions for safe handling: Avoid generating and do not breathe dust. Do not rely on your sight to determine if dust is in the air. Use adequate ventilation and dust collection methods to keep airborne levels below the exposure limits. Maintain and test ventilation and dust collection equipment. Do not permit dust to collect on walls, floors, sills, ledges, machinery, or equipment. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Take precautionary measures against static discharges. Wear appropriate respiratory, eye and skin protection. Avoid contact with skin and eyes. Wash hands thoroughly after handling. Hands and/or face should be washed before eating, drinking and smoking and at the end of the shift. Remove contaminated clothing and protective equipment before entering eating areas. Wash or vacuum clothing when becomes dusty.

Conditions for safe storage, including any incompatibilities: Store in a dry, cool and well-ventilated area, protected from direct sunlight and away from incompatible materials (see Section 10 for details), food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed.

Storage stability: Stable under normal conditions.

Employee education and training in the safe use and handling of this product are required under the OSHA Hazard Communication Standard 29 CFR 1910.1200. Employees and consumers should be warned of health risks associated with product use. See Section 8 for additional information on hygiene measures.

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters/Occupational exposure limit values: Results are listed in Section 15.

Appropriate engineering controls: Good local and general ventilation and wet methods should be sufficient to control worker exposure to airborne contaminants below recommended exposure limits. Local exhaust may be required in some areas.

Personal protective equipment:

Eye/face protection:

When directly handling product, eye protection is required. Examples of eye protection include safety glasses with side shields or chemical goggles. Contact lenses should not be worn when working with this product. Dust can get under the lenses and cause abrasion of the cornea.

Skin/body protection:

Impervious gloves should be worn when working with this product. Do not rely on barrier creams in place of impervious gloves. Do not get product inside gloves. Body should be covered with appropriate clothing (apron, arm covers or full body suit) depending on the task being performed and the risks involved. Appropriate footwear should be also selected based on the task being performed and the risks involved. Wash contaminated clothing when becomes dusty.

Respiratory protection:

Use local or general ventilation to control exposures below applicable exposure limits.

Use properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product, and assigned protection factor of the selected respirator.

Additional Protective Measures: Educate and train employees in safe handling of this product. Follow all label instructions. As a general hygiene practice, wash hands and face after use. Clean water should always be readily available for emergency skin and eye washing.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES	
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Appearance:	Powder
Odor:	Odorless
Odor threshold:	Not applicable
pH:	Not available
Melting point/ freezing point:	Not available
Initial boiling point and boiling range:	Not available
Flash point:	Not applicable
Evaporation rate:	Not applicable
Flammability (solid, gas):	Not available
Upper/ lower flammability or explosive limits:	Not applicable
Vapor pressure:	Not applicable
Vapor density:	Not applicable
Relative density:	Not available
Solubility (water):	Insoluble
Partition coefficient n-octanol/water:	Not available
Auto-ignition temperature:	Not available
Decomposition temperature:	Not available
Viscosity:	Not applicable

SECTION 10 – STABILITY AND REACTIVITY
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Reactivity: Product will not undergo hazardous polymerization. Corrosive effects to metal are not anticipated.

Chemical stability: Stable under recommended storage conditions.

Conditions to avoid: Generation of dust, open flame and sparks.

Incompatible materials: Not known.

Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced. In fire conditions, depending on temperature, air supply and presence of other materials, decomposition products can include, but are not limited to carbon, nitrogen and oxides of metals present in the product, low molecular weight organic compounds.

SECTION 11 – TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Skin and Eye Contact, Inhalation and Ingestion.

Symptoms of exposure:

Acute toxicity:

Oral: Not anticipated.

Dermal: No data available.

Inhalation: No data available.

Skin corrosion / irritation: No irritating effect.

Serious eye damage / eye irritation: No irritating effect.

Specific target organ toxicity, single exposure: No data available.

Aspiration hazard: Not an aspiration hazard.

Chronic toxicity:

Respiratory and Skin Sensitizer:

Chromium (III) compounds may cause allergic skin reaction in some people. Available data are not sufficient for classification.

Germ cell mutagenicity:

No sufficient data available.

Carcinogenicity:

Chromium (III) compounds are listed by IARC: Group 3 (Not Classifiable as to its Carcinogenicity to Humans).

Reproductive toxicity:

No sufficient data available.

Specific target organ toxicity, repeated exposure:

No sufficient data available.

Medical conditions aggravated by overexposure: Respiratory tract irritation.

Toxicity test results: Not available for the mixture. Results for components, where available:

<p>Azo metal complex (Copper Compound), CAS #: Trade Secret</p>	<p><u>Acute Toxicity:</u> Oral LD50 (Rat): > 5,000 mg/kg. Virtually nontoxic after a single ingestion. Dermal LD50 (Rat): No data available. Inhalation LC50: No data available. Skin corrosion/irritation (Rabbit): No irritating effect. Serious eye damage/eye irritation (Rabbit): No irritating effect. STOT, SE: No data available. Aspiration hazard: No.</p> <p><u>Chronic toxicity:</u> Sensitization, skin and respiratory: The chemical structure does not suggest a sensitizing effect. Germ cell mutagenicity: The substance was not mutagenic in bacteria. Carcinogenicity: No data available concerning carcinogenic effects. Reproductive toxicity: No data available. STOT, RE: No data available.</p>
<p>General info about Chromium (III) Compounds</p>	<p>Probable routes of human exposure to chromium and chromium compounds are by ingestion and inhalation.</p> <p><u>Acute Toxicity:</u> Water-insoluble chromium(III) compounds and chromium metal are not considered a health hazard, while hexavalent chromium compounds have extreme toxicity from inhalation and oral exposure and are known carcinogen and reproductive hazard. The trivalent and hexavalent forms are believed to be the biologically active species, but their health impacts are not identical, in part because hexavalent chromium readily penetrates biological membranes while chromium (III) generally does not. Health effects of exposure to Chromium based azo dyes: Eye and skin contact may cause irritation. Inhalation may cause irritation. May cause sensitization by skin contact. No other effects of exposure have been observed.</p> <p><u>Chronic toxicity:</u> Sensitization, skin and respiratory: Chromium salts (chromates) are also the cause of allergic reactions in some people. Contact with products containing chromates can lead to allergic contact dermatitis and irritant dermatitis, resulting in ulceration of the skin, sometimes referred to as "chrome ulcers".</p> <p>Although data from animal studies have identified the respiratory tract as the major target organ for chronic chromium exposure, they do not demonstrate that the effects observed following inhalation of hexavalent chromium particulates are relevant to inhalation of chromium (III). Reproductive toxicity: No information is available on the reproductive or developmental effects of chromium (III) in humans. A study of mice fed high levels of chromium (III) in their drinking water has suggested a potential for reproductive effects, although various study characteristics preclude a definitive finding. No developmental effects were reported in the offspring of rats fed chromium (III) during their developmental period. Carcinogenicity: No data are available on the carcinogenic potential of chromium (III) compounds alone. Listed on IARC: Group 3 (Not classifiable); EPA: Group D (Not classifiable as to carcinogenicity in humans). Only the hexavalent form of chromium (CAS #: 18540-29-9) is listed in IARC Group 1 (human carcinogen). Epidemiological studies of workers have clearly established that inhaled hexavalent chromium is a human carcinogen, resulting in an increased risk of lung cancer. Chronic inhalation affects also fine capillaries in kidneys and intestines. STOT, RE: The respiratory tract following inhalation.</p>

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity: Acutely and chronically hazardous for aquatic organisms. This product consists of chromium compounds which are present in complex bound form as substantial constituent of the colorant. Do not dispose in the environment.

Persistence and degradability: Not readily biodegradable by OECD criteria.

Bioaccumulative potential: Not known.

Mobility in soil: Not known.

Other adverse effects: Not known.

Ecotoxicity test results: Not available for the mixture. Results for components, where available:

<p>Azo metal complex (Copper Compound), CAS #: Trade Secret</p>	<p><u>Acute Toxicity:</u> Harmful to aquatic life. Fish (Zebrafish), 96hrs: LC50: 10 - 100 mg/L (OECD Test Guideline 203, static). Aquatic Invertebrates (Daphnia magna), 48hrs: EC50: 65.3mg/L (OECD Test Guideline 202, part 1, static) <u>Microorganisms</u> (activated sludge, domestic, non-adapted), 0.5hrs: EC20: > 1,000 mg/L (OECD Guideline 209) Nominal concentration. The value meets the highest applied test concentration. Inhibition of degradation activity in activated sludge is not to be anticipated during correct introduction of low concentrations. <u>Chronic toxicity:</u> Harmful to aquatic life with long lasting effects. <u>Ecological data:</u> Persistence and degradability: Colorants are by their nature very stable and are therefore not readily biodegradable under conditions prevailing in surface water or in effluent treatment plants. The product is virtually insoluble in water and can thus be separated from water mechanically in suitable effluent treatment plants. Bioaccumulative potential: Low. Mobility in soil: No data available.</p>
<p>General info about Chromium (III) Compounds</p>	<p><u>Aquatic Toxicity:</u> of Chromium complexes ranges from harmful to very toxic to aquatic life with long lasting effects. <u>Ecological data:</u> Persistence and degradability: Colorants are by their nature very stable and are therefore not readily biodegradable under conditions prevailing in surface water or in effluent treatment plants. The product is virtually insoluble in water and can thus be separated from water mechanically in suitable effluent treatment plants. Bioaccumulative potential: No data available. Mobility in soil: No data available.</p>

SECTION 13 – DISPOSAL CONSIDERATIONS

Product Disposal: The generation of waste should be avoided or minimized wherever possible. If product becomes a waste, it meets criteria of hazardous waste as defined in 40 CFR 261, Subpart C and D. Do not discharge into sewer system. Dispose waste in compliance with local, state and federal regulations via licensed waste disposal contractor.

Released: March 15, 2016
RCRA Hazardous Waste Code: Unlisted hazardous wastes characteristic of toxicity: D007 (Chromium) RQ: 10 lbs

Container disposal: Even after emptying, container may retain residues. Containers should be completely emptied and safely stored until appropriately reconditioned or disposed through licensed contractor in accordance with government regulation. This material and its container must be disposed of in a safe way.

SECTION 14 – TRANSPORT INFORMATION
Land transport, U.S. DOT: Non-regulated
Sea transport, IMDG: Non-regulated
Air transport, IATA/ICAO: Non-regulated

SECTION 15 – REGULATORY INFORMATION
U.S. Regulations:
OSHA HCS: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29CFR 1910.1200.

TSCA Regulations:

All components of this product are listed or are exempt from TSCA Inventory requirements under 40 CFR 720.30.

EPCRA Section 302 (40 CFR Part 355) (Emergency Response Planning, Extremely Hazardous Substance):

No components are subject to the reporting.

EPCRA Section 304 (40 CFR Part 355) (Emergency Release Notification Requirements):

No components are subject to the reporting.

EPCRA Sections 311 & 312 (Hazardous Chemical Inventory Reporting, Hazard Categories):

Fire Hazard

EPCRA Section 313 (40 CFR Part 372) (Toxic Chemical Release Inventory Reporting):

The following components of this product are present above De Minimis level and therefore require reporting:

- Copper Compounds, CAS #: N/A, N100: in product: >1% De Minimis: 1.0%
- Chromium Compounds, CAS #: N/A, N090: in product: >1% De Minimis: 1.0% (for Chromium (III) Compounds)

CERCLA Sections 102-103 (40 CFR Part 302) (Hazardous Substances Release Notification):

The following components are listed:

- Copper Compounds, CAS #: N/A, N100: RQ: Not assigned
- Chromium Compounds, CAS #: N/A, N090: RQ: Not assigned

Clean Air Act:

- Ozone Depleting Substances (ODS): This product does not contain and is not manufactured with ozone depleting substances.
- Hazardous Air Pollutants, OSHA, Section 112(b), Table Z-1 and Table Z-3:

Substance		Regulatory Limits			Recommended Limits	
		OSHA PEL		Cal/OSHA PEL	NIOSH REL	ACGIH® 2015 TLV®
		mppcf	mg/m ³	(as of 4/26/13) 8hrs TWA, mg/m ³	(as of 4/26/13) Up to 10hrs TWA, mg/m ³	8hrs TWA, mg/m ³
Copper, CAS #: 7440-50-8	Fume (as Cu)	-	0.1	0.1	0.1	0.2
	Dusts and mists (as Cu)	-	1	1	1	1
Chromium (III) Compounds (as Cr), CAS #:7440-47-3		-	0.5	0.5	0.5 See Appendix C	0.5
Inert or Nuisance Dust	Total dust	50	15	10 (as PNOR)	See Appendix D	10
	Respirable fraction	15	5	5 (as PNOR)	See Appendix D	3

mppcf – millions of particles per cubic foot; Appendix D refers to Appendixes of Hazardous Air Pollutants List, Section 112(b) of Clean Air Act

 IDLH: Copper Compounds, CAS #: N/A: 100 mg/m³ Cu dust and mist

Clean Water Act:

- Section 307(a)(1): The following components are subject to the reporting:
 - Copper and compounds, CAS #: N/A
 - Chromium Compounds, CAS #: N/A
- Section 311(b): No components are subject to the reporting.

NFPA rating: Health: 1 Fire: 1 Reactivity: 0 Special: 0

HMIS rating: Health: 1 Flammability: 1 Physical hazard: 0

State Regulations:

California Prop. 65 Components:

Based on available information, this product does not contain components known to State of California to cause cancer, birth defects, or any other reproductive harm.

Instruction: for regulatory information on components of this mixture, check the appropriate state websites.

International Regulations/Inventories:

Canadian Regulations: All ingredients of this product are listed or are exempt from the DSL.

WHMIS Classification (Controlled Products Regulations): Non-controlled

SECTION 16 – OTHER INFORMATION

LEGEND

GHS	Globally Harmonized System
CAS	Chemical Abstracts Services
EC	European Community
EPA	Environmental Protection Agency
OSHA	Occupational Safety and Health Administration
ACGIH	American Conference of Governmental Industrial Hygienists
NIOSH	National Institute of Occupational Safety and Health
PEL	Permissible Exposure Limits
TLV	Threshold Limit Value
REL	Recommended Exposure Limit
TWA	Time-Weighted Average
STEL	Short-term exposure limit
IARC	International Agency for Research on Cancer
NTP	National Toxicology Program
STOT, SE	Specific Target Organ Toxicity following Single Exposure
STOT, RE	Specific Target Organ Toxicity following Repeated Exposure
DOT	Department of Transportation
IMDG	International maritime dangerous goods code
IATA, ICAO	International Air Transport Association, International Civil Aviation Organization
TSCA	Toxic Substances Control Act
EPCRA	Emergency Planning and Community Right-to-Know Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
RQ	Reportable Quantity
DSL	Domestic Substance List
WHMIS	Workplace Hazardous Materials Information System

Latest revision date: March 15, 2016 – Preparation of SDS in accordance to the GHS requirements

Date of the previous revision: Not available.

Disclaimer: The data set forth in this sheet are based on information provided by the suppliers of the raw materials and chemicals used in the manufacture of the aforementioned product. Rhino Linings Corporation makes no warranty with respect to the accuracy of the information provided by their suppliers, and disclaims all liability of reliance thereof.