MATERIAL SAFETY DATA SHEET

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Section 1 - Product and Company Information Product Name CHROMIUM POTASSIUM SULFATE DODECAHYDRAT& Product Number C5926 Brand SIGMA Company Sigma-Aldrich Canada, Ltd Address 2149 Winston Park Drive Oakville ON L6H 6J8 CA Technical Phone: 9058299500 Fax: 9058299292 Emergency Phone: 800-424-9300 Section 2 - Composition/Information on Ingredient Substance Name SARA 313 CAS # CHROMIUM POTASSIUM SULFATE 7788-99-0 Yes DODECAHYDRATE ACS REAGENT KCr(SO4)2 · 12H2O Formula Chrome alum (dodecahydrate) * Potassium chromium Synonyms alum dodecahydrate * Sulfuric acid, chromium(3+)potassium salt(2:1:1), dodecahydrate GB6850000 RTECS Number: Section 3 - Hazards Identification EMERGENCY OVERVIEW Caution: Avoid contact and inhalation. HMIS RATING HEALTH: 1 FLAMMABILITY: 0 REACTIVITY: 0 NFPA RATING HEALTH: 1 FLAMMABILITY: 0 REACTIVITY: 0 For additional information on toxicity, please refer to Section 11. Section 4 - First Aid Measures ORAL EXPOSURE If swallowed, wash out mouth with water provided person is conscious. Call a physician. INHALATION EXPOSURE If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

DERMAL EXPOSURE In case of contact, immediately wash skin with soap and copious amounts of water. EYE EXPOSURE In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician. Section 5 - Fire Fighting Measures FLASH POINT N/A AUTOIGNITION TEMP N/A FLAMMABILITY N/A EXTINGUISHING MEDIA Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam. FIREFIGHTING Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Emits toxic fumes under fire conditions. Section 6 - Accidental Release Measures PROCEDURE(S) OF PERSONAL PRECAUTION(S) Exercise appropriate precautions to minimize direct contact with skin or eyes and prevent inhalation of dust. METHODS FOR CLEANING UP Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete. Section 7 - Handling and Storage HANDLING User Exposure: Avoid inhalation. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure. STORAGE Suitable: Keep tightly closed. Section 8 - Exposure Controls / PPE ENGINEERING CONTROLS Safety shower and eye bath. Mechanical exhaust required. PERSONAL PROTECTIVE EQUIPMENT Respiratory: Use respirators and components tested and approved

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or

type P1 (EN 143) dust masks. Hand: Protective gloves. Eye: Chemical safety goggles. GENERAL HYGIENE MEASURES Wash thoroughly after handling. EXPOSURE LIMITS, RTECS Country Source Туре Value USA ACGIH TWA 0.5 MG(CR)/M3 MSHA Standard-air TWA USA 1 MG(CR)/M38H TWA 0.5 MG(CR)/M3 USA OSHA. DET. Section 9 - Physical/Chemical Properties Appearance Physical State: Solid Color: Deep violet Form: Crystalline Odor: Odorless Property Value At Temperature or Pressure 499,0000 AMU Molecular Weight рΗ N/A BP/BP Range N/A MP/MP Range 89,000 °C N/A Freezing Point Vapor Pressure N/A Vapor Density N/A Saturated Vapor Conc. N/A SG/Density 1,8300 g/cm3 Odor Threshold N/A Volatile% N/A VOC Content N/A Water Content N/A Solvent Content N/A N/A Evaporation Rate Viscosity N/A Surface Tension N/A Partition Coefficient N/A N/A Decomposition Temp. Flash Point N/A Explosion Limits N/A N/A Flammability Autoignition Temp N/A Refractive Index N/A Optical Rotation N/A Miscellaneous Data N/A Solubility Solubility in Water:Soluble. N/A = not availableSection 10 - Stability and Reactivity STABILITY Stable: Stable.

Materials to Avoid: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS Hazardous Decomposition Products: Sulfur oxides. HAZARDOUS POLYMERIZATION Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE Skin Contact: May cause skin irritation. Skin Absorption: May be harmful if absorbed through the skin. Eye Contact: May cause eye irritation. Inhalation: May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract. Ingestion: May be harmful if swallowed. SIGNS AND SYMPTOMS OF EXPOSURE To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. TOXICITY DATA Intravenous Rat 112 MG/KG LD50 CHRONIC EXPOSURE - CARCINOGEN Species: Rat Route of Application: Subcutaneous Dose: 135 MG/KG Result: Tumorigenic: Tumors at site or application. Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. ACGIH CARCINOGEN LIST Rating: A4 Section 12 - Ecological Information No data available. Section 13 - Disposal Considerations APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local

Section 14 - Transport Information

environmental regulations.

DOT

Proper Shipping Name: None Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

IATA

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Non-Hazardous for Air Transport: Non-hazardous for air transport.
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EU ADDITIONAL CLASSIFICATION S: 22-24/25 Safety Statements: Do not breathe dust. Avoid contact with skin and eyes. US CLASSIFICATION AND LABEL TEXT US Statements: Caution: Avoid contact and inhalation. UNITED STATES REGULATORY INFORMATION SARA LISTED: Yes DEMINIMIS: 1,000 % NOTES: This product is subject to SARA section 313 reporting requirements - chromium compounds. CANADA REGULATORY INFORMATION WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR. DSL: No NDSL: No

Section 16 - Other Information

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2010 Sigma-Aldrich Co. License granted to make unlimitedpaper copies for internal use only.