

CHROMIUM (III) POTASSIUM SULFATE DODECAHYDRATE

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1. Product Identification

Synonyms: Chrome alum dodecahydrate; sulfuric acid, chromium (3+) potassium salt (2:1:1) dodecahydrate; Chromium Potassium Sulfate, 12-Hydrate

CAS No.: 7788-99-0 (Dodecahydrate)

Molecular Weight: 499.48

Chemical Formula: $\text{CrK}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$

Product Codes: CHEM-050 and others

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Chromium Potassium Sulfate	10141-00-1	90 - 100%	Yes

3. Hazards Identification

Emergency Overview

WARNING! HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

SAF-T-DATA^(tm) Ratings

Health Rating: 3 - Severe (Life)

Flammability Rating: 0 - None

Reactivity Rating: 0 - None

Contact Rating: 3 - Severe

Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES

Storage Color Code: Green (General Storage)

Potential Health Effects

Inhalation:

Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath. May cause headache, dyspnea, and fever. May also cause tracheobronchial irritation and pulmonary edema.

Ingestion:

Causes irritation to the gastrointestinal tract. Large oral doses may cause dizziness intense thirst, abdominal pain, vomiting, and shock. Death may occur from renal failure. Chromium compounds in the 3+ state have a much lower toxicity than those in the 6+ state.

Skin Contact:

Causes irritation to skin. Symptoms include redness, itching, and pain. Prolonged contact may cause skin ulcerations.

Eye Contact:

Causes irritation, redness, and pain. Prolonged contact may cause eye damage.

Chronic Exposure:

Prolonged or repeated skin exposure may cause dermatitis. Prolonged or repeated inhalation of dust may cause perforation of the nasal septum.

Aggravation of Pre-existing Conditions:

Persons with pre-existing skin conditions or impaired respiratory function may be more susceptible to the effects of this substance.

4. First Aid Measures

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion:

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

Skin Contact:

Immediately flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse.

Thoroughly clean shoes before reuse.

Eye Contact:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire Fighting Measures

Fire:

Not considered to be a fire hazard.

Explosion:

Not considered to be an explosion hazard.

Fire Extinguishing Media:

Use any means suitable for extinguishing surrounding fire.

Special Information:

Use protective clothing and breathing equipment appropriate for the surrounding fire.

6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from incompatible substances. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:

OSHA Permissible Exposure Limit (PEL):

for Cr(III) compounds = 0.5mg/m³ (TWA)

ACGIH Threshold Limit Value (TLV):

for Cr(III) compounds = 0.5 mg/m³ (TWA), A4 - Not classifiable as a human carcinogen

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):

If the exposure limit is exceeded and engineering controls are not feasible, a half facepiece particulate respirator (NIOSH type N95 or better filters) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece particulate respirator (NIOSH type N100 filters) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:

Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:

Red-violet to nearly black granules.

Odor:

Odorless.

Solubility:

No information found.

Specific Gravity:

1.83

pH:

No information found.

% Volatiles by volume @ 21°C (70°F):

0

Boiling Point:

No information found.

Melting Point:

Loses water @ 89°C ; Loses all water @ 400°C (752°F)

Vapor Density (Air=1):

No information found.

Vapor Pressure (mm Hg):

No information found.

Evaporation Rate (BuAc=1):

No information found.

10. Stability and Reactivity

Stability:

Stable under ordinary conditions of use and storage. Aqueous solution slowly becomes green on heating and recovers reddish-violet colors on cooling.

Hazardous Decomposition Products:

Burning may produce sulfur oxides.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Aluminum and magnesium.

Conditions to Avoid:

Heat, flames, ignition sources and incompatibles.

11. Toxicological Information

Toxicological Data:

Chromium potassium sulfate (anhydrous):

Rat LD50: Oral 3530 mg/kg

Investigated as a tumorigen, mutagen.

Carcinogenicity:

ACGIH classification: Group A4 - Not classifiable as a human carcinogen.

----- \ Cancer Lists \ -----

—NTP Carcinogen—

Ingredient	Known	Anticipated	IARC Category
Chromium Potassium Sulfate (10141-00-1)	No	No	3

12. Ecological Information

Environmental Fate:

When released into the soil, this material may leach into groundwater. When released into water, this material is not expected to evaporate significantly. This material is not expected to significantly bioaccumulate. When released into the air, this material may be removed from the atmosphere to a moderate extent by wet deposition.

Environmental Toxicity:

Microtox data: Chromium (III) potassium sulfate, dodecahydrate (7788-99-0):

5 min EC50 Photobacterium phosphoreum: 10.7 mg/L (as Cr³⁺);

10 min EC50 Photobacterium phosphoreum: 12.6 mg/L (as Cr³⁺);

15 min EC50 Photobacterium phosphoreum: 15.3 mg/L (as Cr³⁺);

20 min EC50 Photobacterium phosphoreum: 15.8 mg/L (as Cr³⁺);

30 min EC50 Photobacterium phosphoreum: 16.0 mg/L (as Cr³⁺)

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Not regulated.

15. Regulatory Information

----- \Chemical Inventory Status - Part 1\ -----				
Ingredient	TSCA	EC	Japan	Australia
Chromium Potassium Sulfate (10141-00-1)	Yes	Yes	Yes	Yes

----- \Chemical Inventory Status - Part 2\ ----- ----- -Canada-----				
Ingredient	Korea	DSL	NDSL	Phil.
Chromium Potassium Sulfate (10141-00-1)	Yes	Yes	No	Yes

----- \Federal, State & International Regulations - Part 1\ ----- ----- -SARA 302- ----- -SARA 313-----				
Ingredient	RQ	TPQ	List	Chemical Catg.
Chromium Potassium Sulfate (10141-00-1)	No	No	No	Chromium com

----- \Federal, State & International Regulations - Part 2\ ----- ----- -RCRA- -TSCA-			
Ingredient	CERCLA	261.33	8(d)
Chromium Potassium Sulfate (10141-00-1)	No	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No

SARA 311/312: Acute: Yes Chronic: Yes Fire: No Pressure: No

Reactivity: No (Pure / Solid)

Australian Hazchem Code: None allocated.

Poison Schedule: None allocated.

WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: 1 Flammability: 0 Reactivity: 0

Label Hazard Warning:

WARNING! HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

Label Precautions:

Avoid contact with eyes, skin and clothing.

Avoid breathing dust.

Keep container closed.

Use only with adequate ventilation.

Wash thoroughly after handling.

Label First Aid:

If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. In all cases, get medical attention.

Product Use:

Laboratory Reagent , Mordant for Natural Dyesand Consumer Hobby

Revision Information:

No Changes.

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