



SAFETY DATA SHEET

According to OSHA Hazard Communication Standard 2012



Distributed by:
Laguna Clay Company
14400 Lomas Ave
City of Industry, CA 91746
1-800-4Laguna
info@lagunaclay.com
www.lagunaclay.com

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1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Identifier

Product name: Potassium Dichromate

Other means of identification

Synonyms Potassium Bichromate; Chromic Acid; Dipotassium salt

Recommended use of the chemical and restrictions on use

Product Use Description: Surface treatment Intermediate

Details of the supplier of the safety data sheet

Company/Undertaking Identification

Elementis Chromium Inc.
3800 Buddy Lawrence Dr.
Corpus Christi, Texas 78407
USA
Tel: +1 (800) 531- 3188

Elementis Chromium Inc.
5408 Holly Shelter Road
Castle Hayne, NC 28429
USA
Tel: +1 (910) 675-7223

Emergency Telephone Number

For hazardous materials incidents only call
CHEMTREC Emergency Response Number: 1-800-424-9300 (+1-703-527-3887
International)

sds.chromium@elementis.com

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute Toxicity - Oral	Category 3
Acute Toxicity - Dermal	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 2
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Respiratory sensitization	Category 1A
Skin Sensitization	Category 1
Germ Cell Mutagenicity	Category 1B
Carcinogenicity	Category 1B
Reproductive toxicity	Category 1B
Specific target organ toxicity (repeated exposure)	Category 1
Oxidizing solids	Category 2

Label Elements

EMERGENCY OVERVIEW

Danger

Hazard Statements

Toxic if swallowed
 Harmful in contact with skin
 Causes severe skin burns and eye damage
 May cause an allergic skin reaction
 Fatal if inhaled
 May cause allergy or asthma symptoms or breathing difficulties if inhaled
 May cause genetic defects
 May cause cancer
 May damage fertility or the unborn child
 Very toxic to aquatic life with long lasting effects
 Causes damage to organs through prolonged or repeated exposure
 May intensify fire; oxidizer

**Appearance:** Crystalline**Physical state:** Solid**Odor:** Odourless**Precautionary Statements - Prevention**

Obtain special instructions before use
 Do not breathe dust/fume/gas/mist/vapors/spray
 Do not get in eyes, on skin, or on clothing
 Do not eat, drink or smoke when using this product
 Wash hands thoroughly after handling
 Wear respiratory protection
 Wear protective gloves/protective clothing/eye protection/face protection
 Contaminated work clothing should not be allowed out of the workplace
 Keep/Store away from clothing/ incompatible /combustible materials
 Keep away from heat/sparks/open flames/hot surfaces. — No smoking
 Avoid release to the environment

Precautionary Statements - Response

IF exposed: Call a POISON CENTER or doctor/physician
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 Immediately call a POISON CENTER or doctor/physician
 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
 Take off contaminated clothing and wash before reuse
 Call a POISON CENTER or doctor/physician
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
 Immediately call a POISON CENTER or doctor/physician
 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
 Rinse mouth
 Do NOT induce vomiting
 In case of fire: Use Water spray, fog or regular foam for extinction
 Carbon dioxide (CO₂)

Precautionary Statements - Storage

Store locked up
 Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)**Other Information**

Very toxic to aquatic life with long lasting effects

3. COMPOSITION/INFORMATION ON INGREDIENTS

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Chemical Family Inorganic Salt.
Formula K₂Cr₂O₇

Components	CAS-No	Weight %
Potassium dichromate	7778-50-9	100 %

4. FIRST AID MEASURES**FIRST AID MEASURES**

General Advice Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

Inhalation: IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, give oxygen. If breathing has stopped, apply artificial respiration. Call a physician immediately.

Skin contact: Wash off immediately with soap and plenty of water. Call a physician immediately.

Eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.

Ingestion Call a physician or Poison Control Center immediately. Do not induce vomiting without medical advice. If victim is fully conscious, give a cupful of water. If swallowed, seek medical advice immediately and show this SDS or label. Never give anything by mouth to an unconscious person.

Protection of first-aiders: Avoid contact with skin and eyes.

Most important symptoms and effects, both acute and delayed

Most Important Symptoms/Effects: Burning. Risk of serious damage to eyes. Difficulty in breathing. Dizziness. Drowsiness. Coughing and/ or wheezing. Abdominal pain, nausea, vomiting, diarrhea. May cause serious damage to health. Coma. Increased pulse rate. Weakness. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES**Suitable extinguishing media**

Use Water spray, fog or regular foam for extinction
Dry chemical
Carbon dioxide (CO₂)
Use extinguishing agent suitable for type of surrounding fire

Extinguishing media which must not be used for safety reasons

None

Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases
May intensify fire; oxidizer

Unusual Fire and Explosion Hazards:
Emits toxic fumes under fire conditions

Hazardous combustion products:
Chromium oxides

Explosion data

Explosive properties:
Not explosive

Reactivity Hazard:
May intensify fire; oxidizer May react with oxidizable materials

Special protective equipment for fire-fighters
In the event of fire, wear self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Use personal protective equipment.

Other Information: See Section 12 for additional information.

Environmental precautions

Environmental precautions: Do not allow material to contaminate ground water system. Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system. Do not allow any environmental contamination. Local authorities should be advised if significant spillages cannot be contained.

Methods and material for containment and cleaning up

Clean-up methods: Do not create a powder cloud by using a brush or compressed air. Take up with a HEPA vacuum or mechanically and collect in suitable container for disposal. Do not use combustible materials for containment or clean-up. Clean contaminated surface thoroughly. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Handling: Do not breathe vapours/dust. Avoid contact with skin, eyes and clothing. Wash hands thoroughly after handling. Wear personal protective equipment.

Conditions for safe storage, including any incompatibilities

Storage conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Keep product and empty container away from incompatible materials.

Additional Storage: Keep away from heat and sources of ignition

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters**Exposure Guidelines**

Components	ACGIH TLV	AIHA TLV	OSHA TWA	IDLH:
Potassium dichromate 7778-50-9	TWA (8hr): 0.05 mg/m ³ as Cr(VI)			

Components	OSHA PEL (8h TWA)	OSHA Action Level (8h TWA)	OES - Short-term STEL
Potassium dichromate	5 ug/m ³ Cr(IV)	2.5 ug/m ³ Cr(IV)	

Appropriate engineering controls**Engineering Measures**

Maintain adequate engineering controls and/or ventilation to keep hazardous ingredients below their statutory limits. Use an approved respirator whenever exposure limits are exceeded. It may be necessary, dependent on the users assessment of process employed to undertake a program of monitoring to demonstrate that statutory exposure limits are not exceeded

Individual protection measures, such as personal protective equipment**Eye protection**

Wear chemical goggles and full face shield appropriate for risk of exposure. Tightly fitting safety goggles.

Skin and body protection

Footwear and protective clothing should be selected according to the risk of exposure

Respiratory protection:

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Hand protection

Use chemical resistant gloves

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Ensure that eyewash stations and safety showers are close to the workstation location. Contaminated work clothing should not be allowed out of the workplace. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES**Information on basic physical and chemical properties**

Physical state:	Solid
Appearance:	Crystalline
Odor:	Odourless
Color:	Red Orange
Odor Threshold	No data available

<u>Property</u>	<u>Values</u>	<u>Remarks / • Method</u>
pH	4	at 10 g/l at 20 C
Melting point/range:	398 °C	
Freezing point:	No data available	
Boiling Point/Range	Not applicable	
Flash Point	Not applicable	
Evaporation rate	Not applicable	
Explosion limits:	No data available	
Vapor pressure	Not applicable	
Vapor density	Not applicable	
Density:	2.68 g/cm ³	@ 20 C

Water solubility	10% w/w at 20 C
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition temperature	No data available
Decomposition temperature	aprox. 500 (°C)
Viscosity:	No data available
Explosive properties:	Not explosive
Oxidizing Properties	No information available

Other Information

Percent Volatile:	Not applicable
Bulk Density	100 ft/cm ³ at 20 C

10. STABILITY AND REACTIVITY**Reactivity**

Oxidizer. Contact with other material may cause fire

Chemical Stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

See reactivity above

Conditions to Avoid

Heat, flames and sparks. Exposure to moisture

Incompatible Materials:

Reducing agents Organic materials Readily oxidizable materials

Hazardous Decomposition Products

No decomposition if stored normally; At high temperatures Chromium oxides

11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure**

Inhalation:	Fatal if inhaled. May cause irritation of respiratory tract.
Eye contact:	Causes burns. Risk of serious damage to eyes.
Skin contact:	Harmful in contact with skin. Causes severe burns.
Ingestion	Toxic if swallowed. May cause burns to mouth throat and stomach.

Product Information

The data listed, below, is based on this or a similar product:

Component Information

Components	LD50/Oral	LD50/Dermal	LC50/inhalation
Potassium dichromate 7778-50-9	57 mg/kg (Rat)	1.64 g/kg (Rabbit)	0.094 mg/l (Rat - 4h)

Information on Toxicological Effects**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

Corrosivity	Causes burns. Risk of serious damage to eyes.
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Sensitization May cause sensitization by skin contact May cause allergy or asthma symptoms or breathing difficulties if inhaled

Mutagenic effects May cause genetic defects.

Carcinogenic effects: The table below indicates whether each agency has listed any ingredient as a carcinogen

Components	ACGIH	IARC	NTP	OSHA
Potassium dichromate 7778-50-9		Group 1 - Carcinogen to human	Known Carcinogen	Cancer hazard

Reproductive Toxicity: May impair fertility

Developmental Toxicity May cause harm to the unborn child.

Chronic Toxicity

Chronic toxicity: May cause damage to organs through prolonged or repeated exposure

Target Organ Effects: Eyes, Skin, Liver, kidney, and respiratory system, Central nervous system, Reproductive system.

Other Adverse Effects: No information available.

12. ECOLOGICAL INFORMATION

Product Information See below

Ecotoxicity

Very toxic to aquatic life with long lasting effects

Components	Toxicity to Algae	Toxicity to Fish	Daphnia Magna (Water Flea)
Potassium dichromate 7778-50-9		96h, LC50, Pimephales promelas 37.0 mg/l as Cr	24h, EC50, Daphnia magna: 0.53 mg/l

Persistence and degradability:

Hexavalent chromium may react with particulate matter or pollutants to form Cr (III). In general, Chromium is removed from the atmosphere through wet and dry deposition.

Bioaccumulative potential:

Does not bioaccumulate

Mobility:

No data available

General Note:

Do not allow product to reach ground water, water course or sewage system.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues / unused products Do not contaminate ponds, waterways or ditches with chemical or used container Dispose of in accordance with Local and National regulations

Contaminated packaging Should be disposed of in accordance with Local and National regulations

RCRA Hazardous Waste:

RCRA: Characteristic Waste - D007 (Chromium)

14. TRANSPORT INFORMATION

U.S. Department of Transportation Ground (49 CFR):

UN-No: 3288
 Proper shipping name: Toxic solid, inorganic, n.o.s. (Potassium bichromate)
 Hazard Class: 6.1
 Packaging group: III
 Reportable Quantity (RQ): 10 lbs
 Marine pollutant: YES

International Air Transportation (ICAO/IATA):

UN-No: 3288
 Proper shipping name: Toxic solid, inorganic, n.o.s. (Potassium bichromate)
 Hazard Class: 6.1
 Hazard Labels: Toxic
 Packing group: III

International Maritime Organization (IMO/IMDG):

UN-No: 3288
 Proper Shipping Name: Toxic solid, inorganic, n.o.s. (Potassium bichromate)
 Hazard Class: 6.1
 Hazard Labels: Toxic
 Packing Group: III
 EmS: F-A, S-A
 IMDG - Marine Pollutants : Yes

Surface Shipments in Europe (ADR/RID):

UN-No: 3288
 Proper shipping name: Toxic solid, inorganic, n.o.s. (Potassium bichromate)
 Hazard Class: 6.1
 Packing group: III
 Hazard Labels: Toxic
 Environmental hazard mark: Yes

15. REGULATORY INFORMATION

International Inventories

USA (TSCA): In Compliance
 EU (EINECS): In Compliance
 CANADA (DSL): In Compliance
 JAPAN (ENCS): In Compliance
 PHILIPPINES (PICCS): In Compliance
 KOREA (KECL): In Compliance
 China (IECSC): In Compliance
 AUSTRALIA (AICS): In Compliance
 NEW ZEALAND (NZIoC): In Compliance
 TAIWAN (NECSI): In Compliance

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
 EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
 REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals
 DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
 ENCS - Japan Existing and New Chemical Substances
 PICCS - Philippines Inventory of Chemicals and Chemical Substances
 KECL - Korean Existing and Evaluated Chemical Substances
 IECSC - China Inventory of Existing Chemical Substances
 AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals
NECSI - Taiwan Inventory of Chemicals

Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Components	EPCRA (SARA Title III) Section 313 Toxic Chemical
Potassium dichromate 7778-50-9	Listed

SARA 311/312 Hazard Categories

Acute Health Hazard
 Chronic Health Hazard
 Reactive Hazard

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Components	U.S. - CWA (Clean Water Act) - Reportable Quantities of Designated Hazardous Substances	Toxic Pollutants	Priority Pollutants	Hazardous Substances
Potassium dichromate 7778-50-9	Chromium compounds - 10 lb	Present (Chrome compounds)	Present (Chrome compounds)	Present (Chrome compounds)

Clean Air Act: Hazardous Air Pollutant

Components	Hazardous Air Polutants
Potassium dichromate	Present (Chrome compounds)

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Components	CERCLA/SARA - Hazardous Substances and	CERCLA/SARA RQ	Reportable Quantity (RQ)
Potassium dichromate 7778-50-9		Chrome compounds - 10 lbs	

TSCA Section 12(b) Export Notification

Components	TSCA Section 12(b) Export Notification
Potassium dichromate (CAS # 7778-50-9)	Section 6 0.1% see 40 CFR 749.68 Section 6 0.1% only those that can be used to treat water cooling systems

State Regulations (RTK)

California Proposition 65

This Product contains the following substance (s) known to the state of California to cause cancer and/or developmental effects.
 Hexavalent chromium

Canada

WHMIS hazard class: C Oxidizing materials
D1A Very toxic materials
D2A Very toxic materials
D2B Toxic materials

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

HMIS:

Health: 3 *
Flammability: 0
Physical Hazard: 1

Chronic Hazard Star Legend * = Chronic Health Hazard

Previous Revision Date: Not applicable

Key/Legend: N/A: Not applicable
N/D: Not determined
ppm: Parts per million
X: Listed

Prepared by Product Stewardship

The information provided in this Safety Data Sheet is correct to the best of ELEMENTIS' knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release, and is not to be considered a warranty or quality specification. The information relates only to the specific product designated and may not be valid for such product when used in combination with any other material or in any process, unless specified in this SDS. ELEMENTIS specifically disclaims any liability for any loss, injury or damage which may result from use or misuse of this product.

All chemicals should be handled only by competent personnel, within a controlled environment. It is the buyer's/user's responsibility to ensure that his activities comply with all applicable federal, state, provincial and local laws, and to determine the conditions necessary for the safe use of this product. ELEMENTIS urges each customer or recipient of this SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product.

End of Safety Data Sheet