

SAFETY DATA SHEET

Version 6.7
Revision Date 10/26/2021
Print Date 11/30/2021**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifiers**

Product name : Potassium dichromate

Product Number : P2588
Brand : SIGALD
Index-No. : 024-002-00-6
CAS-No. : 7778-50-9

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO 63103
UNITED STATES

Telephone : +1 314 771-5765
Fax : +1 800 325-5052

1.4 Emergency telephone

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Oxidizing solids (Category 2), H272
Acute toxicity, Oral (Category 3), H301
Acute toxicity, Inhalation (Category 2), H330
Acute toxicity, Dermal (Category 4), H312
Skin corrosion (Category 1B), H314
Serious eye damage (Category 1), H318
Respiratory sensitization (Category 1), H334
Skin sensitization (Category 1), H317
Germ cell mutagenicity (Category 1B), H340
Carcinogenicity (Category 1B), H350
Reproductive toxicity (Category 1B), H360
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

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Specific target organ toxicity - repeated exposure, Inhalation (Category 1), Cardio-vascular system, H372

Short-term (acute) aquatic hazard (Category 1), H400

Long-term (chronic) aquatic hazard (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

| | |
|------|---|
| H272 | May intensify fire; oxidizer. |
| H301 | Toxic if swallowed. |
| H312 | Harmful in contact with skin. |
| H314 | Causes severe skin burns and eye damage. |
| H317 | May cause an allergic skin reaction. |
| H330 | Fatal if inhaled. |
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| H335 | May cause respiratory irritation. |
| H340 | May cause genetic defects. |
| H350 | May cause cancer. |
| H360 | May damage fertility or the unborn child. |
| H372 | Causes damage to organs (Cardio-vascular system) through prolonged or repeated exposure if inhaled. |
| H410 | Very toxic to aquatic life with long lasting effects. |

Precautionary statement(s)

| | |
|---------------------------|---|
| P201 | Obtain special instructions before use. |
| P202 | Do not handle until all safety precautions have been read and understood. |
| P210 | Keep away from heat. |
| P220 | Keep/Store away from clothing/ combustible materials. |
| P221 | Take any precaution to avoid mixing with combustibles. |
| P260 | Do not breathe dust/ fume/ gas/ mist/ vapors/ spray. |
| P264 | Wash skin thoroughly after handling. |
| P270 | Do not eat, drink or smoke when using this product. |
| P271 | Use only outdoors or in a well-ventilated area. |
| P272 | Contaminated work clothing must not be allowed out of the workplace. |
| P273 | Avoid release to the environment. |
| P280 | Wear protective gloves/ protective clothing/ eye protection/ face protection. |
| P284 | Wear respiratory protection. |
| P301 + P310 + P330 | IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth. |
| P301 + P330 + P331 | IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. |
| P303 + P361 + P353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower. |
| P304 + P340 + P310 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor. |
| P305 + P351 + P338 + P310 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue |

| | |
|-------------|--|
| P308 + P313 | rinsing. Immediately call a POISON CENTER/ doctor. |
| P333 + P313 | IF exposed or concerned: Get medical advice/ attention. |
| P363 | If skin irritation or rash occurs: Get medical advice/ attention. |
| P370 + P378 | Wash contaminated clothing before reuse. |
| | In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish. |
| P391 | Collect spillage. |
| P403 + P233 | Store in a well-ventilated place. Keep container tightly closed. |
| P405 | Store locked up. |
| P501 | Dispose of contents/ container to an approved waste disposal plant. |

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

SECTION 3: Composition/information on ingredients

3.1 Substances

| | |
|------------------|-------------------------------------|
| Synonyms | : Potassium bichromate |
| Formula | : $\text{Cr}_2\text{K}_2\text{O}_7$ |
| Molecular weight | : 294.18 g/mol |
| CAS-No. | : 7778-50-9 |
| EC-No. | : 231-906-6 |
| Index-No. | : 024-002-00-6 |

| Component | Classification | Concentration |
|-----------------------------|--|---------------|
| potassium dichromate | Ox. Sol. 2; Acute Tox. 3; Acute Tox. 2; Acute Tox. 4; Skin Corr. 1B; Eye Dam. 1; Resp. Sens. 1; Skin Sens. 1; Muta. 1B; Carc. 1B; Repr. 1B; STOT SE 3; STOT RE 1; Aquatic Acute 1; Aquatic Chronic 1; H272, H301, H330, H312, H314, H318, H334, H317, H340, H350, H360, H335, H372, H400, H410 Concentration limits: >= 5 %: STOT SE 3, H335; M-Factor - Aquatic Acute: 10 - Aquatic Chronic: 1 | <= 100 % |

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

If inhaled

After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

In case of eye contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

If swallowed

If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible. Do not attempt to neutralise.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Potassium oxides

Chromium oxides

Not combustible.

Has a fire-promoting effect due to release of oxygen.

Ambient fire may liberate hazardous vapours.

5.3 Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further information

Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid generation and inhalation of dusts in all circumstances. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.
For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Work under hood. Do not inhale substance/mixture.

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition.

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Tightly closed. Keep locked up or in an area accessible only to qualified or authorized persons. Do not store near combustible materials.

Storage class

Storage class (TRGS 510): 5.1B: Oxidizing hazardous materials

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with workplace control parameters

| Component | CAS-No. | Value | Control parameters | Basis |
|----------------------|-----------|---|--------------------|---|
| potassium dichromate | 7778-50-9 | CEIL | 1mg/10m3 | USA. Occupational Exposure Limits (OSHA) - Table Z-2 |
| | | TWA | 0.0002 mg/m3 | USA. ACGIH Threshold Limit Values (TLV) |
| | Remarks | Dermal Sensitization Respiratory sensitization Confirmed human carcinogen Danger of cutaneous absorption | | |
| | | STEL | 0.0005 mg/m3 | USA. ACGIH Threshold Limit Values (TLV) |
| | | Dermal Sensitization Respiratory sensitization Confirmed human carcinogen Danger of cutaneous absorption | | |
| | | PEL | 0.005 mg/m3 | OSHA Specifically Regulated Chemicals/Carcinogens |
| | | OSHA specifically regulated carcinogen | | |
| | | TWA | 0.0002 mg/m3 | USA. NIOSH Recommended Exposure Limits |
| | | Potential Occupational Carcinogen | | |
| | | PEL | 0.005 mg/m3 | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
| | | C | 0.1 mg/m3 | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |

Biological occupational exposure limits

| Component | CAS-No. | Parameters | Value | Biological specimen | Basis |
|----------------------|-----------|---------------------------------|---------|---------------------|---|
| potassium dichromate | 7778-50-9 | Total chromium | 25 µg/l | Urine | ACGIH - Biological Exposure Indices (BEI) |
| | Remarks | End of shift at end of workweek | | | |
| | | Total chromium | 10 µg/l | Urine | ACGIH - Biological Exposure Indices (BEI) |
| | | Increase during shift | | | |

8.2 Exposure controls

Appropriate engineering controls

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

Personal protective equipment

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles

Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested:KCL 741 Dermatril® L

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested:KCL 741 Dermatril® L

Body Protection

protective clothing

Respiratory protection

required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Control of environmental exposure

Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- | | |
|--|--|
| a) Appearance | Form: crystalline Color: orange |
| b) Odor | odorless |
| c) Odor Threshold | Not applicable |
| d) pH | 3.5 - 5.0 at 29.4 g/l at 25 °C (77 °F) |
| e) Melting point/freezing point | Melting point/range: 398 °C (748 °F) - lit. |
| f) Initial boiling point and boiling range | > 500 °C > 932 °F at 1,013 hPa - Decomposition |

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| | |
|---|--|
| g) Flash point | ()Not applicable |
| h) Evaporation rate | No data available |
| i) Flammability (solid, gas) | No data available |
| j) Upper/lower flammability or explosive limits | No data available |
| k) Vapor pressure | Not applicable |
| l) Vapor density | No data available |
| m) Density | ca.2.680 g/cm ³ at 20 °C (68 °F) - OECD Test Guideline 109 |
| Relative density | ca.2.7 at 20 °C (68 °F) - OECD Test Guideline 109 |
| n) Water solubility | ca.29.4 g/l at 20 °C (68 °F) |
| o) Partition coefficient: n-octanol/water | Not applicable for inorganic substances |
| p) Autoignition temperature | does not ignite |
| q) Decomposition temperature | ca.500 °C (ca.932 °F) - |
| r) Viscosity | No data available |
| s) Explosive properties | No data available |
| t) Oxidizing properties | The substance or mixture is classified as oxidizing with the category 2. |

9.2 Other safety information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

10.3 Possibility of hazardous reactions

Risk of explosion with:

Iron

magnesium

hydrazine and derivatives

hydroxylamine

ammonium nitrate

Boron

Acetic anhydride

oxidisable substances

Reducing agents

sulfuric acid

silicon

Exothermic reaction with:

anhydrides
phosphides
Sulfides
nitrides
Fluorine
Risk of ignition or formation of inflammable gases or vapours with:
organic combustible substances
glycerol
Powdered metals
hydrides
alkali compounds
Acetone
with
sulfuric acid
Generates dangerous gases or fumes in contact with:
hydrochloric acid

10.4 Conditions to avoid

no information available

10.5 Incompatible materials

No data available

10.6 Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - female - 90.5 mg/kg
(OECD Test Guideline 401)

LC50 Inhalation - Rat - female - 4 h - 0.083 mg/l - dust/mist

(OECD Test Guideline 403)

Acute toxicity estimate Dermal - Expert judgment - 1,100 mg/kg

Skin corrosion/irritation

Skin - Rabbit

Result: Causes burns. - 4 h

(OECD Test Guideline 404)

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitization

Patch test: - Human

Result: positive

Remarks: (IUCLID)

Germ cell mutagenicity

May cause genetic defects.

Carcinogenicity

Presumed to have carcinogenic potential for humans

- IARC: 1 - Group 1: Carcinogenic to humans (potassium dichromate)
- NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
- OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

Reproductive toxicity

May damage the unborn child.
May damage fertility.

Specific target organ toxicity - single exposure

May cause respiratory irritation. - Respiratory system

Specific target organ toxicity - repeated exposure

Inhalation - Causes damage to organs through prolonged or repeated exposure. - Cardiovascular system

Aspiration hazard

No data available

11.2 Additional Information

RTECS: HX7680000

Ulceration, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

SECTION 12: Ecological information

12.1 Toxicity

| | |
|---|--|
| Toxicity to fish | LC50 - Danio rerio (zebra fish) - 58.5 mg/l - 96 h Remarks: (ECHA) |
| Toxicity to daphnia and other aquatic invertebrates | EC50 - Daphnia magna (Water flea) - 0.035 mg/l - 48 h Remarks: (ECHA) |
| Toxicity to algae | static test ErC50 - Selenastrum capricornutum (green algae) - 0.233 mg/l - 72 h Remarks: (ECHA) |
| Toxicity to bacteria | IC50 - activated sludge - 30 mg/l - 3 h Remarks: (in analogy to similar products) (ECHA) |

12.2 Persistence and degradability

The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

Bioaccumulation Oncorhynchus mykiss (rainbow trout) - 180 d
- 200 µg/l (potassium dichromate)

Bioconcentration factor (BCF): 17.4

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Endocrine disrupting properties

No data available

12.7 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14: Transport information

DOT (US)

UN number: 3086 Class: 6.1 (5.1) Packing group: II
Proper shipping name: Toxic solids, oxidizing, n.o.s. (potassium dichromate)
Reportable Quantity (RQ): 10 lbs
Poison Inhalation Hazard: No

IMDG

UN number: 3086 Class: 6.1 (5.1) Packing group: II EMS-No: F-A, S-Q
Proper shipping name: TOXIC SOLID, OXIDIZING, N.O.S. (potassium dichromate)
Marine pollutant : yes

IATA

UN number: 3086 Class: 6.1 (5.1) Packing group: II
Proper shipping name: Toxic solid, oxidizing, n.o.s. (potassium dichromate)

SECTION 15: Regulatory information

SARA 302 Components

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This material does not contain any components with a section 302 EHS TPQ.

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

| | CAS-No. | Revision Date |
|----------------------|-----------|---------------|
| potassium dichromate | 7778-50-9 | 1993-02-16 |

SARA 311/312 Hazards

Reactivity Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

SECTION 16: Other information

Further information

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 Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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