Safety Data Sheet SODIUM DICHROMATE Dihydrate

SDS no. S2CGKP55 • Version 1.0 • Date of issue: 2023-09-04

SECTION 1: Identification

GHS Product identifier

Product name	SODIUM DICHROMATE Dihydrate

Recommended use of the chemical and restrictions on use

Adhesive, binding agents; algaecide to protect against slime forming bacteria and yeasts in brewery processing water and brewery warmer water; bleaching fats, oils, sponges, resins; colorimetry (copper determination); colouring agents (for glass, e.g., green bottle glass); complexing agent; corrosive inhibitors (in metal coatings and circulating cooling water systems and in corrosion inhibiting paints); in electric batteries; electroengraving of copper; electrolyte in electrolytic cell production of sodium chlorate; electroplating agents; explosives; fixing agents; fungicide (wood preservative); for hardening gelatin; impregnation agents; industrial water treatment; chemical intermediates for catalysts, leather tanning agents, e.g., chromic sulfate, chromium lignosulfonates for drilling muds; manufacture of chromic acid, other chromates and chrome pigments; laboratory chemicals; leather processing industry; mordant; metal extraction, refining and processing of metals; oxidation inhibitor in ethyl ether; oxidizing agents in manufacture of dyes, many other synthetic organic chemicals, inks; paints, lacquers and varnishes industry; paper, pulp and board industry; photographic industry; refining petroleum; stabilizers; textile processing industry; viscosity adjustors.

Supplier's details

Name	ChemSupply Australia Pty Ltd
Address	38-50 Bedford Street 5013 Gillman South Australia Australia
Telephone	08 8440 2000
email	www.chemsupply.com.au

Emergency phone number

CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)

SECTION 2: Hazard identification

General hazard statement

Classified as dangerous goods according to the Australian Dangerous Goods Code (ADG).

Classified as Hazardous according to the Globally Harmonised System of classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

Classification of the substance or mixture

GHS classification in accordance with: UN GHS revision 7

- Acute toxicity, inhalation, Cat. 1

- Acute toxicity, oral, Cat. 3
- Acute toxicity, dermal, Cat. 4
- Hazardous to the aquatic environment, short-term (acute), Cat. 1
- Hazardous to the aquatic environment, long-term (chronic), Cat. 1
- Carcinogenicity, Cat. 1A
- Serious eye damage/eye irritation, Cat. 1
- Germ cell mutagenicity, Cat. 1
- Oxidizing solids, Cat. 2
- Respiratory sensitizer, Cat. 1
- Skin corrosion/irritation, Cat. 1A
- Skin sensitizer, Cat. 1
- Specific target organ toxicity following repeated exposure, Cat. 1

GHS label elements, including precautionary statements

Pictograms

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
H318	Causes serious eye damage
H330	Fatal if inhaled
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H340	May cause genetic defects
H350	May cause cancer
H372	Causes damage to organs [organs] through prolonged or repeated exposure [route]
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

Precautionary statement(s)

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220	Keep away from clothing and other combustible materials.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P284	[In case of inadequate ventilation] wear respiratory protection.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor/physcian
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 [or shower].
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.

P310	Immediately call a POISON CENTER/doctor/physcian
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor/physcian
P363	Wash contaminated clothing before reuse.
P370+P378	In case of fire: Use agents recommended in Section 5 of SDS for extinction
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 facility

SECTION 3: Composition/information on ingredients

Mixtures

Molecular weight: 298

Components

Component	CAS no.	Concentration
Sodium dichromate (EC no.: 234-190-3)	**7789-12-0**	**100 % (weight)**
CLASSIFICATIONS: Acute toxicity, dermal, Cat. 4; Acute toxicity, inhalation, Cat. 2; Acute toxicity, oral, Cat. 3; Carcinogenicity, Cat. 1A; Germ cell mutagenicity, Cat. 1; Skin corrosion/irritation, Cat. 1A; Skin sensitizer, Cat. 1; Specific target organ toxicity following repeated exposure, Cat. 1; Toxic to reproduction, Cat. 1; Respiratory sensitizer, Cat. 1. HAZARDS: No data available.		

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice	First Aid Facilities: Maintain eyewash station, safety shower and normal washroom facilities.
If inhaled	If inhaled, remove from contaminated area to fresh air immediately. If breathing is difficult, give oxygen. Apply artificial respiration with a respiratory medical device if not breathing. Do not use mouth to mouth resuscitation. Immediately medical attention is required.
In case of skin contact	Immediately remove contaminated clothing and wash affected area with water for at least 15 minutes. Ensure contaminated clothing is washed before re-use. Seek medical advice /attention depending on the severity.
In case of eye contact	If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. Seek immediate medical assistance.
If swallowed	Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek immediate medical advice.

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

Indication of immediate medical attention and special treatment needed, if necessary
Treat symptomatically based on judgement of doctor and individual reactions of the patient.
For advice, contact a Poisons Information Centre (Phone eg Australia 13 1126; New Zealand 0800 764 766) or a doctor.

SECTION 5: Fire-fighting measures

Suitable extinguishing media
Small fire: Use dry chemical, CO2 or water spray.
Large fire: Use water spray, fog or foam - Do not use water jets.
Cool containers with flooding quantities of water until well after fire is out. Avoid getting water inside containers.

Specific hazards arising from the chemical
Irritating, corrosive, toxic and/or flammable fumes or gases including chromium oxide, disodium oxide and oxygen.

Material does not burn. Contact with combustible or organic material may cause fire. Fire or heat will produce irritating, poisonous and/or corrosive gases. Runoff may pollute waterways.

Special protective actions for fire-fighters
Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA) operated in positive pressure mode. Fight fire from safe location.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures
Avoid inhalation and ingestion. Avoid contact with skin, eyes and clothing. Evacuate the area of all non-essential personnel.
Wear protective clothing specified for normal operations (see Section 8)

Environmental precautions
Prevent from entering into drains, ditches or rivers.

Methods and materials for containment and cleaning up
Do not touch or walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Stop leak if safe to do so - Prevent entry into waterways, drains or confined areas. Cover with plastic sheet to prevent spreading. Do not use rags, sawdust or other combustible absorbents to wipe up spilled material. Sweep up (avoid generating dust) and using clean non-sparking tools transfer to a clean, suitable, clearly labelled container for disposal in accordance with local regulations. Absorb or contain liquid with sand, earth or spill control material. Shovel up using non sparking tools and place in a labelled, sealable container for subsequent safe disposal. Put leaking containers in a labelled drum or overdrum.

SECTION 7: Handling and storage

Precautions for safe handling
Avoid ingestion and inhalation of dust. Avoid contact with skin, eyes, or clothing. Avoid prolonged or repeated exposure. Minimize dust generation and accumulation. Use only in a chemical fume hood. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Wear appropriate protective equipment. Wash hands and face thoroughly after working with material. Contaminated clothing should be removed and washed before re-use. Under no circumstances eat, drink or smoke while handling this material. Ensure a high level of personal hygiene is maintained when using this product. Keep away from incompatibles such as combustible materials, organic materials, acids, alkalies and reducing agents.

Conditions for safe storage, including any incompatibilities
Store in tightly closed, labelled containers, in a cool, dry, well-ventilated area, away from incompatible materials. Separate from acids, alkalies, reducing agents and combustible, organic or other readily oxidizable materials, food and feedstuffs. Avoid storage on wood floors. Have appropriate fire extinguishers available in and near the storage area. Protect against physical damage, direct sunlight and moisture.

SECTION 8: Exposure controls/personal protection

Appropriate engineering controls
Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.f the engineering controls are not sufficient to maintain concentrations of vapours/mists below the exposure standards, suitable respiratory protection must be worn.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection
The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.

Skin protection
Clean impervious clothing should be worn. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Hand Protection: Ensure hand protection complies with AS 2161, Occupational protective gloves - Selection, use and maintenance.

Body protection
Suitable protective workwear, e.g. cotton overalls buttoned at neck and wrist is recommended. Chemical resistant apron is recommended where large quantities are handled.

Respiratory protection
If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable vapor/ mist filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements. Reference should be made to Australian Standards AS/ NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

Physical state	Solid
Appearance	Orange to red-orange deliquescent crystals, crystalline solid or granules.
Color	No data available.
Odor	Odourless.
Odor threshold	No data available.
Melting point/freezing point	91 °C.
Boiling point or initial boiling point and boiling range	400 °C (decomposes).
Flammability	No data available.
Lower and upper explosion limit/flammability limit	No data available.
Flash point	No data available.
Explosive properties	Risk of a violent oxidation reaction with organic materials and other oxidizable materials (especially in strongly acidic solutions). Risk of fire and explosion on contact with combustible substances, or reducing agents, or when shocked, or if exposed to heat, flame, or friction. Also may act as initiation source for dust or vapour explosions. Violent reaction or ignition with boron + silicon (pyrotechnic); organic residues + sulfuric acid; 2-propanol + sulfuric acid; sulfuric acid + trinitrotoluene. Potentially explosive reaction with acetic anhydride; ethanol + sulfuric acid + heat; hydrazine.
Auto-ignition temperature	No data available.
Decomposition temperature	>400 °C (Temperature of fusion: Partly liquefies at 84.6 °C giving solid anhydrous form and saturated solution. All water (2 water) lost by 140 °C. Anhydrous form fuses at 356.7 °C.)
Oxidizing properties	The aqueous solution is a mild oxidizing agent; however in strongly acidic solution, there is a risk of a violent oxidation reaction with organic materials and other oxidizable materials.

pH	Solutions are acidic, pH of 1% solution 4.0 and pH of 10% solution 3.5.
Kinematic viscosity	No data available.
Solubility	Solubility in Water: Soluble in water (180 g/100 ml (20 °C), 433 g/100 ml (98 °C)). Solubility in Organic Solvents: Insoluble in alcohol.
Partition coefficient n-octanol/water (log value)	No data available.
Vapor pressure	0 mm Hg @ 20 °C.
Evaporation rate	No data available.
Density and/or relative density	Specific Gravity: 2.52 (Water = 1) @ 20 °C; 2.348 @ 25 °C.
Relative vapor density	10
Particle characteristics	No data available.

Supplemental information regarding physical hazard classes
No data available.

Further safety characteristics (supplemental)
Other Information: Index of Refraction: 1.661, 1.699, 1.751.

SECTION 10: Stability and reactivity

Reactivity
Stable under normal conditions of storage and handling.

Reacts with incompatible materials

Chemical stability
Stable under ordinary conditions of use and storage.

Possibility of hazardous reactions
May react with readily oxidisable materials, flammable substances, reducing agents, combustible materials, organic materials, metals, especially at elevated temperatures. Potentially explosive reaction with acetic anhydride; ethanol + sulfuric acid + heat; hydrazine. Violent reaction or ignition with boron + silicon (pyrotechnic); organic residues + sulfuric acid; 2-propanol + sulfuric acid; sulfuric acid + trinitrotoluene.

Conditions to avoid
Extremes of temperature, heat, direct sunlight, dust generation, combustible materials, organic materials, moisture and incompatible materials.

Incompatible materials
Reducing agents, combustible, organic or other readily oxidizable material (paper, wood, sulfur, aluminium or plastics) especially in the presence of strong acid solutions, oxidizing agents, anhydrides, acetic anhydride, hydrazine and derivatives, hydroxylamine, water, sulfides/water, glycerol, boron, alcohols, ethanol, 2-propanol, metals in powder form, iron, magnesium, trinitrotoluene, acids, nitric acid, conc. sulfuric acid, hydrochloric acid, strong bases, oils and silicon.

Hazardous decomposition products
Irritating, corrosive, toxic and/or flammable fumes or gases including chromium oxide, disodium oxide and oxygen.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
Acute Toxicity - Oral: LD50 (rat): 51 mg/kg (both sexes).

Ingestion: Toxic if swallowed. May cause severe gastrointestinal tract irritation and possible burns with burning sensation, sore throat, nausea, vomiting, abdominal pain, diarrhoea, shock or collapse. It is absorbed via the gastrointestinal tract. Severe symptoms in the gastrointestinal tract may include severe burns of the mouth, throat, and stomach, violent gastroenteritis, epigastric pain (inflammation and ulceration of the gastrointestinal tract), bloody diarrhoea, vomiting (aspiration pneumonia!), abnormal bleeding, dizziness, intense thirst, muscle cramps, formation of methaemoglobin, nephritis, oliguria, liver damage and acute renal failure, fever, shock, spasms, peripheral vascular collapse, circulatory collapse, unconsciousness, coma, and possible death. Other symptoms of exposure include erosion and discolouration of the teeth. May cause cancers of the stomach. Lethal dose (man): 0.5 g.

Inhalation: Very toxic by inhalation. It is absorbed via the lungs. Dusts or mists are highly irritating and possibly corrosive to the nose, nasal septum, throat, bronchial tubes, respiratory tract and lungs. Symptoms may include burning sensation, sore throat, coughing, wheezing, laryngitis, shortness of breath, laboured breathing, headache, nausea, and vomiting. Inhalation of dusts may cause ulceration and perforation of the nasal septum if inhaled in large quantities, or if exposed chronically. Higher exposures may be fatal as a result of spasm, inflammation, oedema of the larynx and bronchi, chemical pneumonitis and pulmonary oedema. May cause liver and kidney damage. May produce pulmonary sensitization, allergic asthma or allergic respiratory reaction. Causes cancer of the lungs, nasal cavity, sinuses and larynx by inhalation.

Skin corrosion/irritation
Harmful in contact with skin. Dusts and strong solutions may cause severe irritation and possible severe skin burns. Symptoms may include redness, pain and chrome sores, ulcers caused by contact with broken skin, with poor tendency for ulcers to heal following penetration of substance into the wound. Harmful if absorbed through the skin. Absorption may cause systemic poisoning, affecting kidney and liver functions. May cause skin sensitization in some individuals, an allergic reaction, which becomes evident upon re-exposure to this material.

Serious eye damage/irritation
Dusts and mists may cause severe irritation, and possible severe deep eye burns. Contact can cause blurred vision, redness, stinging, blurring, tearing, severe pain and possible permanent corneal damage or blindness. Risk of serious damage to eyes.

Serious eye damage/irritation: Causes severe skin burns and eye damage - Cat. 1 (H314) - Safe Work Australia.

Respiratory or skin sensitization
May cause allergy or asthma symptoms or breathing difficulties if inhaled

May cause an allergic skin reaction

Germ cell mutagenicity
May cause genetic defects

Carcinogenicity
Chromium[VI] is evaluated in the IARC Monographs (Vol. 49; 1990) as Group 1: Carcinogenic to humans.
May causes cancer

Reproductive toxicity
May damage fertility or the unborn child

Specific target organ toxicity (STOT) - single exposure
No data available.

Specific target organ toxicity (STOT) - repeated exposure
Causes damage to organs through prolonged or repeated exposure

Aspiration hazard
Based on available data, classification data are not met

Additional information

Repeated or prolonged ingestion may cause gastrointestinal irritation with vomiting and diarrhoea, kidney and liver damage and damage to the heart. Repeated or prolonged exposure can cause ulceration and perforation of the nasal septum, respiratory irritation, and ulceration of the skin. Ulcerations at first may be painless, but may penetrate to the bone producing <qt>chrome holes.<qt> Prolonged or repeated inhalation may cause asthma-like allergy. Future exposures can cause asthma attacks with shortness of breath, wheezing, cough, and/or chest tightness. Prolonged or repeated skin contact may cause blisters, possible destruction and/or ulceration, and may cause skin sensitization, an allergic reaction. May cause cancer by inhalation.

SECTION 12: Ecological information

Toxicity
Highly toxic for aquatic organisms. May cause long-term adverse effects in the aquatic environment.

Persistence and degradability
Methods for the determination of biodegradability are not applicable to inorganic substances.

Other adverse effects
Do not allow to enter waters, waste water, or soil!

SECTION 13: Disposal considerations

Disposal methods

Product disposal
Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers.

Other disposal recommendations
Do not discharge this material into waterways, drains and sewers.

SECTION 14: Transport information

ADG (Road and Rail)
UN Number: 3087
Class: 5.1/6.1
Packing Group: II
Proper Shipping Name: OXIDISING SOLID, TOXIC, N.O.S. (SODIUM DICHROMATE)

Environmental Hazards: Highly toxic for aquatic organisms. May cause long-term adverse effects in the aquatic environment. Concentration in organisms possible.

Hazchem emergency action code (EAC)
1W

IMDG
UN Number: 3087
Class: 5.1/6.1
Packing Group: II
Proper Shipping Name: OXIDISING SOLID, TOXIC, N.O.S. (SODIUM DICHROMATE)

IATA
UN Number: 3087
Class: 5.1/6.1
Packing Group: II
Proper Shipping Name: OXIDISING SOLID, TOXIC, N.O.S. (SODIUM DICHROMATE)

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

Australia SUSMP
Poison Schedule: S6

SECTION 16: Other information

Further information/disclaimer
ChemSupply Australia Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon ChemSupply Australia Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of ChemSupply Australia Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

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Standard for the Uniform Scheduling of Medicines and Poisons, Commonwealth of Australia
National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.'
Safe Work Australia, 'National Code of Practice fot the Preparation of Safety Data Sheets for Hazardous Chemicals', July 2020.
Safe Work Australia, 'National Guide for Classifying Hazardous Chemicals', July 2020.
Safe Work Australia, Workplace Exposure Standards for Airbourne Contaminants, December 2019
Safe Work Australia, Hazardous Chemical Information System (HCIS), hcis.safeworkaustralia.gov.au
IATA, Dangerous Goods Regulations (DGR)
IMO, International Maritime Dangerous Goods Code (IMDG)