Safety Data Sheet SODIUM METAVANADATE

SDS no. T13HE982 • Version 1.0 • Date of issue: 2023-01-31

SECTION 1: Identification

GHS Product identifier

Product name	SODIUM METAVANADATE

Recommended use of the chemical and restrictions on use

Inks, fur dyeing, photography, inoculation of plant life, mordants and fixers, corrosive inhibitor in gas-scrubbing systems and laboratory reagent.

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

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, oral, Cat. 3
- Acute toxicity, inhalation, Cat. 4
- Hazardous to the aquatic environment, long-term (chronic), Cat. 2
- Serious eye damage/eye irritation, Cat. 2A
- Toxic to reproduction, Cat. 2
- Specific target organ toxicity following repeated exposure, Cat. 1

GHS label elements, including precautionary statements

Pictograms

Signal word	**Danger**

Hazard statement(s)

H301	Toxic if swallowed
H319	Causes serious eye irritation
H332	Harmful if inhaled
H361	Suspected of damaging fertility or the unborn child [effect, route]
H372	Causes damage to organs [organs] through prolonged or repeated exposure [route]
H411	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.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor/physcian
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.
P312	Call a POISON CENTER/doctor/physcian if you feel unwell.
P314	Get medical advice/attention if you feel unwell.
P321	Specific treatment (see … on this label).
P330	Rinse mouth.
P337+P313	If eye irritation persists: Get medical advice/attention.
P405	Store locked up.
P501	Dispose of contents/container to an approved waste disposal facility
P273	Avoid release to the environment.
P391	Collect spillage.

SECTION 3: Composition/information on ingredients

Mixtures

Molecular weight: 121.93

Components

Component	Concentration
SODIUM VANADATE (CAS no.: 13718-26-8; EC no.: 237-272-7)	**100 % (weight)**
CLASSIFICATIONS: Acute toxicity, inhalation, Cat. 4; Acute toxicity, oral, Cat. 3; Hazardous to the aquatic environment, long-term (chronic), Cat. 2; Serious eye damage/eye irritation, Cat. 2A; Specific target organ toxicity following repeated exposure, Cat. 1; Toxic to reproduction, Cat. 2. HAZARDS: H301 - Toxic if swallowed;	

H319 - Causes serious eye irritation; H332 - Harmful if inhaled; H361 - Suspected of damaging fertility or the unborn child [effect, route]; H372 - Causes damage to organs [organs] through prolonged or repeated exposure [route]; H411 - Toxic to aquatic life with long lasting effects.

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice	First Aid Facilities: Maintain eyewash fountain, safety shower and normal washroom facilities in work area.
	Consult a physician. Show this safety data sheet to the doctor in attendance.
If inhaled	If inhaled, remove affected person from contaminated area. Keep at rest until recovered. If symptoms develop and/or persist seek medical attention.
In case of skin contact	Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician
In case of eye contact	If in eyes, hold eyelids apart and flush eye continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre (e.g. phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor, or for at least 15 minutes.
If swallowed	Do not induce vomiting. Wash out mouth thoroughly with water. Seek immediate medical attention.

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
For advice in an emergency, contact a Poisons Information Centre (Phone Australia 131 126) or a doctor at once.

SECTION 5: Fire-fighting measures

Suitable extinguishing media
Use extinguishing media appropriate for surrounding fire.

Specific hazards arising from the chemical
Toxic and/or irritating fumes including sodium oxide and vanadium oxide (VOx) gases.

Material does not burn. 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 dust formation. Avoid breathing vapours, mist or gas. For personal protection see section 8.

Methods and materials for containment and cleaning up

Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation. Keep in suitable, closed containers for disposal.

SECTION 7: Handling and storage

Precautions for safe handling
Avoid ingestion and inhalation of dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.
Keep locked up. Keep containers tightly closed when not in use. Minimize dust generation and accumulation. Use with adequate ventilation. If ingested, seek medical advice immediately and show the container or the label. Wear suitable protective clothing. Wash thoroughly after handling. Ensure a high level of personal hygiene is maintained when using this product. That is, always wash hands before eating, drinking, smoking or using the toilet.

Conditions for safe storage, including any incompatibilities
Store in tightly closed, labelled, corrosion-resistant containers, in a cool, dry, well-ventilated area away from incompatible substances. Store away from bases, water and other incompatible materials. Hygroscopic. Store protected from moisture and direct sunlight. Containers shall be stored in a safe manner to minimize accidental breakage, or spillage.

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.

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: Normally not required but if in doubt ensure hand protection should 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	Colourless, white, slightly yellow, slightly green, or beige powder, or crystalline granules.
Color	No data available.
Odor	Odourless.
Odor threshold	No data available.
Melting point/freezing point	630 °C
Boiling point or initial boiling point and boiling range	Decomposes.
Flammability	No data available.
Lower and upper explosion limit/flammability limit	No data available.
Flash point	No data available.
Explosive properties	No data available.
Auto-ignition temperature	No data available.
Decomposition temperature	No data available.
Oxidizing properties	No data available.
pH	6.7 (10% solution)
Kinematic viscosity	No data available.
Solubility	No data available.
Partition coefficient n-octanol/water (log value)	No data available.
Vapor pressure	No data available.
Evaporation rate	No data available.
Density and/or relative density	Specific Gravity: 2.79.
Relative vapor density	No data available.

Particle characteristics
No data available.

Supplemental information regarding physical hazard classes
No data available.

Further safety characteristics (supplemental)
No data available.

SECTION 10: Stability and reactivity

Reactivity
Stable under normal conditions of storage and handling.

Reacts with incompatible materials

Chemical stability
Stable under normal temperatures and pressures.

Possibility of hazardous reactions
May form combustible dust concentrations in air

Conditions to avoid
Dust generation, exposure to moist air, moisture or water and incompatible materials.

Incompatible materials
Strong oxidizing agents, acids, bases, water/moisture.

Hazardous decomposition products
Toxic and/or irritating fumes including sodium oxide (Na2O), and vanadium oxide (VOx) gases.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
Ingestion: Toxic if swallowed. May cause irritation and damage of the mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract, coughing, dyspnoea, gastrointestinal disorders, nausea, and vomiting. After absorption of toxic quantities, changes in blood picture, loss of weight, pulmonary oedema, cardiovascular complaints, convulsions, rapid heart beat and low blood pressure.

Inhalation: Harmful if inhaled. Inhalation of dust and vapours may cause reversible irritation of the mucous membranes of the nose, throat and respiratory tract. Exposure may cause rhinitis and coughing. More severe cases may cause bronchitis, bronchospasms, pneumonia and asthma like disease. May lead to the formation of oedemas in the respiratory tract. May cause polycythemia, red blood cell destruction and anemia, albuminuria and hematuria, nervous complaints and severe cough.

Skin corrosion/irritation
Irritating to skin resulting in redness and itching. May be severe. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material.

Serious eye damage/irritation
May cause severe eye irritation, with cause tearing, stinging, blurred vision, and redness. Exposure may cause conjunctivitis.

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
No data available.

Reproductive toxicity
Suspected of damaging fertility or the unborn child.

Pregnant Sprague-Dawley rats were given orally a daily dose of 0, 5, 10 or 20 mg sodium metavanadate/kg from the sixth through the fourteenth day of pregnancy. Foetal examinations were performed on day 20 of gestation. Sodium metavanadate was neither embryolethal nor teratogenic in rats when administered orally at 20 mg/kg/day or lower. Nevertheless, this dose was embryotoxic (Paternain JL et al; Rev Esp Fisiol 43 (2): 223-8 (1987)).
Male Mouse, Oral, Dose: 1800 mg/kg, Exposure Time: (30d), Result: Effects on Fertility: Male fertility index (e.g., # males impregnating females per # males exposed to fertile nonpregnant females). Paternal Effects: Testes, epididymis, sperm duct.

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.
Oral - Irregular cardic activity.

Aspiration hazard
Not expected to be an aspiration hazard.

Additional information

SODIUM VANADATE: *TOXICITY:
typ. dose mode specie amount units other
LDLo orl rat 200 mg/kg
LDLo ipr rat 10 mg/kg
LD50 ivn cat 7180 ug/kg
LDLo orl rbt 200 mg/kg
LDLo ivn rbt 17 mg/kg
LDLo scu dog 17 mg/kg
LDLo ivn dog 11 mg/kg

*AQTX/TLM96: Not available

*SAX TOXICITY EVALUATION:
THR = HIGH oral, intraperitoneal, unknown, subcutaneous.

*CARCINOGENICITY: Not available

*MUTATION DATA:
test lowest dose | test lowest dose
---------- ---------- | ---------- ----------
Not available

*TERATOGENICITY (Reproductive Effects Data): Not available

*STANDARDS, REGULATIONS & RECOMMENDATIONS:
OSHA: Federal Register (1/19/89) and 29 CFR 1910.1000 Subpart Z
Transitional Limit: PEL-Ceiling Limit 0.1 mg(V2O5)/m3 (fume) [610]
Final Limit: PEL-TWA 0.05 mg(V2O5)/m3 (fume) [610]
Transitional Limit: PEL-Ceiling Limit 0.5 mg(V2O5)/m3 (respirable dust)
[610]
Final Limit: PEL-TWA 0.05 mg(V2O5)/m3 (respirable dust) [610]
ACGIH: TLV-TWA 0.05 mg(V2O5)/m3 [610]
NIOSH Criteria Document: Recommended Exposure Limit to this compound-air:
Ceiling Limit 0.05 mg(V)/m3/15M [610]
NFPA Hazard Rating: Health (H): None
Flammability (F): None
Reactivity (R): None

*OTHER TOXICITY DATA:
Review: Toxicology Review-2
Status: Reported in EPA TSCA Inventory, 1983

From NIH:
rat LD50 oral 98mg/kg (98 mg/kg) BEHAVIORAL: ATAXIA

LUNGS, THORAX, OR RESPIRATION: DYSPNEA

GASTROINTESTINAL: "HYPERMOTILITY, DIARRHEA" Toxicology Letters. Vol. 23, Pg. 227, 1984.

SECTION 12: Ecological information

Toxicity

The following applies to vanadium compounds in general: Toxic for aquatic organisms.

Persistence and degradability
No data available.

Bioaccumulative potential
No data available.

Mobility in soil
No data available.

Results of PBT and vPvB assessment
No data available.

Endocrine disrupting properties
No data available.

Other adverse effects
No data available.

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: 3285
Class: 6.1
Packing Group: III
Proper Shipping Name: VANADIUM COMPOUND, N.O.S. (CONTAINS SODIUM METAVANADATE)

Environmental Hazards: Toxic for aquatic organisms.

Hazchem emergency action code (EAC)
2X

IMDG
UN Number: 3285
Class: 6.1
Packing Group: III
EMS Number:
Proper Shipping Name: VANADIUM COMPOUND, N.O.S. (CONTAINS SODIUM METAVANADATE)

IATA
UN Number: 3285

Class: 6.1
Packing Group: III
Proper Shipping Name: VANADIUM COMPOUND, N.O.S. (CONTAINS SODIUM METAVANADATE)

SECTION 15: Regulatory information

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

Australia SUSMP
Poison Schedule: NS

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.