

#### 1. IDENTIFICATION

Product Name Sodium Molybdate Dihydrate
Other Names Disodium molybdate [CAS#7631-95-0]

Uses Water treatment; Automotive industry; Corrosion inhibitor; Metal productions; Micronutrient fertiliser.

Chemical FamilyNo Data AvailableChemical FormulaNa2MoO4.2H2O

Chemical Name Molybdate, disodium, dihydrate

Product Description No Data Available

# **Contact Details of the Supplier of this Safety Data Sheet**

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## **Emergency Contact Details**

For emergencies only; DO NOT contact these companies for general product advice.

Organisation Location Telephone Poisons Information Centre Westmead NSW 1800-251525 131126 Chemcall Australia 1800-127406 +64-4-9179888 +64-4-9179888 Chemcall Malaysia Chemcall New Zealand 0800-243622 +64-4-9179888 National Poisons Centre New Zealand 0800-764766 CHEMTREC USA & Canada 1-800-424-9300 CN723420

## 2. HAZARD IDENTIFICATION

Poisons Schedule (Aust) Not Scheduled

+1-703-527-3887



## **Globally Harmonised System**

Hazard Classification NOT hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of

Chemicals (GHS)

Signal Word None

## **National Transport Commission (Australia)**

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods

by Road & Rail (ADG Code)

### Safe Work Australia

National Guide for Classifying Hazardous Chemicals under the Model WHS Regulations

Hazard Classification NOT hazardous according to the criteria of Safe Work Australia under Model WHS Regulations

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Sodium molybdate, dihydrate	Na2MoO4.2H2O	10102-40-6	<=100 %

# 4. FIRST AID MEASURES

# Description of necessary measures according to routes of exposure

Swallowed IF SWALLOWED: Rinse mouth, then drink plenty of water. Do not induce vomiting. If vomiting occurs, keep head lower

than hips to prevent aspiration. Get medical advice/attention if you feel unwell. Never give anything by mouth to an

unconscious person.

Eye IF IN EYES: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally lifting

the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. If eye

irritation persists, get medical advice/attention or consult an ophthalmologist immediately.

**Skin** IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and shoes and wash before reuse. If

skin irritation occurs, get medical advice/attention.

**Inhaled** IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If respiratory symptoms

persist, get medical advice/attention. Apply resuscitation if victim is not breathing - Administer oxygen if breathing is

difficult.

**Advice to Doctor** Treat symptomatically and supportively.

Medical Conditions Aggravated by

Exposure

Persons with pre-existing skin disorders or eye problems or impaired respiratory function may be more susceptible to the

effects of the substance.

## **5. FIRE FIGHTING MEASURES**

General Measures If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out.

Flammability Conditions Non-combustible; Material does not burn.

Fire and Explosion Hazard Not considered to be a fire hazard. Not considered to be an explosion hazard.

Hazardous Products of Toxic metal fumes may form when heated to decomposition. Under fire conditions hazardous decomposition products

**Combustion** formed include Sodium oxides, Molybdenum oxides.

**Special Fire Fighting Instructions** Contain runoff from fire control water - Runoff may pollute waterways.

Personal Protective Equipment Wear self-contained breathing apparatus (SCBA) and chemical splash suit. SCBA and structural firefighter's uniform may

provide limited protection.

Flash Point

No Data Available

Lower Explosion Limit

No Data Available

Upper Explosion Limit

No Data Available

Auto Ignition Temperature

No Data Available

Hazchem Code

No Data Available

#### **6. ACCIDENTAL RELEASE MEASURES**

General Response Procedure Ensure adequate ventilation. Do not touch or walk through spilled material. Avoid generating dust. Avoid breathing dust

and contact with eyes, skin and clothing.

Clean Up Procedures Collect material and place in suitable clean, dry containers for reclamation or later disposal (see SECTION 13). Vacuum

wet to avoid dust generation.

**Containment** Stop leak if safe to do so - Prevent entry into waterways, drains or confined areas.

**Decontamination** No information available.

**Environmental Precautionary** 

Measures

Prevent entry into drains and waterways.

Evacuation Criteria Spill or leak area should be isolated immediately. Keep unauthorised personnel away.

## 7. HANDLING AND STORAGE

Handling Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure

adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Avoid generating dust. Avoid breathing dust and contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment as

required (see SECTION 8).

Storage Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container tightly closed. Protect from physical

damage. Protect from moisture. Keep away from excess heat. Keep away from food/feedstuffs, beverages and

incompatible materials (see SECTION 10).

**Container** Keep in the original container. Containers of this material may be hazardous when empty since they retain product

residues; observe all warnings and precautions listed for the product.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**General** No specific exposure standards are available for this product.

- Safe Work Australia Exposure Standard for Molybdenum, insoluble compounds (as Mo): TWA = 10 mg/m3.
 - Safe Work Australia Exposure Standard for Molybdenum, soluble compounds (as Mo): TWA = 5 mg/m3.

**Exposure Limits** No Data Available

Biological Limits No information available.

**Engineering Measures** 

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.

**Personal Protection Equipment** 

- Respiratory protection: Wear respiratory protection in case of inadequate ventilation or if an inhalation risk exists. Recommended: Dust protection mask (refer to AS/NZS 1715 & 1716).
- Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Tightly sealed goggles.
- Hand protection: Handle with gloves. Recommended: Protective gloves.
- Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Protective work clothing, e.g. boots, lab coat, apron or coveralls, as appropriate.

**Special Hazards Precaustions** 

No information available.

**Work Hygienic Practices** 

Do not eat, drink or smoke when using this product. Wash hands before breaks and at the end of work. Take off contaminated clothing and wash before reuse.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State Solid

**Appearance** Crystals, scales or flakes

Odour Odourless
Colour White

рΗ No Data Available **Vapour Pressure** No Data Available No Data Available **Relative Vapour Density Boiling Point** No Data Available **Melting Point** 686 - 687 °C **Freezing Point** No Data Available Solubility Soluble in water **Specific Gravity** No Data Available **Flash Point** No Data Available **Auto Ignition Temp** No Data Available **Evaporation Rate** No Data Available **Bulk Density** No Data Available **Corrosion Rate** No Data Available **Decomposition Temperature** No Data Available Density 3.78 g/cm3

**Specific Heat** No Data Available **Molecular Weight** 241.95 g/mol **Net Propellant Weight** No Data Available **Octanol Water Coefficient** No Data Available **Particle Size** No Data Available **Partition Coefficient** No Data Available **Saturated Vapour Concentration** No Data Available Vapour Temperature No Data Available

Additional Characteristics No information available.

Potential for Dust Explosion No information available.

No Data Available

No Data Available

0 % @ 21 °C

Viscosity

**Volatile Percent** 

**VOC Volume** 

**Fast or Intensely Burning** 

Characteristics

No information available.

Flame Propagation or Burning

**Rate of Solid Materials** 

No information available.

No information available.

**Non-Flammables That Could** Contribute Unusual Hazards to a

**Properties That May Initiate or** Contribute to Fire Intensity

Non-combustible; Material does not burn.

**Reactions That Release Gases or** 

**Vapours** 

Toxic metal fumes may form when heated to decomposition. Under fire conditions hazardous decomposition products formed include Sodium oxides, Molybdenum oxides.

Release of Invisible Flammable

Vapours and Gases

No information available.

#### 10. STABILITY AND REACTIVITY

**General Information** Explodes on contact with molten magnesium. Violent reaction with interhalogens (e.g. bromine pentafluoride; chlorine

trifluoride). Incandescent reaction with hot sodium, potassium or lithium.

**Chemical Stability** Stable under recommended storage conditions. **Conditions to Avoid** Avoid generating dust. Keep away from excess heat.

**Materials to Avoid** Incompatible/reactive with strong oxidizing agents, strong reducing agents, alkali metals, most common metals.

**Hazardous Decomposition** 

**Products** 

Toxic metal fumes may form when heated to decomposition. Under fire conditions hazardous decomposition products

formed include Sodium oxides, Molybdenum oxides.

**Hazardous Polymerisation** Will not occur.

### 11. TOXICOLOGICAL INFORMATION

# **General Information**

- Acute toxicity: Based on available data, the classification criteria are not met. Swallowing can result in nausea, vomiting, diarrhoea and abdominal pain.
- Skin corrosion/irritation: Not irritating to skin (Rabbits) [CAS#7631-95-0; OECD TG 404]. Thus, chemical is considered to be non-irritant.
- Eye damage/irritation: Not irritating to eyes (Rabbits) [CAS#7631-95-0; OECD TG 405]. Thus, chemical is considered to be non-irritant. Exposure to the dust may cause discomfort/physical irritation to the eyes.
- Respiratory/skin sensitisation: Not sensitizing (Guinea pigs) [CAS#7631-95-0; OECD TG 406]. Since the test animals failed to induce any cutaneous reaction, the test chemical is considered as not sensitizing.
- Germ cell mutagenicity: Non-mutagenic. On the basis of a weight of evidence approach of read across analogues, test chemical Disodium molybdate (CAS#7631-95-0) was reported to be non-mutagenic. was reported to be non-mutagenic.
- Carcinogenicity: Not listed as carcinogenic according to the International Agency for Research on Cancer (IARC).
- Reproductive toxicity: Non-reprotoxic [CAS#7631-95-0; OECD TG 416].
- STOT (single exposure): Breathing in dust may result in respiratory irritation, coughing, shortness of breath.
- STOT (repeated exposure): High levels of molybdenum can cause joint problems in the hands and feet with pain and lameness. Molybdenum compounds can also cause liver changes with elevated levels of enzymes and cause over-activity of the thyroid gland. A generalised feeling of unwellness can occur, with tiredness, weakness, diarrhoea, loss of appetite and weight.
- Aspiration toxicity: Not an aspiration hazard.

Acute

Ingestion Acute toxicity (Oral):

- LD50, Rat (male/female): 4,233 mg/kg bw. [OECD TG 401].

Other Acute toxicity (Dermal):

- LD50, Rat (male/female): >2,000 mg/kg bw. [OECD TG 402].

**Inhalation** Acute toxicity (Inhalation):

- LC50, Rat (male/female): >1.93 mg/l [OECD TG 403].

Carcinogen Category None

#### 12. ECOLOGICAL INFORMATION

**Ecotoxicity** Aquatic toxicity:

LC50, Fish (Oncorhynchus mykiss): 1,320 mg/l (96 h) [CAS#10102-40-6; OECD TG 203].
LC50, Fish (Pimephales Promelas): 609.1 mg/l (96 h) [CAS#10102-40-6; OECD TG 203].
EC50, Crustacea (Daphnia magna): 2,847.5 mg/l (48 h) [CAS#7631-95-0; ASTM guideline].

- EC50, Algae/aquatic plants (Pseudokirchneriella subcapitata): >218 mg/l (72 h) [CAS#10102-40-6; OECD TG 201].

Persistence/Degradability

Biodegradation is not applicable to metals/inorganic substances.

Mobility

No information available.

**Environmental Fate** 

 $Slightly\ hazardous\ for\ water\ -\ Do\ not\ allow\ undiluted\ product\ or\ large\ quantities\ of\ it\ to\ reach\ ground\ water,\ water\ course$ 

or sewage system.

Non-bioaccumulative.

Bioaccumulation Potential Environmental Impact

No Data Available

#### 13. DISPOSAL CONSIDERATIONS

**General Information** The generation of waste should be avoided or minimised wherever possible. Whatever cannot be saved for recovery or

recycling should be managed in an appropriate and approved waste disposal facility and in accordance with

local/regional/national regulations. Processing, use or contamination of this product may change the waste management

options.

**Special Precautions for Land Fill** 

 $Contaminated\ packaging:\ Containers\ of\ this\ material\ may\ be\ hazardous\ when\ empty\ since\ they\ retain\ product\ residues\ -$ 

Observe all warnings and precautions listed for the product. Do not reuse container.

# 14. TRANSPORT INFORMATION

# Land Transport (Australia)

ADG Code

Proper Shipping Name Sodium molybdate, dihydate

Class No Data Available
Subsidiary Risk(s) No Data Available

No Data Available

UN Number No Data Available
Hazchem No Data Available
Pack Group No Data Available
Special Provision No Data Available

Comments NON-DANGEROUS GOODS: Not regulated for LAND transport.

# Land Transport (Malaysia)

ADR Code

Proper Shipping Name Sodium molybdate, dihydate

Class No Data Available
Subsidiary Risk(s) No Data Available

No Data Available

UN NumberNo Data AvailableHazchemNo Data AvailablePack GroupNo Data AvailableSpecial ProvisionNo Data Available

Comments NON-DANGEROUS GOODS: Not regulated for LAND transport.

# Land Transport (New Zealand)

NZS5433

Proper Shipping Name Sodium molybdate, dihydate

Class No Data Available
Subsidiary Risk(s) No Data Available

No Data Available

UN Number No Data Available
Hazchem No Data Available
Pack Group No Data Available
Special Provision No Data Available

Comments NON-DANGEROUS GOODS: Not regulated for LAND transport.

# Land Transport (United States of America)

**US DOT** 

Proper Shipping Name Sodium molybdate, dihydate

Class No Data Available
Subsidiary Risk(s) No Data Available

No Data Available

UN Number No Data Available
Hazchem No Data Available
Pack Group No Data Available
Special Provision No Data Available

Comments NON-DANGEROUS GOODS: Not regulated for LAND transport.

# **Sea Transport**

IMDG Code

Proper Shipping Name Sodium molybdate, dihydate

Class No Data Available
Subsidiary Risk(s) No Data Available
UN Number No Data Available
Hazchem No Data Available
Pack Group No Data Available
Special Provision No Data Available
EMS No Data Available

Marine Pollutant No

**Comments** NON-DANGEROUS GOODS: Not regulated for SEA transport.

## **Air Transport**

IATA DGR

Proper Shipping Name Sodium molybdate, dihydate

Class No Data Available
Subsidiary Risk(s) No Data Available
UN Number No Data Available
Hazchem No Data Available
Pack Group No Data Available
Special Provision No Data Available

Comments NON-DANGEROUS GOODS: Not regulated for AIR transport.

## **National Transport Commission (Australia)**

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods

by Road & Rail (ADG Code)

#### 15. REGULATORY INFORMATION

General Information No Data Available
Poisons Schedule (Aust) Not Scheduled

# **Environmental Protection Authority (New Zealand)**

Hazardous Substances and New Organisms Amendment Act 2015

Approval Code Not Hazardous

# **National/Regional Inventories**

Australia (AIIC) Listed

Canada (DSL) Not Determined

Canada (NDSL) Not Determined

China (IECSC) Not Determined

**Europe (EINECS)** 600-158-6

Europe (REACh) Not Determined

Japan (ENCS/METI) Not Determined

Korea (KECI) Not Determined

Malaysia (EHS Register) Not Determined

New Zealand (NZIoC) Listed

Philippines (PICCS) Not Determined

Switzerland (Giftliste 1) Not Determined

Switzerland (Inventory of Notified

Substances)

Not Determined

Taiwan (NCSR) Not Determined

**USA (TSCA)** Not Determined

#### 16. OTHER INFORMATION

#### **Related Product Codes**

SOMOLY0100, SOMOLY0300, SOMOLY0400, SOMOLY0500, SOMOLY0700, SOMOLY0701, SOMOLY0702, SOMOLY0703, SOMOLY0800, SOMOLY0801, SOMOLY0802, SOMOLY0803, SOMOLY0804, SOMOLY0805, SOMOLY0806, SOMOLY0807, SOMOLY0808, SOMOLY0809, SOMOLY0810, SOMOLY0811, SOMOLY0812, SOMOLY0813, SOMOLY0814, SOMOLY0815, SOMOLY0816, SOMOLY0817, SOMOLY0818, SOMOLY0819, SOMOLY0820, SOMOLY0821, SOMOLY0822, SOMOLY0823, SOMOLY0824, SOMOLY0825, SOMOLY0826, SOMOLY0827, SOMOLY0828, SOMOLY0829, SOMOLY0830, SOMOLY0900, SOMOLY0901, SOMOLY1000, SOMOLY1001, SOMOLY1002, SOMOLY1003, SOMOLY1004, SOMOLY1005, SOMOLY1006, SOMOLY1007, SOMOLY1008, SOMOLY1009, SOMOLY1010, SOMOLY1011, SOMOLY1012, SOMOLY1013, SOMOLY1014, SOMOLY1015, SOMOLY1016, SOMOLY1017, SOMOLY1018, SOMOLY1019, SOMOLY1020, SOMOLY1021, SOMOLY1100, SOMOLY1101, SOMOLY1300, SOMOLY1301, SOMOLY1500, SOMOLY1600, SOMOLY1700, SOMOLY1800, SOMOLY1801, SOMOLY1802, SOMOLY1803, SOMOLY1804, SOMOLY1805, SOMOLY1806, SOMOLY1807, SOMOLY1808, SOMOLY1809, SOMOLY1810, SOMOLY1811, SOMOLY1812, SOMOLY1813, SOMOLY1814, SOMOLY1900, SOMOLY2000, SOMOLY2100, SOMOLY2200, SOMOLY2500, SOMOLY2501, SOMOLY2900, SOMOLY3000, SOMOLY3001, SOMOLY3100, SOMOLY3101, SOMOLY3500, SOMOLY4000, SOMOLY4001, SOMOLY4002, SOMOLY4100, SOMOLY4101, SOMOLY4200, SOMOLY4300, SOMOLY4500, SOMOLY5000, SOMOLY5001, SOMOLY5500, SOMOLY6100, SOMOLY6101, SOMOLY6500, SOMOLY6600, SOMOLY6700, SOMOLY6701, SOMOLY7100, SOMOLY7250, SOMOLY7300, SOMOLY7400, SOMOLY7500, SOMOLY7600, SOMOLY7700, SOMOLY7701, SOMOLY7713, SOMOLY7715, SOMOLY7800, SOMOLY8000, SOMOLY8100, SOMOLY8600, SOMOLY9000, SOMOLY9100, SOMOLY9500, SOMOLY9600, SOMOLY9601, SOMOLY9605, SOMOLY9700, SOMOLY9900

Revision

**Revision Date** Key/Legend

19 Mar 2021

< Less Than > Greater Than

**AICS** Australian Inventory of Chemical Substances

atm Atmosphere

**CAS** Chemical Abstracts Service (Registry Number)

cm<sup>2</sup> Square Centimetres CO2 Carbon Dioxide

COD Chemical Oxygen Demand deg C (°C) Degrees Celcius

EPA (New Zealand) Environmental Protection Authority of New Zealand

deg F (°F) Degrees Farenheit

g Grams

g/cm<sup>3</sup> Grams per Cubic Centimetre

g/I Grams per Litre

**HSNO** Hazardous Substance and New Organism **IDLH** Immediately Dangerous to Life and Health immiscible Liquids are insoluable in each other.

inHg Inch of Mercury inH20 Inch of Water

K Kelvin kg Kilogram

kg/m3 Kilograms per Cubic Metre

LC50 LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.

LD50 LD stands for Lethal Dose. LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals.

Itr or L Litre

m<sup>3</sup> Cubic Metre

mbar Millibar

mg Milligram

mg/24H Milligrams per 24 Hours

mg/kg Milligrams per Kilogram

mg/m³ Milligrams per Cubic Metre

Misc or Miscible Liquids form one homogeneous liquid phase regardless of the amount of either component present.

mm Millimetre

mmH20 Millimetres of Water

mPa.s Millipascals per Second

N/A Not Applicable

NIOSH National Institute for Occupational Safety and Health

NOHSC National Occupational Heath and Safety Commission

**OECD** Organisation for Economic Co-operation and Development

Oz Ounce

**PEL** Permissible Exposure Limit

Pa Pascal

ppb Parts per Billion

ppm Parts per Million

ppm/2h Parts per Million per 2 Hours

ppm/6h Parts per Million per 6 Hours

psi Pounds per Square Inch

**R** Rankine

**RCP** Reciprocal Calculation Procedure

**STEL** Short Term Exposure Limit

**TLV** Threshold Limit Value

tne Tonne

**TWA** Time Weighted Average

ug/24H Micrograms per 24 Hours

**UN** United Nations

wt Weight