

Disodium molybdate (VI) dihydrate,
JUNSEI CHEMICAL CO., LTD.,77080jis_J_E1-3,12/Jan/2023

Date of issue for the 1st edition : 25/Jun/2015

Date of revision : 12/Jan/2023

Safety Data Sheet

Section 1. Identification of the substance/mixture and of the company/undertaking

Product identifier:

Product name: Disodium molybdate (VI) dihydrate

Reference number(SDS):77080jis_J_E1-3

Product type:

Reagent

Details of the supplier of the safety data sheet

Manufacturer/Supplier: JUNSEI CHEMICAL CO., LTD.

Address: 1-6, Ohmano-cho, Koshigaya-shi, Saitama 343-0844, Japan

Division: Quality Assurance Department

Telephone number: +81-48-986-6161

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Section 2. Hazards identification

GHS classification and label elements of the product

Classification of the substance or mixture

HEALTH HAZARDS

Acute toxicity (Oral): Category 3

Skin corrosion/irritation: Category 2

Serious eye damage/eye irritation: Category 2

Germ cell mutagenicity: Category 2

Carcinogenicity: Category 2

Reproductive toxicity: Category 2

Specific target organ toxicity – single exposure: Category 3 (Respiratory tract irritation)

Specific target organ toxicity – repeated exposure: Category 1 (systemic toxicity, testis)

Specific target organ toxicity – repeated exposure: Category 2 (kidney)

(Note) GHS classification without description: Not classified/Classification not possible

Label elements



Signal word: Danger

HAZARD STATEMENT

H301-Toxic if swallowed

H315-Causes skin irritation

H319-Causes serious eye irritation

H341-Suspected of causing genetic defects

H351-Suspected of causing cancer

H361-Suspected of damaging fertility or the unborn child

H335-May cause respiratory irritation

H372-Causes damage to organs through prolonged or repeated exposure

H373-May cause damage to organs through prolonged or repeated exposure

PRECAUTIONARY STATEMENT

Prevention

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Disodium molybdate (VI) dihydrate,
JUNSEI CHEMICAL CO., LTD.,77080jis_J_E1-3,12/Jan/2023

Do not breathe dust/fume/gas/mist/vapors/spray.

Use only outdoors or in a well-ventilated area.

Wash contaminated parts thoroughly after handling.

Wear protective gloves.

Wear eye protection/face protection.

Use personal protective equipment as required.

Do not eat, drink or smoke when using this product.

Response

Get medical advice/attention if you feel unwell.

IF exposed or concerned: Get medical advice/attention.

Call a POISON CENTER/doctor/physician if you feel unwell.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

IF ON SKIN: Wash with plenty of soap and water.

If skin irritation occurs: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

IF SWALLOWED: Rinse mouth. Immediately call a POISON CENTER/doctor/physician.

Storage

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

Store locked up.

Disposal

Dispose of contents/container in accordance with local/national regulation.

Section 3. Composition/information on ingredients

Mixture/Substance selection:

Substance

Common name, synonyms: Sodium molybdate dihydrate

Ingredient name:Disodium molybdate(VI) dihydrate

Content (%):98.5 <

Chemical formula:MoNa2O4·2H2O

Chemicals No, Japan:1-478

CAS No.:10102-40-6 [7631-95-0(anh)]

MW:241.97

ECNO:231-551-7(anh)

Note : The figures shown above are not the specifications of the product.

Section 4. First-aid measures

Descriptions of first-aid measures

General measures

Get medical advice/attention if you feel unwell.

IF INHALED

Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTER/doctor/physician if you feel unwell.

IF ON SKIN (or hair)

Take off immediately all contaminated clothing. Rinse skin with water or shower.

Wash with plenty of soap and water.

If skin irritation or rash occurs: Get medical advice/attention.

If skin irritation occurs: Get medical advice/attention.

IF IN EYES

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy

Disodium molybdate (VI) dihydrate,
JUNSEI CHEMICAL CO., LTD.,77080jis_J_E1-3,12/Jan/2023

to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

IF SWALLOWED

Rinse mouth.

Immediately call a POISON CENTER/doctor/physician.

Call a POISON CENTER/doctor/physician if you feel unwell.

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Use appropriate extinguishing media suitable for surrounding facilities.

Unsuitable extinguishing media

Unsuitable extinguishing media data is not available.

Specific hazards arising from the substance or mixture

Containers may explode when heated.

Fire may produce irritating, corrosive and/or toxic gases.

Runoff from fire control or dilution water may cause pollution.

Advice for firefighters

Specific fire-fighting measures

Evacuate non-essential personnel to safe area.

Special protective equipment and precautions for fire-fighters

Wear fire resistant or flame retardant clothing.

Wear protective gloves/protective clothing/eye protection/face protection.

Firefighters should wear self-contained breathing apparatus with full face piece operated positive pressure mode.

Section 6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures

Ventilate area until material pick up is complete.

Wear proper protective equipment.

Environmental precautions

Avoid release to headsprings, rivers, lakes, ocean and groundwater.

Methods and materials for containment and cleaning up

Sweep up, place in a bag and hold for waste disposal.

Preventive measures for secondary accident

Collect spillage.

Section 7. Handling and storage

Precautions for safe handling

Preventive measures

(Exposure Control for handling personnel)

Do not breathe dust/fume/gas/mist/vapors/spray.

(Protective measures against fire and explosion)

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

Safety Measures

Obtain special instructions before use.

Disodium molybdate (VI) dihydrate,
JUNSEI CHEMICAL CO., LTD.,77080jis_J_E1-3,12/Jan/2023

Do not handle until all safety precautions have been read and understood.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.
Use personal protective equipment as required.
When using do not eat, drink or smoke.

Any incompatibilities

Strong oxidizing agents, Halogens should not be mixed with the chemicals.

Advice on general occupational hygiene

Wash contaminated parts thoroughly after handling.
Do not eat, drink or smoke when using this product.
Take off contaminated clothing and wash it before reuse.

Storage

Conditions for safe storage

Store in a well-ventilated place. Keep container tightly closed.
Keep cool. Protect from sunlight.
Store in accordance with local/national regulation.
Store locked up.

Container and packaging materials for safe handling data is not available.

Specific end use(s)

See information in Section 7.1 and 7.2 for handling and storage recommendations. See Section 8 for exposure controls and personal protection recommendations.

Section 8. Exposure controls/personal protection

Control parameters

Control value in MHLW is not available.

Adopted value

Adopted value in JSOH is not available.
ACGIH(2003) TWA: 0.5mg-Mo/m³(R) (LRT irr) (soluble compounds)
(2001) TWA: 10mg-Mo/m³(I); 3mg-Mo/m³(R) (LRT irr) (insoluble compounds)

Exposure controls

Appropriate engineering controls

Do not use in areas without adequate ventilation.
Eye wash station should be available.
Washing facilities should be available.

Individual protection measures

Respiratory protection

Wear respiratory protection.

Hand protection

Wear protective gloves.
Inspect before use and replace worn or damaged gloves.
Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions.

Eye protection

Wear safety glasses with side-shields.
Wear eye/face protection.

Skin and body protection

Wear impervious clothing and boots in case of repeated or prolonged treatment.

Section 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Crystals or crystalline powder

Color: Colorless~White

Disodium molybdate (VI) dihydrate,
JUNSEI CHEMICAL CO., LTD.,77080jis_J_E1-3,12/Jan/2023

Odor: None

Odor threshold data is not available.

Melting point/Freezing point: 100°C(The product loses water of crystallization)

Boiling point or initial boiling point data is not available.

Boiling range data is not available.

Flammability (gases, liquids and solids) data is not available.

Lower and upper explosion limit/flammability limit data is not available.

Flash point data is not available.

Auto-ignition temperature data is not available.

Decomposition temperature data is not available.

Self-Accelerating Decomposition Temperature/SADT data is not available.

pH: 7.0~10.0 (50g/L, 25°C)

Dynamic viscosity data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: 654.2g/liter(20°C)

Solubility in solvent: Practically insoluble in ethanol.

n-Octanol/water partition coefficient data is not available.

Vapor pressure data is not available.

Vapor density data is not available.

Density and/or relative density: 2.59(23.3°C)

Relative vapor density (Air=1) data is not available.

Relative density of the Vapor/air - mixture at 20°C (Air = 1) data is not available.

Particle characteristics data is not available.

Other information

Critical temperature data is not available.

Evaporation rate data is not available.

VOC data is not available.

Section 10. Stability and Reactivity

Reactivity

Reactivity data is not available.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

Reacts violently with halogens. This generates fire and explosion hazard.

Conditions to avoid

Contact with incompatible materials.

Open flames. Heating.

Incompatible materials

Strong oxidizing agents, Halogens

Hazardous decomposition products

Metal oxides.

Section 11. Toxicological Information

The product has not been subjected to toxicological testing. Refer to the available data on the constituents.

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[Product]

Category 3, Toxic if swallowed

Disodium molybdate (VI) dihydrate,
JUNSEI CHEMICAL CO., LTD.,77080jis_J_E1-3,12/Jan/2023

[Product data]

No data available.

[Data for components of the product]

[GHS Cat. Japan, base data]

(Disodium molybdate(VI))

rat LD50=250mg/kg (MOE risk assessment vol.10, 2012)

Acute toxicity (Dermal)

[Product]

Classification not possible (Insufficient data available or no data available).

[Product data]

No data available.

[Data for components of the product]

No data available.

Acute toxicity (Inhalation)

[Product]

Classification not possible (Insufficient data available or no data available).

[Product data]

No data available.

[Data for components of the product]

No data available.

Irritant properties

Skin corrosion/irritation

[Product]

Category 2, Causes skin irritation

[Product data]

No data available.

[Data for components of the product]

[GHS Cat. Japan, base data]

(Disodium molybdate(VI))

severe irritation (HSDB, Access on September 2015)

Serious eye damage/irritation

[Product]

Category 2, Causes serious eye irritation

[Product data]

No data available.

[Data for components of the product]

[GHS Cat. Japan, base data]

(Disodium molybdate(VI))

eyes irritation (HSDB, Access on September 2015)

Sensitization

Respiratory sensitization

[Product]

Classification not possible (Insufficient data available or no data available).

[Product data]

No data available.

[Data for components of the product]

No data available.

Skin sensitization

[Product]

Classification not possible (Insufficient data available or no data available).

[Product data]

No data available.

[Data for components of the product]

No data available.

Disodium molybdate (VI) dihydrate,
JUNSEI CHEMICAL CO., LTD.,77080jis_J_E1-3,12/Jan/2023

Germ cell mutagenicity

[Product]

Category 2, Suspected of causing genetic defects

[Product data]

No data available.

[Data for components of the product]

[GHS Cat. Japan, base data]

(Disodium molybdate(VI))

cat. 2; MOE risk assessment vol.10, 2012

Carcinogenicity

[Product]

Category 2, Suspected of causing cancer

[Product data]

No data available.

[Data for components of the product]

[GHS Cat. Japan, base data]

(Disodium molybdate(VI))

cat.2; ACGIH A3 (ACGIH 7th, 2003 (Soluble molybdenum compounds))

[ACGIH]

(Disodium molybdate(VI))

A3(as Mo)(2003) : Confirmed Animal Carcinogen with Unknown Relevance to Humans

Reproductive toxicity

[Product]

Category 2, Suspected of damaging fertility or the unborn child

[Product data]

No data available.

[Data for components of the product]

[GHS Cat. Japan, base data]

(Disodium molybdate(VI))

cat. 2; MOE risk assessment vol.10, 2012

Specific target organ toxicity (STOT)

STOT-single exposure

[Product]

Category 3, May cause respiratory irritation

[Product data]

No data available.

[Data for components of the product]

[cat.3 (respiratory tract irritation)]

[GHS Cat. Japan, base data]

(Disodium molybdate(VI))

respiratory tract irritation (MOE risk assessment vol.10, 2012)

STOT-repeated exposure

[Product]

Category 1, Causes damage to organs through prolonged or repeated exposure

Category 2, May cause damage to organs through prolonged or repeated exposure

[Product data]

No data available.

[Data for components of the product]

[cat.1]

[GHS Cat. Japan, base data]

(Disodium molybdate(VI))

testis, systemic toxicity

(Sodium molybdate dihydrate (CAS No. 10102-40-6) MOE risk assessment vol.10, 2012)

Disodium molybdate (VI) dihydrate,
JUNSEI CHEMICAL CO., LTD., 77080jis_J_E1-3,12/Jan/2023

[cat.2]

[GHS Cat. Japan, base data]

(Disodium molybdate(VI))

kidneys (Sodium molybdate dihydrate (CAS No. 10102-40-6) SIDS/SIAP, 2013)

Aspiration hazard

[Product]

Classification not possible (Insufficient data available or no data available).

[Product data]

No data available.

[Data for components of the product]

No data available.

Information on other hazards

The data of this product's anhydride (CAS No. 7631-95-0) was quoted as data for components of the product.

Section 12. Ecological Information

The product has not been subjected to ecotoxicological testing. Refer to the available data on the constituents.

Toxicity

Aquatic toxicity

[Product]

Based on available data, the classification criteria are not met.

[Product data]

No data available.

[Data for components of the product]

Hazardous to the aquatic environment, short-term (acute)

[GHS Cat. Japan, base data]

(Disodium molybdate(VI))

Crustacea(*Crangonyx pseudogracilis*) LC50 = 2650 mg-Mo/L/96hr;

Fish(*Oncorhynchus mykiss*) LC50 = 800 mg-Mo/L/96hr (all MOE risk assessment vol.10, 2012)

Hazardous to the aquatic environment, long-term (chronic)

[GHS Cat. Japan, base data]

(Disodium molybdate(VI))

Monocotyledonous plant(*Lemna minor*) NOEC (growth rate) = 24.7 mg-Mo/L/7day;

Crustacea(*Daphnia magna*) NOEC (reproduction) = 50 mg-Mo/L/21day;

Fish(*Oncorhynchus mykiss*) NOEC (lethal, growth) \geq 17.0 mg Mo/L/year

(all MOE risk assessment vol.10, 2012)

Water solubility

[Data for components of the product]

(Disodium molybdate(VI))

84 g/100 ml (100°C) (ICSC, 2004)

Persistence and degradability

Persistence and degradability data is not available.

Bioaccumulative potential

Bioaccumulative potential data is not available.

Mobility in soil

Mobility in soil data is not available.

Other adverse effects

Ozone depleting chemical data is not available.

Additional information

The data of this product's anhydride (CAS No. 7631-95-0) was quoted as data for components of the product.

Section 13. Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging

Waste treatment methods

Dispose of contents/container in accordance with local/national regulation.

Section 14. Transport Information**UN No., UN CLASS**

UN Number or ID Number : Not applicable

UN Proper Shipping Name : Not applicable

Class or division (Transport hazard class) : Not applicable

Packing group : Not applicable

IMDG Code (International Maritime Dangerous Goods Regulations)

UN Number or ID Number : Not applicable

UN Proper Shipping Name : Not applicable

Class or division (Transport hazard class) : Not applicable

Packing group : Not applicable

IATA (Dangerous Goods Regulations)

UN Number or ID Number : Not applicable

UN Proper Shipping Name : Not applicable

Class or division (Transport hazard class) : Not applicable

Packing group : Not applicable

Environmental hazards

Marine pollutants (yes/no) : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable to Transport in bulk according to Annex II of MARPOL and the IBC Code

MARPOL Annex V – HME (Harmful to the Marine Environment)

Specific target organ toxicity – repeated exposure: cat.1

Disodium molybdate(VI) dihydrate

Section 15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

U.S. Toxic Substances Control Act (TSCA) Inventory

Chemicals listed in TSCA Inventory

10102-40-6 [7631-95-0(anh)]

All components are listed or exempted.

Other regulatory information

We are not able to check up the regulatory information with regard to the substances in your country or region, therefore, we request this matter would be filled by your responsibility.

Regulatory information with regard to this substance in your country or in your region should be examined by your own responsibility.

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

Regulatory information in this section are limited to intentional ingredient(s), but does not contain information on non-intentional ingredients or impurities which are not informed by supplier(s).

Chemical safety assessment

Advice on safe handling for this product can be found in sections 7 and 8 of this SDS.

Section 16. Other information**GHS classification and labelling**

H301–Acute toxicity, Category 3: H301 Toxic if swallowed
H315–Skin corrosion/irritation, Category 2: H315 Causes skin irritation
H319–Serious eye damage/eye irritation, Category 2: H319 Causes serious eye irritation
H341–Germ cell mutagenicity, Category 2: H341 Suspected of causing genetic defects
H351–Carcinogenicity, Category 2: H351 Suspected of causing cancer
H361–Reproductive toxicity, Category 2: H361 Suspected of damaging fertility or the unborn child
H335–STOT – single exposure, Category 3, Respiratory tract irritation: H335 May cause respiratory irritation.
H372–STOT – Repeated exposure, Category 1: H372 Causes damage to organs through prolonged or repeated exposure
H373–STOT – Repeated exposure, Category 2: H373 May cause damage to organs through prolonged or repeated exposure

References and sources for data

Globally Harmonized System of classification and labelling of chemicals, UN
Recommendations on the TRANSPORT OF DANGEROUS GOODS 21th edit., 2019 UN
IMDG Code, 2020 Edition (Incorporating Amendment 40–20)
IATA Dangerous Goods Regulations (62nd Edition) 2021
2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)
2022 TLVs and BEIs. (ACGIH)
JIS Z 7252 : 2019
JIS Z 7253 : 2019
2021 Recommendation on TLVs (JSOH)
Notification No. 0111–1 (January 11, 2022), Chemical Hazards Control Division, Industrial Safety and Health Department, Labour Standards Bureau, MHLW in Japan
Supplier's data/information
Chemicals safety data management system "GHS Assistant" Version 4.20 (<https://www.asahi-ghs.com/>)
NITE Chemical Risk Information Platform "NITE-CHRIP"
(https://www.nite.go.jp/en/chem/chrip/chrip_search/systemTop)
GHS Classification Guidance for Enterprises 2019 Revised Edition (Ver. 2.0) (Mar. 2020, METI)

Abbreviations and acronyms

SDS (Safety Data Sheet)
LD50 (Lethal Dose, 50%)
LC50 (Lethal Concentration, 50%)
IARC (International Agency for Research on Cancer)
ACGIH (American Conference of Governmental Industrial Hygienists)
EPA (US Environmental Protection Agency)
NTP (US National Toxicology Program)
JSOH (Japan Society for Occupational Health)
EU (European Union)
EC50 (Effective Concentration, 50%)
NOEC (No Observed Effect Concentration)
BOD (Biochemical Oxygen Demand)
COD (Chemical Oxygen Demand)
BCF (Bioconcentration Factor)
anh (anhydride)

General Disclaimer

This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.

The data given here is based on current knowledge and experience. The purpose of this



Disodium molybdate (VI) dihydrate,
JUNSEI CHEMICAL CO., LTD.,77080jis_J_E1-3,12/Jan/2023

Safety Data Sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the products' properties.

The GHS classification data given here is based on current Japan official data (NITE published in 2021).