

## SDS = Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878 Issue date: 9/23/2011 Revision date: 2/2/2023 Supersedes version of: 12/3/2020 Version: 2.1

# SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Product form : Substance
Trade name : Sodium Molybdate
IUPAC name : disodium molybdate

 EC-No.
 : 231-551-7

 CAS-No.
 : 10102-40-6

 REACH registration No
 : 01-2119489495-21

 Product code
 : 100.184.000

 Type of product
 : Pure substance

 Formula
 : Na2MoO4.2H2O

Synonyms : disodium molybdate, dihydrate / molybdic acid, disodium salt, dihydrate / molyhibit 100 /

sodium molybdate(VI) dihydrate / sodium molybdate-2-hydrate

BIG No : 16654

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

#### 1.2.1. Relevant identified uses

Main use category : Industrial use, Professional use

Use of the substance/mixture : Fertiliser
Function or use category : Fertilisers

#### 1.2.2. Uses advised against

No additional information available

#### 1.3. Details of the supplier of the safety data sheet

Biron B.V. B.V. De Vecht 5

NL- 8253 PH Dronten - Flevoland

The Netherlands T +31 (0)321 336 730 Info@biron.nl - www.biron.nl

## 1.4. Emergency telephone number

Emergency number : National Poisons Information Service

+44 870 600 6266

worldwide: http://www.who.int/ipcs/poisons/centre/directory/en

## **SECTION 2: Hazards identification**

#### 2.1. Classification of the substance or mixture

#### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

#### Adverse physicochemical, human health and environmental effects

No additional information available

#### 2.2. Label elements

This substance is classified as not hazardous according to regulation (EC) 1272/2008 [CLP]. No labelling applicable

#### 2.3. Other hazards

No additional information available

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#### **SECTION 3: Composition/information on ingredients**

#### 3.1. Substances

Substance type : Mono-constituent

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
sodium molybdate, dihydrate	CAS-No.: 10102-40-6 EC-No.: 231-551-7 REACH-no: 01-2119489495- 21	> 99	Not classified

#### 3.2. Mixtures

Not applicable

## **SECTION 4: First aid measures**

#### 4.1. Description of first aid measures

First-aid measures general

: Check the vital functions. Unconscious: maintain adequate airway and respiration.
Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation.
Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.

First-aid measures after inhalation
First-aid measures after skin contact

: Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

: Rinse with water. Soap may be used. Do not apply (chemical) neutralizing agents. Take victim to a doctor if irritation persists.

First-aid measures after eye contact

: Rinse with water. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.

First-aid measures after ingestion

: Rinse mouth with water. Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital.

## 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation : AFTER INHALATION OF DUST: Coughing. Respiratory difficulties.

Symptoms/effects after skin contact : Slight irritation. Skin rash/inflammation.
Symptoms/effects after eye contact : Redness of the eye tissue. Slight irritation.

Symptoms/effects after ingestion : AFTER INGESTION OF HIGH QUANTITIES: Vomiting. Cramps/uncontrolled muscular

contractions.

Chronic symptoms : ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Tingling/irritation of the skin.

#### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## **SECTION 5: Firefighting measures**

## 5.1. Extinguishing media

Suitable extinguishing media : All extinguishing media allowed. Adapt extinguishing media to the environment.

## 5.2. Special hazards arising from the substance or mixture

Fire hazard : DIRECT FIRE HAZARD: Non combustible.

Explosion hazard : No direct explosion hazard.

Reactivity in case of fire : On burning: release of (highly) toxic gases/vapours.

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#### 5.3. Advice for firefighters

Precautionary measures fire

: Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.

Firefighting instructions : Dilute toxic gases with water spray.

Protection during firefighting : Clothing for fire fighters (including helmets, protective boots and gloves) according to

European Regulation EN 469, give a basic protection level for an incident with chemicals. Fire fighters have to ware suited clothing and an independent repertory device (SCBA) that

covers the face completely with pressure.

#### **SECTION 6: Accidental release measures**

## 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Avoid raising dust. Avoid inhalation of product. Do not get in eyes, on skin, or on clothing.

Provide adequate ventilation.

6.1.1. For non-emergency personnel

Protective equipment : Concerning personal protective equipment to use, see section 8. Dust cloud production:

compressed air/oxygen apparatus.

Emergency procedures : Mark the danger area. No naked flames. Prevent dust cloud formation, e.g. by wetting.

Wash contaminated clothes.

Measures in case of dust release : In case of dust production: keep upwind. Dust production: have neighbourhood close doors

and windows.

6.1.2. For emergency responders

Protective equipment : Wear suitable respiratory equipment in case of insufficient ventilation. Concerning personal

protective equipment to use, see section 8.

#### 6.2. Environmental precautions

Prevent entry to sewers and public waters.

#### 6.3. Methods and material for containment and cleaning up

For containment : Contain released product, collect/pump into suitable containers. Plug the leak, cut off the

supply. Knock down/dilute dust cloud with water spray.

Methods for cleaning up : Stop dust cloud by humidifying. Scoop solid spill into closing containers. Clean

contaminated surfaces with an excess of water. Wash clothing and equipment after

handling.

#### 6.4. Reference to other sections

See section 1 for emergency contact information. For further information refer to section 8: "Exposure controls/personal protection". Concerning disposal elimination after cleaning, see item 13.

## **SECTION 7: Handling and storage**

## 7.1. Precautions for safe handling

Precautions for safe handling : Wear personal protective clothing (see chapter 8). Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Avoid raising dust. Avoid breathing dust.

Keep away from naked flames/heat. Keep container tightly closed. Remove contaminated clothing immediately. Clean contaminated clothing. Comply with the legal requirements.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Strict hygiene required. Separate working clothes from town clothes. Launder

product. Strict hygiene required. Separate working clothes from town clothes. Launder separately. Emergency safety showers should be available in the immediate vicinity of any potential exposure.

#### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Store in a dry, well ventilated place away from sources of heat, ignition and direct sunlight.

Storage temperature : 20 °C

Heat and ignition sources : KEEP SUBSTANCE AWAY FROM: heat sources.

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Information on mixed storage : KEEP SUBSTANCE AWAY FROM: oxidizing agents. halogens.

Storage area : Store in a dry area. Keep container in a well-ventilated place. Store at room temperature.

Meet the legal requirements.

Special rules on packaging : SPECIAL REQUIREMENTS: closing, clean, correctly labelled, meet the legal requirements.

Secure fragile packagings in solid containers.

Packaging materials : SUITABLE MATERIAL: polyethylene, polypropylene.

## 7.3. Specific end use(s)

Fertilisers.

# SECTION 8: Exposure controls/personal protection

# 8.1. Control parameters

#### 8.1.1 National occupational exposure and biological limit values

Sodium Molybdate (10102-40-6)	
United Kingdom - Occupational Exposure Limits	
WEL TWA (OEL TWA) [1]	5 mg/m³
WEL STEL (OEL STEL)	10 mg/m³

## 8.1.2. Recommended monitoring procedures

No additional information available

#### 8.1.3. Air contaminants formed

No additional information available

#### 8.1.4. DNEL and PNEC

Sodium Molybdate (10102-40-6)			
DNEL/DMEL (Workers)	DNEL/DMEL (Workers)		
Long-term - systemic effects, inhalation	23.97 mg/m³		
DNEL/DMEL (General population)			
Long-term - systemic effects,oral	7.3 mg/kg bodyweight/day		
Long-term - systemic effects, inhalation	7.15 mg/m³		
PNEC (Water)			
PNEC aqua (freshwater)	27.25 mg/l		
PNEC aqua (marine water)	4.08 mg/l		
PNEC (Sediment)			
PNEC sediment (freshwater)	48500 mg/kg dwt		
PNEC sediment (marine water)	4250 mg/kg dwt		
PNEC (Soil)			
PNEC soil	20.39 mg/kg dwt		
PNEC (STP)			
PNEC sewage treatment plant	46.57 mg/l		

# 8.1.5. Control banding

No additional information available

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## 8.2. Exposure controls

#### 8.2.1. Appropriate engineering controls

#### Appropriate engineering controls:

Facilities: shower, eye shower. Ensure good ventilation of the work station.

#### 8.2.2. Personal protection equipment

#### Personal protective equipment:

Protective clothing. Gloves. Safety glasses. Dust formation: dust mask.

## Personal protective equipment symbol(s):











#### 8.2.2.1. Eye and face protection

## Eye protection:

Eye protection

Eye protection			
Туре	Field of application	Characteristics	Standard
Safety glasses			EN 166

## 8.2.2.2. Skin protection

#### Skin and body protection:

Protective clothing

#### Hand protection:

Gloves

Hand protection					
Туре	Material	Permeation	Thickness (mm)	Penetration	Standard
Disposable gloves	Latex, Nitrile rubber	6 (> 480 minutes)			EN ISO 374

#### 8.2.2.3. Respiratory protection

#### Respiratory protection:

Dust formation: dust mask

Respiratory protection			
Device	Filter type	Condition	Standard
Dust mask	Type P2, Type P3		

## 8.2.2.4. Thermal hazards

No additional information available

#### 8.2.3. Environmental exposure controls

No additional information available

# **SECTION 9: Physical and chemical properties**

## 9.1. Information on basic physical and chemical properties

Physical state : Solid

Colour : Colourless or white.

Appearance : Crystalline solid. Crystalline powder.

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Molecular mass : 241.95 g/mol
Odour : Odourless.
Odour threshold : Not available
Melting point : 687 °C
Freezing point : Not available
Boiling point : Not available
Flammability : Not available

Explosive properties : Product is not explosive.

Oxidising properties : Not oxidizing. **Explosive limits** : Not applicable Lower explosion limit : Not applicable Upper explosion limit : Not applicable : Non flammable Flash point : Not applicable Auto-ignition temperature : Not available Decomposition temperature рΗ : 9 – 10 (10 %) pH solution : 10 %

Viscosity, kinematic : Not applicable
Solubility : Soluble in water.

Partition coefficient n-octanol/water (Log Kow) : Not available Vapour pressure : Not available Vapour pressure at 50 °C : Not available Density : Not available

Relative density : 2.59 Type: 'relative density' Temp.: 23,3 °C

Water: ± 640 g/l

Relative vapour density at 20 °C : Not applicable Particle size : Not available

#### 9.2. Other information

#### 9.2.1. Information with regard to physical hazard classes

No additional information available

# 9.2.2. Other safety characteristics

Minimum ignition energy : Not applicable

VOC content : 0 %

Other properties : Hygroscopic, Basic reaction

# **SECTION 10: Stability and reactivity**

## 10.1. Reactivity

Reacts violently with (some) halogens compounds.

## 10.2. Chemical stability

The product is stable at normal handling and storage conditions.

## 10.3. Possibility of hazardous reactions

To our knowledge, the product does not present any particular risk, under normal conditions of use.

## 10.4. Conditions to avoid

No supplementary information available.

## 10.5. Incompatible materials

No additional information available.

## 10.6. Hazardous decomposition products

Reacts violently with (some) halogens. On burning: release of (highly) toxic gases/vapours.

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#### **SECTION 11: Toxicological information**

11.1. Information on I	hazard classes as de	efined in Regulation (	(EC) No 1272/2008

Acute toxicity (oral) : Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (dermal) : Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation) : Not classified (Based on available data, the classification criteria are not met)

Sodium Molybdate (10102-40-6)	
LD50 oral rat	4233 mg/kg (Rat, Oral)
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
LC50 Inhalation - Rat	> 1.93 mg/l/4h (Rat)
Skin corrosion/irritation	: Not classified (Based on available data, the classification criteria are not met) pH: 9 – 10 (10 %)

Serious eye damage/irritation : Not classified (Based on available data, the classification criteria are not met) pH: 9 – 10 (10 %)

Respiratory or skin sensitisation : Not classified (Based on available data, the classification criteria are not met)

Germ cell mutagenicity : Not classified (Based on available data, the classification criteria are not met)

Carcinogenicity : Not classified (Based on available data, the classification criteria are not met)

Reproductive toxicity : Not classified (Based on available data, the classification criteria are not met)

STOT-single exposure : Not classified (Based on available data, the classification criteria are not met)
STOT-repeated exposure : Not classified (Based on available data, the classification criteria are not met)

# Sodium Molybdate (10102-40-6)

NOAEC (inhalation, rat, dust/mist/fume, 90 days) > 0.1 mg/l air Animal: rat, Guideline: OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day Study)

Aspiration hazard : Not classified (Based on available data, the classification criteria are not met)

## 11.2. Information on other hazards

# 11.2.1. Endocrine disrupting properties

No additional information available

#### 11.2.2. Other information

Potential adverse human health effects and symptoms

: When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us

## **SECTION 12: Ecological information**

#### 12.1. Toxicity

Ecology - general : Classification concerning the environment: not applicable.

Ecology - air : Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014). Not

classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).

Ecology - water : Slightly harmful to crustacea. Slightly harmful to fishes. Slightly harmful to algae. Photolysis

in water.

Hazardous to the aquatic environment, short-term

(acute)

: Not classified

Hazardous to the aquatic environment, long-term

: Not classified

(chronic)

(CHOINE)	
Sodium Molybdate (10102-40-6)	
LC50 - Fish [1]	≈ 1536 mg/l (96-h Pimephales promelas)
EC50 - Crustacea [1]	330.1 ml/l (48-h Daphnia magna)
ErC50 algae	289.2 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Weight of evidence)

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## 12.2. Persistence and degradability

Sodium Molybdate (10102-40-6)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

## 12.3. Bioaccumulative potential

Sodium Molybdate (10102-40-6)	
BCF - Fish [1]	4.9 (28 day(s), Oncorhynchus tshawytscha, Fresh water, Weight of evidence, Anhydrous form)
BCF - Other aquatic organisms [1]	164.3 (BCF; Mollusca)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

## 12.4. Mobility in soil

Sodium Molybdate (10102-40-6)	
Ecology - soil	Soluble in water.

## 12.5. Results of PBT and vPvB assessment

No additional information available

## 12.6. Endocrine disrupting properties

No additional information available

#### 12.7. Other adverse effects

No additional information available

## **SECTION 13: Disposal considerations**

#### 13.1. Waste treatment methods

Regional legislation (waste)

: Disposal must be done according to official regulations.

Waste treatment methods

Recycle product or dispose properly.

Product/Packaging disposal recommendations

: Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle/reuse. Remove to an authorized dump (Class I). Precipitate/make insoluble.

Additional information

: Can be considered as non hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.

European List of Waste (LoW) code : 16 03 04 - inorganic wastes other than those mentioned in 16 03 03

## **SECTION 14: Transport information**

In accordance with ADR / IMDG / IATA / ADN / RID

## 14.1. UN number or ID number

UN-No. (ADR) : Not applicable UN-No. (IMDG) : Not applicable

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UN-No. (IATA) : Not applicable UN-No. (ADN) : Not applicable UN-No. (RID) : Not applicable

# 14.2. UN proper shipping name

Proper Shipping Name (ADR) : Not applicable
Proper Shipping Name (IMDG) : Not applicable
Proper Shipping Name (IATA) : Not applicable
Proper Shipping Name (ADN) : Not applicable
Proper Shipping Name (RID) : Not applicable

#### 14.3. Transport hazard class(es)

**ADR** 

Transport hazard class(es) (ADR) : Not applicable

**IMDG** 

Transport hazard class(es) (IMDG) : Not applicable

IATA

Transport hazard class(es) (IATA) : Not applicable

ADN

Transport hazard class(es) (ADN) : Not applicable

**RID** 

Transport hazard class(es) (RID) : Not applicable

## 14.4. Packing group

Packing group (ADR) : Not applicable
Packing group (IMDG) : Not applicable
Packing group (IATA) : Not applicable
Packing group (ADN) : Not applicable
Packing group (RID) : Not applicable

#### 14.5. Environmental hazards

Dangerous for the environment : No Marine pollutant : No

Other information : No supplementary information available

## 14.6. Special precautions for user

**Overland transport** 

Transport regulations (ADR) : Not subject

Transport by sea

Transport regulations (IMDG) : Not subject

Air transport

Transport regulations (IATA) : Not subject

Inland waterway transport

Transport regulations (ADN) : Not subject

Rail transport

Transport regulations (RID) : Not subject

## 14.7. Maritime transport in bulk according to IMO instruments

Not applicable

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#### **SECTION 15: Regulatory information**

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

#### 15.1.1. EU-Regulations

#### **REACH Annex XVII (Restriction List)**

No REACH Annex XVII restrictions

#### **REACH Annex XIV (Authorisation List)**

Sodium Molybdate is not on the REACH Annex XIV List

#### **REACH Candidate List (SVHC)**

Sodium Molybdate is not on the REACH Candidate List

#### **PIC Regulation (Prior Informed Consent)**

Sodium Molybdate is not subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 july 2012 concerning the export and import of hazardous chemicals.

#### **POP Regulation (Persistent Organic Pollutants)**

Sodium Molybdate is not subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

#### Ozone Regulation (1005/2009)

sodium molybdate, dihydrate is not subject to REGULATION (EU) No 1005/2009 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 September 2009 on substances that deplete the ozone layer.

#### VOC Directive (2004/42)

VOC content : 0 %

#### **Explosives Precursors Regulation (2019/1148)**

Contains no substance subject to Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the marketing and use of explosives precursors.

#### **Drug Precursors Regulation (273/2004)**

Contains no substance subject to Regulation (EC) 273/2004 of the European Parliament and of the Council of 11 February 2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances.

#### 15.1.2. National regulations

No additional information available

#### 15.2. Chemical safety assessment

A chemical safety assessment has been carried out for the substance or the mixture by the supplier This substance is classified as not hazardous according to regulation (EC) 1272/2008 [CLP]

#### **SECTION 16: Other information**

#### Indication of changes:

Complete review of safety data sheet.

Abbreviations and acronyms:	
CLP	CLP = Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
REACH	REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
SDS	SDS = Safety Data Sheet
LC50	Median lethal concentration
LD50	Median lethal dose
BCF	Bioconcentration factor

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Data sources : ECHA Website: Information on Registered Substances

Handbook of Chemistry and Physics CRC Press Inc

Information suppliers BIG-database.

Other information : DISCLAIMER OF LIABILITY The information in this SDS was obtained from sources which

we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be

applicable.

Safety Data Sheet (SDS), EU

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.