

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

# Zinc molybdate

Version number: 1

Issued: 2024-01-24



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

### 1.1. Product identifier

**Trade name**

Zinc molybdate

**CAS number**

13767-32-3

**EC number**

237-377-8

**Synonyms**

Molybdenum zinc tetraoxide

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

**Relevant identified uses**

Research and development.

**Not suitable for use in**

Not suitable for human consumption or veterinary purposes.

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

**Supplier**

Molekula Group

Address

Molekula Ltd, Lingfield Way, Darlington,  
DL1 4XX Darlington  
United Kingdom

Telephone

+44 (0) 3302 000 333

Email

info@molekula.com

Web site

www.molekula.com

**Contact person**

Kevin Banks

**Email**

+44 (0) 7769276927

### 1.4. Emergency telephone number

**Poison center/Additional emergency number**

0344 892 0111 - National Poisons Information Service (Newcastle Centre)

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## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

#### Classification

Hazardous to the aquatic environment — Chronic hazard category 2

Skin irritation, hazard category 2

Eye irritation, hazard category 2

Specific Target Organ Toxicity — Single exposure, hazard category 3

#### Hazard statements

H315, H319, H335, H411

### 2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008

#### Hazard pictograms



#### Signal word

Warning

#### Hazard statements

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H411 Toxic to aquatic life with long lasting effects.

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## Precautionary statements

P261 Avoid breathing dust/fumes/gas/mist/vapours/spray.  
P264 Wash skin thoroughly after handling.  
P271 Use only outdoors or in a well-ventilated area.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P312 Call a POISON CENTER/doctor if you feel unwell.  
P321 Specific treatment (see on this label).  
P391 Collect spillage.  
P302 + P352 IF ON SKIN: Wash with plenty of water/.  
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.  
P332 + P313 If skin irritation occurs: Get medical advice/attention.  
P337 + P313 If eye irritation persists: Get medical advice/attention.  
P405 Store locked up.  
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.  
P501 Dispose of contents/container to local regulations.  
P362 + P364 Take off contaminated clothing and wash it before reuse.

## 2.3. Other hazards

No data available

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

Chemical name	CAS No. EC No. REACH No. Index No.	Concentration	Classification	H-phrase M factor acute M factor chronic	Note
Zinc molybdate	13767-32-3 237-377-8 - -	100%	Skin Irrit. 2, Eye Irrit. 2, Aquatic Chronic 2, STOT SE 3	H315, H319, H335, H411 - -	-

## Molecular weight

225.3376

## Substance additional information

For the complete text of H- / EUH-statements mentioned in this section, see section 16.

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

Get medical attention if any discomfort continues. Show this Safety Data Sheet (SDS) to medical personnel.

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## Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. In case of persistent throat irritation or coughing: Seek medical attention and bring these instructions.

## Skin contact

IF ON SKIN: Wash with plenty of water. Continue to rinse for at least 15 minutes and seek medical attention. Get medical advice/attention if you feel unwell.

## Eye contact

Remove contact lenses if present. Rinse eyes with water. Continue to rinse for at least 15 minutes and seek medical attention.

## Ingestion

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Get medical advice/attention if you feel unwell.

## Information for doctors

First aiders/ medical personnel need to protect themselves.

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

The severity of the symptoms described will vary dependant of the concentration and the length of exposure.

## Inhalation

Single exposure may cause the following adverse effects: Upper respiratory irritation. Difficulty in breathing.

## Skin contact

Single exposure may cause the following adverse effects: Severe skin irritation.

## Eye contact

Single exposure may cause the following adverse effects: Severe irritation.

## Ingestion

Single exposure may cause the following adverse effects: Severe abdominal pain. Nausea, vomiting.

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

Treat symptomatically. No special treatment requirement.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

#### Suitable extinguishing media

In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish.

#### Unsuitable extinguishing media

No specific fire fighting procedure given.

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

Specific hazards:

Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

Not combustible.

Zinc.

Zinc oxides

Ambient fire may liberate hazardous vapours.

## 5.3. Advice for firefighters

### **Special protective equipment for fire-fighters**

Evacuate area. Avoid breathing gas, fume, vapours or spray. Cool containers exposed to heat with water spray and remove container, if no risk is involved.

## SECTION 6: Accidental release measures

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

Avoid breathing dust/fume/gas/mist/vapours/spray. Provide adequate ventilation. Avoid contact with skin and eyes. For personal protection, see section 8.

### 6.2. Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

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

Collect spillage with shovel, broom or the like and reuse, if possible. Dispose of large amounts of spillage/waste according to agreement with local authorities.

### 6.4. Reference to other sections

For personal protection, see section 8. For waste disposal, see section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

#### **Preventive handling precautions**

For precautions see section 2.2. Wear protective clothing, gloves, eye and face protection. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid ingestion and inhalation.

#### **General hygiene**

Observe good chemical hygiene practices. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove contaminated clothing and launder thoroughly before re-use. Wash skin thoroughly after handling.

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

Store at ambient temperature. Store in a dry place. Store in a closed container.

### 7.3. Specific end use(s)

No specific usage precautions noted.

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## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

No data available

### 8.2. Exposure controls

#### Personal Protective Equipment Symbols



#### Eye / face protection

Wear eye protection.

#### Hand protection

Wear protective gloves. Recommended gloves: Nitrile.

Glove Thickness: 0.11mm

Breakthrough time: 8 hours

Always inspect gloves before use. If signs of wear and tear are noticed then the gloves should be replaced.

No specific hygiene procedures noted, but good personal hygiene practices are always advisable, especially when working with chemicals. Wash contaminated skin thoroughly after handling.

#### Other skin protection

Wash skin thoroughly after handling.

#### Respiratory protection

Provide adequate ventilation. If ventilation is insufficient, suitable respiratory protection must be provided.

#### Environmental exposure controls

Avoid discharge into drains.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

#### Physical state

Solid

#### Colour

White.

#### Odour

No data available

#### Melting point / freezing point

> 700 °C

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## Boiling point or initial boiling point and boiling range

No data available

## Flammability

No data available

## Lower and upper explosion limit

No data available

## Flash point

No data available

## Auto-ignition temperature

No data available

## Decomposition temperature

No data available

## pH

No data available

## Kinematic viscosity

No data available

## Solubility

3.062 g/l

## Partition coefficient n-octanol/water

No data available

## Vapour pressure

No data available

## Density and/or relative density

3.857 g/cm<sup>3</sup>

## Relative vapour density

No data available

## Particle characteristics

No data available

## 9.2. Other information

No data available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

There are no known reactivity hazards associated with this product.

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## 10.2. Chemical stability

Stable under the prescribed storage conditions.

## 10.3. Possibility of hazardous reactions

Violent reactions possible with:  
Strong oxidising agents.

## 10.4. Conditions to avoid

No data available

## 10.5. Incompatible materials

Strong oxidising agents.

## 10.6. Hazardous decomposition products

See section 5.

## SECTION 11: Toxicological information

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Acute toxicity

Product / Substance name CAS / EC no.	Dose descriptor	Value / Dose	Exposure route	Test animals
Zinc molybdate 13767-32-3 / 237-377-8	LD50	2500 mg/kg	Oral	Rat

#### Skin corrosion/irritation

Product / Substance name CAS / EC no.	Result	Duration of exposure	Method / Guideline
Zinc molybdate 13767-32-3 / 237-377-8	No skin irritation.	3-60 minutes	In Vitro Test

#### Serious eye damage/irritation

Product / Substance name CAS / EC no.	Result	Duration of exposure	Method / Guideline
Zinc molybdate 13767-32-3 / 237-377-8	Irritating to eyes	6 hours	In vitro study

#### Respiratory or skin sensitisation



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Product / Substance name CAS / EC no.	Result	Species	Method / Guideline
Zinc molybdate 13767-32-3 / 237-377-8	Negative.	Mouse	Local Lymph Node Assay

Germ cell mutagenicity

Product / Substance name CAS / EC no.	Result	Metabolic activation / Exposure	Species	Method / Guideline
Zinc molybdate 13767-32-3 / 237-377-8	Negative.	with and without meta- bolic activation	S. typhimurium	Ames test

Aspiration hazard

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

11.2. Information on other hazards

No data available

SECTION 12: Ecological information

12.1. Toxicity

Acute algae toxicity

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
Zinc molybdate 13767-32-3 / 237-377-8	ErC50	2.2 mg/l	72 hours	Desmodesmus sub- spicatus (green algae)

Acute crustacean toxicity

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
Zinc molybdate 13767-32-3 / 237-377-8	EC50	8 mg/l	48 hours	Daphnia magna

12.2. Persistence and degradability

No data available

12.3. Bioaccumulative potential

No data available

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## 12.4. Mobility in soil

No data available

## 12.5. Results of PBT and vPvB assessment

No data available

## 12.6. Endocrine disrupting properties

This product does not contain any known or suspected endocrine disruptors.

## 12.7. Other adverse effects

No data available

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

#### Disposal considerations

Dispose of contents/container in accordance with local/regional/national/international regulations.

## SECTION 14: Transport information

### 14.1. UN number

3077

### 14.2. UN proper shipping name

#### ADR / RID / ADN proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc molybdate)

#### IMDG proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc molybdate)

#### IATA proper shipping name

Environmentally hazardous substance, solid, n.o.s. (Zinc molybdate)

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## 14.3. Transport hazard class(es)

### Label

ADR/RID/ADN



9 Environmental hazard

IMDG



9

IATA



9 Environmental hazard

### ADR / RID Class

9

### ADR / RID Classification code

M7

### ADR / RID hazard identification number

90

### IMDG Class

9

### IATA Class

9

### ADN Class

9

### ADN Class Code

M7

## 14.4. Packing group

ADR / RID / ADN: III

IMDG: III

IATA: III

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## 14.5. Environmental hazards

ADR/RID/ADN: Hazardous for the environment

### IMDG EmS

F-A, S-F

## 14.6. Special precautions for user

Tunnel restriction code: -

Transport category: 3

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

IBC Instruction: IBC08

## SECTION 15: Regulatory information

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

#### EU regulations

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

This material safety data sheet complies with the requirements of Regulation (EU) 2020/878.

#### National regulations

Directive: 2012/18/EU E2 ENVIRONMENTAL HAZARDS

### 15.2. Chemical safety assessment

No data available

## SECTION 16: Other information

### Phrase meaning

Aquatic Chronic 2 - Hazardous to the aquatic environment — Chronic hazard category 2

Skin Irrit. 2 - Skin irritation, hazard category 2

Eye Irrit. 2 - Eye irritation, hazard category 2

STOT SE 3 - Specific Target Organ Toxicity — Single exposure, hazard category 3

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H411 Toxic to aquatic life with long lasting effects.