

Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



Ammonium monovanadate ≥99,8 %, p.a.

article number: 4232

Version: 3.0 en

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

1.1 Product identifier

Identification of the substance

Ammonium monovanadate ≥99,8 %, p.a.

Article number

4232

EC number

232-261-3

CAS number

7803-55-6

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

Relevant identified uses:

Laboratory chemical
Laboratory and analytical use

Uses advised against:

Do not use for products which come into contact with foodstuffs. Do not use for private purposes (household). Food, drink and animal feeding-stuffs.

1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co. KG

Schoemperlenstr. 3-5

D-76185 Karlsruhe

Germany

Telephone: +49 (0) 721 - 56 06 0

Telefax: +49 (0) 721 - 56 06 149

e-mail: sicherheit@carlroth.de

Website: www.carlroth.de

Competent person responsible for the safety data sheet: Department Health, Safety and Environment

e-mail (competent person):

sicherheit@carlroth.de

1.4 Emergency telephone number

| Name | Street | Postal code/city | Telephone | Website |
|---|-----------|----------------------|--------------|---------|
| National Poisons Information Service City Hospital | Dudley Rd | B187QH Birmingham | 844 892 0111 | |

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification acc. to GHS

| Section | Hazard class | Category | Hazard class and category | Hazard statement |
|---------|-----------------------------------|----------|---------------------------|------------------|
| 3.1O | Acute toxicity (oral) | 3 | Acute Tox. 3 | H301 |
| 3.1I | Acute toxicity (inhal.) | 4 | Acute Tox. 4 | H332 |
| 3.3 | Serious eye damage/eye irritation | 2 | Eye Irrit. 2 | H319 |

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| Section | Hazard class | Category | Hazard class and category | Hazard statement |
|---------|---|----------|---------------------------|------------------|
| 3.7 | Reproductive toxicity | 2 | Repr. 2 | H361fd |
| 3.9 | Specific target organ toxicity - repeated exposure | 1 | STOT RE 1 | H372 |
| 4.1A | Hazardous to the aquatic environment - acute hazard | 1 | Aquatic Acute 1 | H400 |
| 4.1C | Hazardous to the aquatic environment - chronic hazard | 2 | Aquatic Chronic 2 | H411 |

For full text of abbreviations: see SECTION 16

The most important adverse physicochemical, human health and environmental effects

Delayed or immediate effects can be expected after short or long-term exposure. Spillage and fire water can cause pollution of watercourses.

2.2 Label elements

Labelling

Signal word **Danger**

Pictograms

GHS06, GHS08,
GHS09



Hazard statements

- H301 Toxic if swallowed
H319 Causes serious eye irritation
H332 Harmful if inhaled
H361fd Suspected of damaging fertility. Suspected of damaging the unborn child
H372 Causes damage to organs (respiratory tract) through prolonged or repeated exposure (if inhaled)
H410 Very toxic to aquatic life with long lasting effects

Precautionary statements

Precautionary statements - prevention

- P260 Do not breathe dust
P270 Do not eat, drink or smoke when using this product

Precautionary statements - response

- P308+P313 IF exposed or concerned: Get medical advice/attention

Precautionary statements - storage

- P405 Store locked up

For professional users only

2.3 Other hazards

Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.

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SECTION 3: Composition/information on ingredients

3.1 Substances

| | |
|-------------------|--------------------------|
| Name of substance | Ammonium monovanadate |
| Molecular formula | NH_4VO_3 |
| Molar mass | 117 g/mol |
| CAS No | 7803-55-6 |
| EC No | 232-261-3 |

Substance, Specific Conc. Limits, M-factors, ATE

| Specific Conc. Limits | M-Factors | ATE | Exposure route |
|-----------------------|-----------|-----------------------------|----------------------------------|
| - | - | 218,1 mg/kg 2,61 mg/l/4h | oral inhalation: dust/mist |

SECTION 4: First aid measures

4.1 Description of first aid measures



General notes

Take off contaminated clothing.

Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact

Rinse skin with water/shower.

Following eye contact

Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart. In case of eye irritation consult an ophthalmologist.

Following ingestion

Rinse mouth immediately and drink plenty of water. Call a physician immediately. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

4.2 Most important symptoms and effects, both acute and delayed

Irritation, Circulatory collapse, Gastrointestinal complaints, Cough, Diarrhoea, Nausea, Vomiting, Spasms, Dyspnoea

4.3 Indication of any immediate medical attention and special treatment needed

none

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SECTION 5: Firefighting measures

5.1 Extinguishing media



Suitable extinguishing media

co-ordinate firefighting measures to the fire surroundings!
water, foam, alcohol resistant foam, dry extinguishing powder, ABC-powder

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

Non-combustible.

Hazardous combustion products

In case of fire may be liberated: Ammonia (NH₃), Nitrogen oxides (NO_x)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Do not allow firefighting water to enter drains or water courses. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures



For non-emergency personnel

Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing.
Do not breathe dust. Provide adequate ventilation.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. If substance has entered a water course or sewer, inform the responsible authority.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains. Take up mechanically.

Advice on how to clean up a spill

Take up mechanically. Control of dust.

Other information relating to spills and releases

Place in appropriate containers for disposal.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

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SECTION 7: Handling and storage

7.1 Precautions for safe handling

Avoid exposure. Avoid dust formation. Clear contaminated areas thoroughly.

Measures to prevent fire as well as aerosol and dust generation

Removal of dust deposits.

Measures to protect the environment

Avoid release to the environment.

Advice on general occupational hygiene

When using do not eat or drink. Thorough skin-cleansing after handling the product.

7.2 Conditions for safe storage, including any incompatibilities

Store in a dry place.

Incompatible substances or mixtures

Observe hints for combined storage. Incompatible materials: see section 10.

Consideration of other advice:

Store locked up.

Ventilation requirements

Keep any substance that emits harmful vapours or gases in a place that allows these to be permanently extracted. Use local and general ventilation.

Specific designs for storage rooms or vessels

Recommended storage temperature: 15 – 25 °C

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

| Country | Name of agent | CAS No | Identifier | TWA [mg/m ³] | STEL [mg/m ³] | Ceiling-C [mg/m ³] | Notation | Source |
|---------|---------------|--------|------------|-----------------------------|------------------------------|-----------------------------------|----------|-----------|
| GB | dust | | WEL | 10 | | | i | EH40/2005 |
| GB | dust | | WEL | 4 | | | r | EH40/2005 |

Notation

Ceiling-C Ceiling value is a limit value above which exposure should not occur

i Inhalable fraction

r Respirable fraction

STEL Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)

TWA Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

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Human health values

| Relevant DNELs and other threshold levels | | | | |
|---|------------------------|------------------------------------|-------------------|----------------------------|
| Endpoint | Threshold level | Protection goal, route of exposure | Used in | Exposure time |
| DNEL | 0,64 mg/m ³ | human, inhalatory | worker (industry) | chronic - systemic effects |
| DNEL | 0,18 mg/m ³ | human, inhalatory | worker (industry) | chronic - local effects |
| DNEL | 0,92 mg/m ³ | human, inhalatory | worker (industry) | acute - local effects |

Environmental values

| Relevant PNECs and other threshold levels | | | | |
|---|-----------------|-----------------------|------------------------------|------------------------------|
| End-point | Threshold level | Organism | Environmental compartment | Exposure time |
| PNEC | 6,93 µg/l | aquatic organisms | water | intermittent release |
| PNEC | 7,6 µg/l | aquatic organisms | freshwater | short-term (single instance) |
| PNEC | 2,5 µg/l | aquatic organisms | marine water | short-term (single instance) |
| PNEC | 450 µg/l | aquatic organisms | sewage treatment plant (STP) | short-term (single instance) |
| PNEC | 240 mg/kg | aquatic organisms | freshwater sediment | short-term (single instance) |
| PNEC | 79 mg/kg | aquatic organisms | marine sediment | short-term (single instance) |
| PNEC | 7,2 mg/kg | terrestrial organisms | soil | short-term (single instance) |

8.2 Exposure controls

Individual protection measures (personal protective equipment)

Eye/face protection



Use safety goggles with side protection.

Skin protection



• hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The times are approximate values from measurements at 22 ° C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

• type of material

NBR (Nitrile rubber)

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- **material thickness**

>0,11 mm

- **breakthrough times of the glove material**

>480 minutes (permeation: level 6)

- **other protection measures**

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Respiratory protection



Respiratory protection necessary at: Dust formation. Particulate filter device (EN 143). P3 (filters at least 99,95 % of airborne particles, colour code: White).

Environmental exposure controls

Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|--|---|
| Physical state | solid |
| Form | powder |
| Colour | colourless - light yellow |
| Odour | odourless |
| Melting point/freezing point | 200 °C (slow decomposition) |
| Boiling point or initial boiling point and boiling range | not determined |
| Flammability | non-combustible |
| Lower and upper explosion limit | not relevant (solid) |
| Flash point | not applicable |
| Auto-ignition temperature | not determined |
| Decomposition temperature | 200 °C (ECHA) |
| pH (value) | 6 (in aqueous solution: 7,8 g/l, 20 °C) |
| Kinematic viscosity | not relevant |

Solubility(ies)

| | |
|------------------|--------------------------|
| Water solubility | 7,81 g/l at 20 °C (ECHA) |
|------------------|--------------------------|

Partition coefficient

| | |
|--|--------------------------|
| Partition coefficient n-octanol/water (log value): | not relevant (inorganic) |
|--|--------------------------|

| | |
|-----------------|----------------|
| Vapour pressure | not determined |
|-----------------|----------------|

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Density and/or relative density

| | |
|-------------------------|----------------------|
| Density | 2,3 g/cm³ at 20 °C |
| Relative vapour density | not relevant (solid) |
| Bulk density | 1.000 kg/m³ |

| | |
|--------------------------|--------------------|
| Particle characteristics | No data available. |
|--------------------------|--------------------|

Other safety parameters

| | |
|----------------------|------|
| Oxidising properties | none |
|----------------------|------|

9.2 Other information

| | |
|---|---|
| Information with regard to physical hazard classes: | hazard classes acc. to GHS (physical hazards): not relevant |
|---|---|

| | |
|-------------------------------|-------------------------------------|
| Other safety characteristics: | There is no additional information. |
|-------------------------------|-------------------------------------|

SECTION 10: Stability and reactivity

10.1 Reactivity

This material is not reactive under normal ambient conditions.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

Violent reaction with: strong oxidiser, Acids,

Release of an acute toxic gas: Caustic solutions

=> Ammonia (NH3)

10.4 Conditions to avoid

Keep away from heat. Decomposition takes place from temperatures above: 200 °C.

10.5 Incompatible materials

There is no additional information.

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Classification acc. to GHS

Acute toxicity

Toxic if swallowed. Harmful if inhaled.

GHS of the United Nations, annex 4. May be harmful in contact with skin.

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| Acute toxicity | | | | | |
|-----------------------|----------|--------------|---------|--------|--------|
| Exposure route | Endpoint | Value | Species | Method | Source |
| oral | LD50 | 218,1 mg/kg | rat | | ECHA |
| inhalation: dust/mist | LC50 | 2,61 mg/l/4h | rat | | ECHA |
| dermal | LD50 | >2.500 mg/kg | rat | | ECHA |

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Causes serious eye irritation.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitisier.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Suspected of damaging the unborn child. Suspected of damaging fertility.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

Causes damage to organs (respiratory tract) through prolonged or repeated exposure (if inhaled).

| Hazard category | Target organ | Exposure route |
|-----------------|-------------------|----------------|
| 1 | respiratory tract | if inhaled |

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

Symptoms related to the physical, chemical and toxicological characteristics

• If swallowed

diarrhoea, vomiting, nausea, gastrointestinal complaints

• If in eyes

Causes serious eye irritation

• If inhaled

Data are not available.

• If on skin

Data are not available.

• Other information

This information is based upon the present state of our knowledge.

11.2 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.

11.3 Information on other hazards

There is no additional information.

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SECTION 12: Ecological information

12.1 Toxicity

Very toxic to aquatic life with long lasting effects.

| Aquatic toxicity (acute) | | | | |
|--------------------------|------------|---------|--------|---------------|
| Endpoint | Value | Species | Source | Exposure time |
| LC50 | 9.005 µg/l | fish | ECHA | 24 h |
| ErC50 | 2.907 µg/l | algae | ECHA | 72 h |
| EC50 | 989,4 µg/l | algae | ECHA | 72 h |

| Aquatic toxicity (chronic) | | | | |
|----------------------------|-------------|----------------|--------|---------------|
| Endpoint | Value | Species | Source | Exposure time |
| LC50 | 44.000 µg/l | fish | ECHA | 24 h |
| EC50 | >100 mg/l | microorganisms | ECHA | 3 h |
| NOEC | ≥480 µg/l | fish | ECHA | 28 d |

12.2 Persistence and degradability

Data are not available.

12.3 Bioaccumulative potential

Data are not available.

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.

12.7 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods



This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used. Handle contaminated packages in the same way as the substance itself. Completely emptied packages can be recycled.

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13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

Properties of waste which render it hazardous

- HP 4** irritant - skin irritation and eye damage
- HP 5** specific target organ toxicity (STOT)/aspiration toxicity
- HP 6** acute toxicity
- HP 10** toxic for reproduction
- HP 14** ecotoxic

13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions. Non-contaminated packages may be recycled.

SECTION 14: Transport information

14.1 UN number or ID number

| | |
|-----------|---------|
| ADR RID | UN 2859 |
| IMDG-Code | UN 2859 |
| ICAO-TI | UN 2859 |

14.2 UN proper shipping name

| | |
|-----------|-----------------------|
| ADR RID | AMMONIUM METAVANADATE |
| IMDG-Code | AMMONIUM METAVANADATE |
| ICAO-TI | Ammonium metavanadate |

14.3 Transport hazard class(es)

| | |
|-----------|-----|
| ADR RID | 6.1 |
| IMDG-Code | 6.1 |
| ICAO-TI | 6.1 |

14.4 Packing group

| | |
|-----------|----|
| ADR RID | II |
| IMDG-Code | II |
| ICAO-TI | II |

14.5 Environmental hazards

hazardous to the aquatic environment

14.6 Special precautions for user

Provisions for dangerous goods (ADR) should be complied within the premises.

14.7 Maritime transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.

14.8 Information for each of the UN Model Regulations

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)Additional information

| | |
|---------------------------------------|---|
| Proper shipping name | AMMONIUM METAVANADATE |
| Particulars in the transport document | UN2859, AMMONIUM METAVANADATE, 6.1, II, |

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Classification code

(D/E), environmentally hazardous

Danger label(s)

T5



6.1, "Fish and tree"

Environmental hazards

yes (hazardous to the aquatic environment)

Special provisions (SP)

802(ADN)

Excepted quantities (EQ)

E4

Limited quantities (LQ)

500 g

Transport category (TC)

2

Tunnel restriction code (TRC)

D/E

Hazard identification No

60

Emergency Action Code

2Z

Regulations concerning the International Carriage of Dangerous Goods by Rail (RID)Additional information

Classification code

T5

Danger label(s)

6.1, "Fish and tree"



Environmental hazards

Yes
Hazardous to water

Special provisions (SP)

802(ADN)

Excepted quantities (EQ)

E4

Limited quantities (LQ)

500 g

Transport category (TC)

2

Hazard identification No

60

International Maritime Dangerous Goods Code (IMDG) - Additional information

Proper shipping name

AMMONIUM METAVANADATE

Particulars in the shipper's declaration

UN2859, AMMONIUM METAVANADATE, 6.1, II,
MARINE POLLUTANT

Marine pollutant

yes (hazardous to the aquatic environment)

Danger label(s)

6.1, "Fish and tree"



Special provisions (SP)

-

Excepted quantities (EQ)

E4

Limited quantities (LQ)

500 g

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EmS

F-A, S-A

Stowage category

A

Segregation group

2 - Ammonium compounds

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Proper shipping name

Ammonium metavanadate

Particulars in the shipper's declaration

UN2859, Ammonium metavanadate, 6.1, II

Environmental hazards

yes (hazardous to the aquatic environment)

Danger label(s)

6.1



Excepted quantities (EQ)

E4

Limited quantities (LQ)

1 kg

SECTION 15: Regulatory information

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

Relevant provisions of the European Union (EU)

Seveso Directive

| 2012/18/EU (Seveso III) | | | | |
|-------------------------|--|---|-------|-----|
| No | Dangerous substance/hazard categories | Qualifying quantity (tonnes) for the application of lower and upper-tier requirements | Notes | |
| E1 | environmental hazards (hazardous to the aquatic environment, cat. 1) | 100 | 200 | 56) |

Notation

56) Hazardous to the Aquatic Environment in category Acute 1 or Chronic 1

Deco-Paint Directive

| | |
|-------------|-------|
| VOC content | 0 % |
| VOC content | 0 g/l |

Industrial Emissions Directive (IED)

| | |
|-------------|-------|
| VOC content | 0 % |
| VOC content | 0 g/l |

Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

not listed

Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

not listed

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Water Framework Directive (WFD)

| List of pollutants (WFD) | | | | |
|--------------------------|---|--------|-----------|---------|
| Name of substance | Name acc. to inventory | CAS No | Listed in | Remarks |
| Ammonium monovanadate | Substances which contribute to eutrophication (in particular, nitrates and phosphates) | | a) | |
| Ammonium monovanadate | Substances and preparations, or the breakdown products of such, which have been proved to possess carcinogenic or mutagenic properties or properties which may affect steroidogenic, thyroid, reproduction or other endocrine-related functions in or via the aquatic environment | | a) | |
| Ammonium monovanadate | Metals and their compounds | | a) | |

Legend

a) Indicative list of the main pollutants

Regulation on the marketing and use of explosives precursors

not listed

Regulation on drug precursors

not listed

Regulation on substances that deplete the ozone layer (ODS)

not listed

Regulation concerning the export and import of hazardous chemicals (PIC)

not listed

Regulation on persistent organic pollutants (POP)

not listed

National regulations(GB)

List of substances subject to authorisation (GB REACH, Annex 14) / SVHC - candidate list

not listed

Restrictions according to GB REACH, Annex 17

| Dangerous substances with restrictions (GB REACH, Annex 17) | | | |
|---|--------------------------|--------|----|
| Name of substance | Name acc. to inventory | CAS No | No |
| Ammonium monovanadate | Inorganic ammonium salts | | 65 |

Other information

Directive 94/33/EC on the protection of young people at work. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

National inventories

| Country | Inventory | Status |
|---------|-----------|---------------------|
| AU | AIIC | substance is listed |
| CA | DSL | substance is listed |
| CN | IECSC | substance is listed |
| EU | ECSI | substance is listed |

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| Country | Inventory | Status |
|---------|------------|------------------------------|
| EU | REACH Reg. | substance is listed |
| JP | CSCL-ENCS | substance is listed |
| KR | KECI | substance is listed |
| MX | INSQ | substance is listed |
| NZ | NZIoC | substance is listed |
| PH | PICCS | substance is listed |
| TW | TCSI | substance is listed |
| US | TSCA | substance is listed (ACTIVE) |
| VN | NCI | substance is listed |

Legend

| | |
|------------|---|
| AIIC | Australian Inventory of Industrial Chemicals |
| CSCL-ENCS | List of Existing and New Chemical Substances (CSCL-ENCS) |
| DSL | Domestic Substances List (DSL) |
| ECSI | EC Substance Inventory (EINECS, ELINCS, NLP) |
| IECSC | Inventory of Existing Chemical Substances Produced or Imported in China |
| INSQ | National Inventory of Chemical Substances |
| KECI | Korea Existing Chemicals Inventory |
| NCI | National Chemical Inventory |
| NZIoC | New Zealand Inventory of Chemicals |
| PICCS | Philippine Inventory of Chemicals and Chemical Substances (PICCS) |
| REACH Reg. | REACH registered substances |
| TCSI | Taiwan Chemical Substance Inventory |
| TSCA | Toxic Substance Control Act |

15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Indication of changes (revised safety data sheet)

| Section | Former entry (text/value) | Actual entry (text/value) | Safety-relevant |
|---------|--|--|-----------------|
| 15.1 | Restrictions according to GB REACH, Annex 17: not listed | Restrictions according to GB REACH, Annex 17 | yes |
| 15.1 | | Dangerous substances with restrictions (GB REACH, Annex 17): change in the listing (table) | yes |

Abbreviations and acronyms

| Abbr. | Descriptions of used abbreviations |
|-----------|--|
| ADR | Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road) |
| ATE | Acute Toxicity Estimate |
| CAS | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances) |
| Ceiling-C | Ceiling value |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| DNEL | Derived No-Effect Level |
| EC50 | Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval |
| EC No | The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identi- |

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Ammonium monovanadate ≥99,8 %, p.a.

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| Abbr. | Descriptions of used abbreviations |
|-----------|---|
| | fier of substances commercially available within the EU (European Union) |
| ED | Endocrine disruptor |
| EH40/2005 | EH40/2005 Workplace exposure limits (http://www.nationalarchives.gov.uk/doc/open-government-licence/) |
| EINECS | European Inventory of Existing Commercial Chemical Substances |
| ELINCS | European List of Notified Chemical Substances |
| EmS | Emergency Schedule |
| ErC50 | ≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control |
| GB REACH | The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/758 (as amended) |
| GHS | "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations |
| IATA | International Air Transport Association |
| IATA/DGR | Dangerous Goods Regulations (DGR) for the air transport (IATA) |
| ICAO | International Civil Aviation Organization |
| ICAO-TI | Technical instructions for the safe transport of dangerous goods by air |
| IMDG | International Maritime Dangerous Goods Code |
| IMDG-Code | International Maritime Dangerous Goods Code |
| LC50 | Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval |
| LD50 | Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval |
| NLP | No-Longer Polymer |
| NOEC | No Observed Effect Concentration |
| PBT | Persistent, Bioaccumulative and Toxic |
| PNEC | Predicted No-Effect Concentration |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals |
| RID | Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail) |
| STEL | Short-term exposure limit |
| TWA | Time-weighted average |
| VOC | Volatile Organic Compounds |
| vPvB | Very Persistent and very Bioaccumulative |
| WEL | Workplace exposure limit |

Key literature references and sources for data

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

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List of relevant phrases (code and full text as stated in section 2 and 3)

| Code | Text |
|--------|--|
| H301 | Toxic if swallowed. |
| H319 | Causes serious eye irritation. |
| H332 | Harmful if inhaled. |
| H361fd | Suspected of damaging fertility. Suspected of damaging the unborn child. |
| H372 | Causes damage to organs (respiratory tract) through prolonged or repeated exposure (if inhaled). |
| H400 | Very toxic to aquatic life. |
| H411 | Toxic to aquatic life with long lasting effects. |

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.