



# SAFETY DATA SHEET

**MATERION**

Version #: 05

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

**Registration number** -  
**Synonyms** Molybdenum oxide (MoO<sub>3</sub>) \* Molybdenum trioxide (MoO<sub>3</sub>)  
**Materion Code** 1XC

**1.1. Product identifier**  
**Name of the substance** Molybdenum oxide (MoO<sub>3</sub>)  
**Identification number** 042-001-00-9 (Index number)

**1.2. Relevant identified uses of the substance or mixture and uses advised against**  
**Identified uses** Not available.  
**Uses advised against** None known.

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

**Supplier**  
**Company name** Materion Electronic Materials  
**Address** 6070 Parkland Blvd  
Mayfield Heights, OH 44124  
United States  
**Division**  
**Telephone** 1.216.383.4019  
**e-mail** Materion-PS@materion.com  
**Contact person** Product Stewardship Director

### 1.4. Emergency telephone number

**Document number** 1XC

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

The substance has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

#### Classification according to Regulation (EC) No 1272/2008 as amended

##### Health hazards

Acute toxicity, oral Category 3

Serious eye damage/eye irritation Category 2

Carcinogenicity Category 2

Specific target organ toxicity - single exposure Category 3 respiratory tract irritation

H351 - Suspected of causing cancer.

H335 - May cause respiratory irritation.

##### Environmental hazards

Hazardous to the aquatic environment, long-term aquatic hazard Category 3

### 2.2. Label elements

#### Label according to Regulation (EC) No. 1272/2008 as amended

**Contains:** Molybdenum trioxide

##### Hazard pictograms



**Signal word** Warning

##### Hazard statements

H335  
H351

May cause respiratory irritation.  
Suspected of causing cancer.

## Precautionary statements

### Prevention

P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P271 Use only outdoors or in a well-ventilated area.

### Response

P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P312 Call a POISON CENTRE or doctor/physician if you feel unwell.  
P337 + P313 If eye irritation persists: Get medical advice/attention.

### Storage

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.  
P405 Store locked up.

### Disposal

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

## Supplemental label information

For further information, please contact the Product Stewardship Department at +1.800.862.4118.

## 2.3. Other hazards

This substance does not meet vPvB / PBT criteria of Regulation (EC) No 1907/2006, Annex XIII.  
The substance is not included in the list established in accordance with REACH Article 59(1) for having endocrine disrupting properties.

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

#### General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Molybdenum trioxide	100	1313-27-5 215-204-7	-	042-001-00-9	
Classification: Carc. 2;H351, STOT SE 3;H335					

#### List of abbreviations and symbols that may be used above

DSD: Directive 67/548/EEC.  
CLP: Regulation No. 1272/2008.  
ATE: Acute toxicity estimate.  
M: M-factor  
vPvB: very persistent and very bioaccumulative substance.  
PBT: persistent, bioaccumulative and toxic substance.  
#: This substance has been assigned Community workplace exposure limit(s).  
#: This substance has been assigned Union workplace exposure limit(s).  
All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

#### Composition comments

The full text for all H-statements is displayed in section 16. The full text for all R- and H-phrases is displayed in section 16.

## SECTION 4: First aid measures

#### General information

In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

#### 4.1. Description of first aid measures

**Inhalation** Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTRE or doctor/physician if you feel unwell.

**Skin contact** Wash off with soap and water. Get medical attention if irritation develops and persists.

**Eye contact** Do not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

**Ingestion** Call a physician or poison control centre immediately. Rinse mouth. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

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

Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Dusts may irritate the respiratory tract, skin and eyes.

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

Provide general supportive measures and treat symptomatically. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

### SECTION 5: Firefighting measures

#### General fire hazards

No unusual fire or explosion hazards noted.

#### 5.1. Extinguishing media

##### Suitable extinguishing media

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO<sub>2</sub>).

##### Unsuitable extinguishing media

None known.

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

During fire, gases hazardous to health may be formed.

#### 5.3. Advice for firefighters

##### Special protective equipment for firefighters

Wear suitable protective equipment.

##### Special firefighting procedures

Use water spray to cool unopened containers. Water runoff can cause environmental damage.

#### Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.

### SECTION 6: Accidental release measures

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

##### For non-emergency personnel

Avoid inhalation of dust. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Wear appropriate personal protective equipment.

##### For emergency responders

Keep unnecessary personnel away. Ensure adequate ventilation. Avoid inhalation of dust. Local authorities should be advised if significant spillages cannot be contained. Use personal protection recommended in Section 8 of the SDS.

#### 6.2. Environmental precautions

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

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

Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Collect dust using a vacuum cleaner equipped with HEPA filter. Prevent product from entering drains.

Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers.

#### 6.4. Reference to other sections

For personal protection, see section 8 of the SDS. For waste disposal, see section 13.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Minimise dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Do not taste or swallow. Avoid breathing dust. Avoid contact with eyes. Avoid prolonged exposure. When using, do not eat, drink or smoke. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Do not empty into drains. Observe good industrial hygiene practices.

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

Store locked up. Store in a cool, dry place out of direct sunlight. Store in tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

#### 7.3. Specific end use(s)

Observe industrial sector guidance on best practices.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

## Occupational exposure limits

### Czech Republic. Occupational exposure limit values of chemicals at work (Decree on protection of health at work, 361/2007, Annex 2, Part A & Annex 3, Part A, as amended)

Material	Type	Value
Molybdenum trioxide (CAS 1313-27-5)	Ceiling	25 mg/m <sup>3</sup>
	TWA	5 mg/m <sup>3</sup>

### Finland. HTP-arvot, App 3., Binding Limit Values, Social Affairs and Ministry of Health

Material	Type	Value
Molybdenum trioxide (CAS 1313-27-5)	TWA	0,5 mg/m <sup>3</sup>

### France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984

Material	Type	Value
Molybdenum trioxide (CAS 1313-27-5)	VLE	10 mg/m <sup>3</sup>

**Regulatory status:** Indicative limit (VL)

VME 5 mg/m<sup>3</sup>

**Regulatory status:** Indicative limit (VL)

### Poland. Maximum permissible concentrations and intensities of harmful factors in the work environment (Dz.U.Poz. 1286/2018, Annex 1)

Material	Type	Value
Molybdenum trioxide (CAS 1313-27-5)	STEL	10 mg/m <sup>3</sup>
	TWA	4 mg/m <sup>3</sup>

**Biological limit values** No biological exposure limits noted for the ingredient(s).

**Recommended monitoring procedures** Follow standard monitoring procedures.

**Derived no effect levels (DNELs)** Not available.

**Predicted no effect concentrations (PNECs)** Not available.

## 8.2. Exposure controls

**Appropriate engineering controls** Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. If engineering measures are not sufficient to maintain concentrations of dust particulates below the OEL (occupational exposure limit), suitable respiratory protection must be worn. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits. Provide eyewash station.

## Individual protection measures, such as personal protective equipment

**General information** Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment. Eye wash fountain is recommended.

**Eye/face protection** Wear eye/face protection. Chemical respirator with organic vapour cartridge, full facepiece, dust and mist filter.

### Skin protection

**- Hand protection** Wear appropriate chemical resistant gloves.

**- Other** Use personal protective equipment as required. Use of an impervious apron is recommended. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

**Respiratory protection** Chemical respirator with organic vapour cartridge, full facepiece, dust and mist filter.

**Thermal hazards** Wear appropriate thermal protective clothing, when necessary.

**Hygiene measures** Observe any medical surveillance requirements. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

<b>Environmental exposure controls</b>	Contain spills and prevent releases and observe national regulations on emissions. Inform appropriate managerial or supervisory personnel of all environmental releases. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Fume scrubbers, filters or engineering modifications to the process equipment may be necessary to reduce emissions to acceptable levels.
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## SECTION 9: Physical and chemical properties

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

<b>Physical state</b>	Solid.
<b>Form</b>	Powder.
<b>Colour</b>	Not available.
<b>Odour</b>	Not available.
<b>Melting point/freezing point</b>	795 °C (1463 °F)
<b>Boiling point or initial boiling point and boiling range</b>	1155 °C (2111 °F)
<b>Flammability</b>	Not available.
<b>Upper/lower flammability or explosive limits</b>	
<b>Explosive limit - lower ( %)</b>	Not available.
<b>Explosive limit – upper ( %)</b>	Not available.
<b>Flash point</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>pH</b>	Not available.
<b>Kinematic viscosity</b>	Not available.
<b>Solubility</b>	
<b>Solubility (water)</b>	Not available.
<b>Partition coefficient (n-octanol/water) (log value)</b>	Not available.
<b>Vapour pressure</b>	<0,0000001 kPa (25 °C (77 °F))
<b>Density and/or relative density</b>	
<b>Density</b>	4,69 g/cm3 estimated at 26 °C
<b>Vapour density</b>	Not available.
<b>Particle characteristics</b>	Not available.

### 9.2. Other information

<b>9.2.1. Information with regard to physical hazard classes</b>	No relevant additional information available.
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### 9.2.2. Other safety characteristics

<b>Molecular formula</b>	Mo-O3
<b>Molecular weight</b>	143,95 g/mol
<b>Specific gravity</b>	4,69 at 26 °C

## SECTION 10: Stability and reactivity

<b>10.1. Reactivity</b>	Not available.
<b>10.2. Chemical stability</b>	Material is stable under normal conditions.
<b>10.3. Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.
<b>10.4. Conditions to avoid</b>	Contact with incompatible materials.
<b>10.5. Incompatible materials</b>	None known.
<b>10.6. Hazardous decomposition products</b>	No hazardous decomposition products are known.

## SECTION 11: Toxicological information

<b>General information</b>	Occupational exposure to the substance or mixture may cause adverse effects.
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## Information on likely routes of exposure

<b>Inhalation</b>	Dust may irritate respiratory system. Prolonged inhalation may be harmful.
<b>Skin contact</b>	Dust or powder may irritate the skin. Due to lack of data the classification is not possible.
<b>Eye contact</b>	Causes serious eye irritation.
<b>Ingestion</b>	Toxic if swallowed.

**Symptoms** Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Dusts may irritate the respiratory tract, skin and eyes.

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

**Acute toxicity** Toxic if swallowed. Toxic if swallowed. May cause respiratory irritation.

Product	Species	Test Results
Molybdenum trioxide (CAS 1313-27-5)		
<b>Acute</b>		
<b>Oral</b>		
LD50	Rat	83 mg/kg

\* Estimates for product may be based on additional component data not shown.

**Skin corrosion/irritation** Due to partial or complete lack of data the classification is not possible.

**Serious eye damage/eye irritation** Causes serious eye irritation.

**Respiratory sensitisation** Due to partial or complete lack of data the classification is not possible.

**Skin sensitisation** Due to partial or complete lack of data the classification is not possible.

**Germ cell mutagenicity** Due to partial or complete lack of data the classification is not possible.

**Carcinogenicity** Suspected of causing cancer.

**Hungary. 26/2000 EüM Ordinance on protection against and preventing risk relating to exposure to carcinogens at work (as amended)**

Molybdenum trioxide (CAS 1313-27-5)

**IARC Monographs. Overall Evaluation of Carcinogenicity**

Molybdenum trioxide (CAS 1313-27-5) 2B Possibly carcinogenic to humans.

**Reproductive toxicity** Due to partial or complete lack of data the classification is not possible.

**Specific target organ toxicity - single exposure** Respiratory tract irritation.

**Specific target organ toxicity - repeated exposure** Due to partial or complete lack of data the classification is not possible.

**Aspiration hazard** Due to partial or complete lack of data the classification is not possible.

**Mixture versus substance information** No information available.

### 11.2. Information on other hazards

**Endocrine disrupting properties** This substance does not have endocrine disrupting properties with respect to human health, as it does not meet the assessment criteria laid out in Regulations (EC) No 1907/2006, (EU) No 2017/2100 and (EU) 2018/605.

**Other information** Not available.

## SECTION 12: Ecological information

**12.1. Toxicity** Harmful to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected. Due to partial or complete lack of data the classification for hazardous to the aquatic environment, acute hazard, is not possible.

Product	Species	Test Results
Molybdenum trioxide (CAS 1313-27-5)		
<b>Aquatic</b>		
<i>Acute</i>		
Fish	LC50	Fathead minnow (Pimephales promelas) 70 mg/l, 96 hours

\* Estimates for product may be based on additional component data not shown.

**12.2. Persistence and degradability** No data is available on the degradability of this product.

<b>12.3. Bioaccumulative potential</b>	No data available.
<b>Partition coefficient n-octanol/water (log Kow)</b>	Not available.
<b>Bioconcentration factor (BCF)</b>	Not available.
<b>12.4. Mobility in soil</b>	No data available.
<b>12.5. Results of PBT and vPvB assessment</b>	This substance does not meet vPvB / PBT criteria of Regulation (EC) No 1907/2006, Annex XIII.
<b>12.6. Endocrine disrupting properties</b>	This substance does not have endocrine disrupting properties with respect to the environment, as it does not meet the assessment criteria laid out in Regulations (EC) No 1907/2006, (EU) No 2017/2100 and (EU) 2018/605.
<b>12.7. Other adverse effects</b>	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.
<b>12.8. Additional information</b>	
<b>Estonia Dangerous substances in soil Data</b>	
Molybdenum trioxide (CAS 1313-27-5)	Molybdenum (Mo) 10 mg/kg Molybdenum (Mo) 20 mg/kg Molybdenum (Mo) 200 mg/kg

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

<b>Residual waste</b>	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
<b>Contaminated packaging</b>	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.
<b>EU waste code</b>	The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.
<b>Disposal methods/information</b>	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Special precautions</b>	Dispose in accordance with all applicable regulations.

## SECTION 14: Transport information

### ADR

<b>14.1. UN number</b>	UN3288
<b>14.2. UN proper shipping name</b>	Toxic solid, inorganic, n.o.s.
<b>14.3. Transport hazard class(es)</b>	
Class	6.1
Subsidiary risk	-
Label(s)	6.1
Hazard No. (ADR)	Not assigned.
Tunnel restriction code	Not assigned.
<b>14.4. Packing group</b>	III
<b>14.5. Environmental hazards</b>	No.
<b>14.6. Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.

### RID

<b>14.1. UN number</b>	UN3288
<b>14.2. UN proper shipping name</b>	TOXIC SOLID, INORGANIC, N.O.S.
<b>14.3. Transport hazard class(es)</b>	
Class	6.1
Subsidiary risk	-
Label(s)	6.1
<b>14.4. Packing group</b>	III

**14.5. Environmental hazards** No.  
**14.6. Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

#### ADN

**14.1. UN number** UN3288  
**14.2. UN proper shipping name** Toxic solid, inorganic, n.o.s.  
**14.3. Transport hazard class(es)**  
    **Class** 6.1  
    **Subsidiary risk** -  
    **Label(s)** 6.1  
**14.4. Packing group** III  
**14.5. Environmental hazards** No.  
**14.6. Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

#### IATA

**14.1. UN number** UN3288  
**14.2. UN proper shipping name** Toxic solid, inorganic, n.o.s.  
**14.3. Transport hazard class(es)**  
    **Class** 6.1  
    **Subsidiary risk** -  
**14.4. Packing group** III  
**14.5. Environmental hazards** No.  
**ERG Code** 6L  
**14.6. Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.  
**Other information**  
    **Passenger and cargo aircraft** Allowed with restrictions.  
    **Cargo aircraft only** Allowed with restrictions.

#### IMDG

**14.1. UN number** UN3288  
**14.2. UN proper shipping name** TOXIC SOLID, INORGANIC, N.O.S.  
**14.3. Transport hazard class(es)**  
    **Class** 6.1  
    **Subsidiary risk** -  
**14.4. Packing group** III  
**14.5. Environmental hazards**  
    **Marine pollutant** No.  
**EmS** F-A, S-A  
**14.6. Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

ADN; ADR; IATA; IMDG; RID



## SECTION 15: Regulatory information

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



**Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended**

Not listed.

**Regulation (EU) 2019/1021 On persistent organic pollutants (recast), as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended**

Not listed.

**Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended**

Not listed.

**Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA**

Not listed.

#### **Authorisations**

**Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended**

Not listed.

#### **Restrictions on use**

**Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use, as amended - Conditions of restriction given for the associated entry number should be considered**

Not listed.

**Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.**

Not listed.

**Regulation 2019/1148 on Marketing and Use of Explosive Precursors, Annex I, as amended**

Not listed.

**Regulation 2019/1148 on Marketing and Use of Explosive Precursors, Annex II, as amended**

Not listed.

#### **Other regulations**

This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006. The product is classified and labelled in accordance with EC directives or respective national laws. Pregnant women should not work with the product, if there is the least risk of exposure. The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

#### **National regulations**

Follow national regulation for work with chemical agents.  
According to Directive 92/85/EEC as amended, pregnant women should not work with the product, if there is the least risk of exposure.

Young people under 18 years old are not allowed to work with this product according to EU Directive 94/33/EC on the protection of young people at work, as amended Use of this product by young persons under the age of 18 is not allowed in accordance with the Management of Health and Safety at Work Regulations 1999 [SI 1999/3242], as amended. Follow national regulation for work with chemical agents in accordance with Directive 98/24/EC, as amended.

#### **France regulations**

**France INRS Table of Occupational Diseases**

Not regulated.

#### **15.2. Chemical safety assessment**

No Chemical Safety Assessment has been carried out.

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

#### **List of abbreviations**

ADN: European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways.  
ADR: Agreement concerning the International Carriage of Dangerous Goods by Road.  
AGW: Occupational threshold limit value (Arbeitsplatzgrenzwert – Germany).  
CAS: Chemical Abstract Service.  
CEN: European Committee for Standardization.

IATA: International Air Transport Association.  
 IBC Code: International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk.  
 IMDG: International Maritime Dangerous Goods.  
 MAC: Maximum Allowed Concentration.  
 MARPOL: International Convention for the Prevention of Pollution from Ships.  
 PBT: Persistent, bioaccumulative and toxic.  
 RID: Regulations concerning the International Carriage of Dangerous Goods by Rail.  
 STEL: Short term exposure limit.  
 TLV: Threshold Limit Value.  
 TWA: Time Weighted Average.  
 VLE: Exposure Limit Value.  
 VME: Exposure Average Value.  
 vPvB: Very persistent and very bioaccumulative.  
 Not available.  
 Not applicable.

## References

## Information on evaluation method leading to the classification of mixture

## Full text of any statements, which are not written out in full under sections 2 to 15

H335 May cause respiratory irritation.  
 H351 Suspected of causing cancer.

## Revision information

This document has undergone significant changes and should be reviewed in its entirety.

## Training information

Follow training instructions when handling this material.

## Further information

Transportation Emergency  
 Call Chemtrec at:  
 US: 800.424.9300  
 International: 703.741.5970  
 Spain: 900.868.538  
 Switzerland: 0800.564.402  
 Chemtrec's toll free, mobile-enabled number in Germany – 0800 1817059  
 South Korea Toll-free Number – 080-880-0468

## Disclaimer

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