

## SAFETY DATA SHEET

## Maraging steel M300 (1.2709)

## SECTION 1: Identification

## 1.1. Product identifier

## ▼ Trade name

Maraging steel M300 (1.2709)

## ▼ Other names / Synonyms

Document No.: H-5800-3485-02-B\_EN

## Product no.

A-5771-0400

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

## Relevant identified uses of the substance or mixture

Metal powder for additive layer manufacture

## Uses advised against

None known.

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

## Company and address

**Renishaw plc**

New Mills

Wotton-under-Edge,

GL12 8JR, Gloucestershire,

United Kingdom

+44 (0) 1453 524524

www.renishaw.com

## E-mail

msds@renishaw.com

## SDS date

2/14/2023

## SDS Version

1.1

## Date of previous version

10/21/2022 (1.0)

## 1.4. Emergency telephone number

Contact the poison control at 1-800-222-1222 (24/7) or use the webPOISONCONTROL® ([triage.webpoisoncontrol.org](http://triage.webpoisoncontrol.org)) to get specific guidance for your case

See also section 4 "First aid measures".

Emergency contact from supplier: +44 (0) 1453 524524 (UK office hours 08:00 to 17:00 UTC Monday to Thursday, 08:00 to 16:00 Friday)

## SECTION 2: Hazard(s) identification

## OSHA/HCS status

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

## Classification of the substance or mixture

Skin Sens. 1; H317, May cause an allergic skin reaction.

Resp. Sens. 1; H334, May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Muta. 2; H341, Suspected of causing genetic defects.

Carc. 1B; H350, May cause cancer.

Repr. 1B; H360F, May damage fertility.

STOT RE 1; H372, Causes damage to organs through prolonged or repeated exposure.

## 2.2. Label elements

Hazard pictogram(s)

Conforms to OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200 / revised 2012)



**Signal word**

Danger

**Hazard statement(s)**

- May cause an allergic skin reaction. (H317)
- May cause allergy or asthma symptoms or breathing difficulties if inhaled. (H334)
- Suspected of causing genetic defects. (H341)
- May cause cancer. (H350)
- May damage fertility. (H360F)
- Causes damage to organs through prolonged or repeated exposure. (H372)

**Safety statement(s)**

**General**

-

**Prevention**

- Obtain special instructions before use. (P201)
- Do not breathe dust. (P260)
- Contaminated work clothing should not be allowed out of the workplace. (P272)
- Wear eye protection/protective gloves/protective clothing. (P280)
- [In case of inadequate ventilation] wear respiratory protection. (P284)

**Response**

- IF INHALED: Remove person to fresh air and keep comfortable for breathing. (P304+P340)
- IF exposed or concerned: Get medical advice/attention. (P308+P313)
- Get medical advice/attention if you feel unwell. (P314)
- If skin irritation or rash occurs: Get medical advice/attention. (P333+P313)
- If experiencing respiratory symptoms: Call a POISON CENTER/doctor (P342+P311)
- Take off contaminated clothing and wash it before reuse. (P362+P364)

**Storage**

-

**▼ Disposal**

- Dispose of contents/container in accordance with local regulation. (P501)

**Additional labelling**

Restricted to professional users.

**2.3. Other hazards**

**Additional warnings**

- This mixture/product does not contain any substances considered to meet the criteria classifying them as PBT and/or vPvB.
- May form explosible dust-air mixture if dispersed.

**SECTION 3: Composition/Information on Ingredients**

**3.1. ▼ Substances**

Not applicable. This product is a mixture.

**3.2. Mixtures**

Product/substance	Identifiers	% w/w	Classification	Note
Iron	CAS No.: 7439-89-6	65.55 - 69.9%		
Nickel	CAS No.: 7440-02-0	17.1 - 19.0%	Skin Sens. 1, H317 Carc. 2, H351 STOT RE 1, H372	
Cobalt	CAS No.: 7440-48-4	8.0 - 9.0%	Skin Sens. 1, H317 Resp. Sens. 1, H334 Muta. 2, H341 Carc. 1B, H350 Repr. 1B, H360F	
Molybdenum	CAS No.: 7439-98-7	4.5 - 5.2%		
Chromium	CAS No.: 7440-47-3	0.5%		

Conforms to OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200 / revised 2012)

Where the concentration of an ingredient is expressed as a range the exact concentration has been withheld as a trade secret.

See full text of H-phrases in section 16. Occupational exposure limits are listed in section 8, if these are available.

#### Other information

None known.

### SECTION 4: First-aid measures

#### 4.1. ▼ Description of first aid measures

##### General information

If breathing is irregular, drowsiness, loss of consciousness or cramps: Call 911 and give immediate treatment (first aid).

Contact a doctor if in doubt about the injured person's condition or if the symptoms persist. Never give an unconscious person water or other drink.

##### Inhalation

Upon breathing difficulties or irritation of the respiratory tract: Bring the person into fresh air and stay with him/her.

##### Skin contact

Remove contaminated clothing and shoes immediately. Ensure to wash exposed skin thoroughly with water and soap. Skin cleanser can be used. DO NOT use solvents or thinners.

If skin irritation occurs: Get medical advice/attention.

##### Eye contact

Upon irritation of the eye: Remove contact lenses and open eyes widely. Flush eyes with water or saline water (20-30 °C) for at least 5 minutes. Seek medical assistance and continue flushing during transport.

##### ▼ Ingestion

If the person is conscious, rinse the mouth with water and stay with the person. Never give the person anything to drink.

In case of malaise, seek medical advice immediately and bring the safety data sheet or label from the product. Do not induce vomiting, unless recommended by the doctor. Have the person lean forward with head down to avoid inhalation of or choking on vomited material.

##### Burns

Not applicable.

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

None known.

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

IF exposed or concerned:

Get immediate medical advice/attention.

##### Information to medics

Bring this safety data sheet or the label from this product.

### SECTION 5: Fire-fighting measures

#### 5.1. ▼ Extinguishing media

Suitable extinguishing media: Use class D extinguishing agents on dust, fines or molten metal.

Unsuitable extinguishing media: Water, foam, halogenated extinguishing agents.

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

Fire will result in dense smoke. Exposure to combustion products may harm your health. Closed containers, which are exposed to fire, should be cooled with water. Do not allow fire-extinguishing water to enter the sewage system and nearby surface waters.

If the product is exposed to high temperatures, e.g. in the event of fire, dangerous decomposition compounds are produced. These are:

Some metal oxides

#### 5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective clothing to prevent contact. Upon direct exposure contact the Poison Help Line on 1-800-222-1222 (24/7) in order to obtain further advice.

### SECTION 6: Accidental release measures

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

Conforms to OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200 / revised 2012)

Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration.

Avoid direct contact with spilled substances.

Evacuate surrounding areas.

Eliminate all ignition sources.

Ventilate the area.

Wear appropriate personal protective equipment (see section 8).

#### 6.2. Environmental precautions

Avoid discharge to lakes, streams, sewers, etc. In the event of leakage to the surroundings, contact local environmental authorities.

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

Collect spills carefully. Moist the material with water in order to prevent the formation and propagation of dust.

Wherever possible cleaning should be performed with normal cleaning agents. Avoid use of solvents.

Use spark-proof tools and explosion-proof equipment.

Avoid dust generation.

Ensure that waste and contaminated materials are collected and removed from the work area as soon as possible in a suitably labelled container.

#### 6.4. Reference to other sections

See section 13 "Disposal considerations" on handling of waste.

See section 8 "Exposure controls/personal protection" for protective measures.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces.

Avoid direct contact with the product.

Smoking, drinking and consumption of food is not allowed in the work area.

See section 8 "Exposure controls/personal protection" for information on personal protection.

Take precautionary measures against static discharges.

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

Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

Powder trickling out onto the floor or onto other containers must be prevented.

Avoid the suspension of dust in the air.

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

Use non-sparking tools.

##### Recommended storage material

Always store in containers of the same material as the original container.

##### Storage temperature

Store in tightly closed original container in a dry, cool and well-ventilated place.

Store in accordance with local regulations.

##### Incompatible materials

Oxidizing material

#### 7.3. ▼ Specific end use(s)

This product should only be used for applications quoted in section 1.2.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### Nickel

Long term exposure limit (OSHA Table Z-1) (mg/m<sup>3</sup>): 1

Long term exposure limit (ACGIH TLV) (mg/m<sup>3</sup>): elemental: 1.5 (Inhalable); insoluble inorganic compounds: 0.2 (Inhalable) / soluble inorganic compounds: 0.1 (Inhalable)

Long term exposure limit (NIOSH REL) (mg/m<sup>3</sup>): Potential occupational carcinogen; 0.015

##### Cobalt

Long term exposure limit (OSHA Table Z-1) (mg/m<sup>3</sup>): 0.1

Long term exposure limit (ACGIH TLV) (mg/m<sup>3</sup>): 0.02

Long term exposure limit (NIOSH REL) (mg/m<sup>3</sup>): 0.05

##### Molybdenum

Long term exposure limit (OSHA Table Z-1) (mg/m<sup>3</sup>): 5 (soluble compounds) / 15 (insoluble compounds - total dust)

Long term exposure limit (ACGIH TLV) (mg/m<sup>3</sup>): 0.5 (resp.)(soluble compounds) / 10 (Inhalable) / 3 (resp.)(insoluble)

Conforms to OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200 / revised 2012)

compounds)  
Long term exposure limit (NIOSH REL) (mg/m<sup>3</sup>): 5 (soluble compounds)

Chromium  
Long term exposure limit (OSHA Table Z-1) (mg/m<sup>3</sup>): 1 (metal and insol. salts)  
Long term exposure limit (ACGIH TLV) (mg/m<sup>3</sup>): 0.5 (metal, inhalable)  
Long term exposure limit (NIOSH REL) (mg/m<sup>3</sup>): 0.5

Part 1910 - Occupational Safety and Health Standards (29 CFR 1910.1000 TABLE Z-1 - Limits for Air Contaminants)

## 8.2. Exposure controls

Compliance with the given occupational exposure limits values should be controlled on a regular basis. Where necessary use lighting and electrical equipment designed for use in atmospheres where flammable vapours or dusts are present, and which can direct static electricity by grounding equipment.

### General recommendations

When transferring the materials, dust clouds should be kept at an absolute minimum. Handling should be slow and deliberate. The materials should be transferred from one container to another using a non-sparking, conductive metal scoop.

When mixing the material with other dry ingredients, frictional heat should be avoided. The best type of mixer for a dry mixing operation is one that contains no moving parts, but rather affects a tumbling action, such as a conical blender. Introduction of an inert atmosphere in the blender is highly recommended since dust clouds are generated. All equipment must be well grounded.

Smoking, drinking and consumption of food is not allowed in the work area.

### Exposure scenarios

There are no exposure scenarios implemented for this product.

### Exposure limits

Professional users are subjected to the legally set maximum concentrations for occupational exposure. See occupational hygiene limit values above.

### Appropriate technical measures

Do not recirculate outlet air that contain the substances.

### Hygiene measures

In between use of the product and at the end of the working day all exposed areas of the body must be washed thoroughly. Always wash hands, forearms and face.

### Measures to avoid environmental exposure

Keep damming materials near the workplace. If possible, collect spillage during work.

## 8.3. Individual protection measures, such as personal protective equipment

### Generally

Use only protective equipment with a recognized certification mark, e.g. the UL mark.

### Respiratory Equipment

Type	Class	Colour	Standards
SL	P3	White	EN149



### Skin protection

Recommended	Type/Category	Standards
Dedicated work clothing should be worn. Wear a protective suit in the event of prolonged periods of work with the product.	-	-
Safety shoes		EN ISO 20345



### Hand protection

Conforms to OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200 / revised 2012)

Material	Glove thickness (mm)	Breakthrough time (min.)	Standards
Butyl	0,3	> 480	EN374-2, EN374-3, EN388


  

Eye protection	
Type	Standards
Safety glasses with side shields.	EN166



## SECTION 9: Physical and chemical properties

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

#### Physical state

Powder

#### Colour

Gray

#### Odour

None

#### Odour threshold (ppm)

Testing not relevant or not possible due to the nature of the product.

#### pH

Not applicable - product is a solid

#### Density (g/cm<sup>3</sup>)

No information available as testing has not been completed.

#### Relative density

No information available as testing has not been completed.

#### ▼ Kinematic viscosity

Not applicable - product is a solid

#### Phase changes

##### Melting point (°F)

No information available as testing has not been completed.

##### Boiling point (°F)

No information available as testing has not been completed.

##### Vapour pressure

Not applicable - product is a solid

##### Vapour density

Does not apply to solids.

##### Decomposition temperature (°F)

No information available as testing has not been completed.

##### Evaporation rate (n-butylacetate = 100)

Not applicable - product is a solid

#### Data on fire and explosion hazards

##### Flash point (°F)

Not applicable - product is a solid

##### Flammability (°F)

Testing not relevant or not possible due to nature of the product.

##### Auto-ignition temperature (°F)

Testing not relevant or not possible due to nature of the product.

##### Explosion limits (% v/v)

Does not apply to solids.

#### Solubility

##### Solubility in water

Insoluble

##### n-octanol/water coefficient

No information available as testing has not been completed.

Conforms to OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200 / revised 2012)

## 9.2. Other information

### Solubility in fat (g/L)

No information available as testing has not been completed.

### VOC (g/L)

0

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No data available.

### 10.2. Chemical stability

The product is stable under the conditions, noted in section 7 "Handling and storage".

### 10.3. Possibility of hazardous reactions

None known.

### 10.4. Conditions to avoid

Avoid the suspension of dust in the air.

### 10.5. Incompatible materials

Oxidizing material

### 10.6. Hazardous decomposition products

The product is not degraded when used as specified in section 1.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

#### Acute toxicity

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

#### Skin corrosion/irritation

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

#### Serious eye damage/irritation

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

#### Respiratory sensitisation

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

#### Skin sensitisation

May cause an allergic skin reaction.

#### Germ cell mutagenicity

Suspected of causing genetic defects.

#### Carcinogenicity

May cause cancer.

#### Reproductive toxicity

May damage fertility.

#### STOT-single exposure

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

#### STOT-repeated exposure

Causes damage to organs through prolonged or repeated exposure.

#### Aspiration hazard

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

#### Long term effects

Carcinogenic effects: This product contains substances considered or proven to be carcinogenic. The carcinogenic effects may be triggered subsequent to exposure through inhalation, skin contact or ingestion.

#### Other information

Nickel has been classified by IARC as a group 2B carcinogen.

Cobalt has been classified by IARC as a group 2B / 2A (Cobalt metal with tungsten carbide) carcinogen.

Chromium has been classified by IARC as a group 1 carcinogen.

Exposure to metal dusts and oxides may cause metal fume fever. Metal fume fever is a temporary flu-like condition characterized by chills, fever, muscle aches and pains, nausea, and vomiting. Typically, the symptoms appear within a few hours after exposure and subside within 2-3 days with no permanent effects.

## SECTION 12: Ecological information

### 12.1. ▼ Toxicity

Conforms to OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200 / revised 2012)

Product/substance	Nickel
Test method:	
Species:	Algae
Compartment:	Marine water
Duration:	96 hours
Test:	EC50
Result:	2 ppm
Other information:	
Product/substance	Nickel
Test method:	
Species:	Algae, Lemna minor
Compartment:	Freshwater
Duration:	96 hours
Test:	EC50
Result:	450 µg/L
Other information:	
Product/substance	Nickel
Test method:	
Species:	Daphnia, Daphnia magna
Compartment:	Marine water
Duration:	48 hours
Test:	EC50
Result:	1000 µg/L
Other information:	
Product/substance	Nickel
Test method:	
Species:	Crustacean
Compartment:	Marine water
Duration:	48 hours
Test:	IC50
Result:	0.31 mg/L
Other information:	
Product/substance	Nickel
Test method:	
Species:	Fish
Compartment:	Freshwater
Duration:	96 hours
Test:	LC50
Result:	47.5 ng/L
Other information:	
Product/substance	Nickel
Test method:	
Species:	Algae
Compartment:	Marine water
Duration:	72 hours
Test:	NOEC
Result:	100 mg/L
Other information:	
Product/substance	Nickel
Test method:	
Species:	Fish, Cyprinus carpio
Compartment:	Freshwater
Duration:	28 days
Test:	NOEC
Result:	3.5 µg/L
Other information:	
Product/substance	Molybdenum
Test method:	
Species:	Daphnia, Daphnia magna
Compartment:	Freshwater
Duration:	48 hours



Conforms to OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200 / revised 2012)

Test: LC50  
Result: >200000 µg/L  
Other information:

Product/substance Molybdenum  
Test method:  
Species: Fish, Oncorhynchus mykiss  
Compartment: Freshwater  
Duration: 96 hours  
Test: LC50  
Result: 800 mg/L  
Other information:

Product/substance Molybdenum  
Test method:  
Species: Algae  
Compartment: Marine water  
Duration: 72 hours  
Test: NOEC  
Result: 500 mg/L  
Other information:

#### 12.2. Persistence and degradability

No data available.

#### 12.3. ▼ Bioaccumulative potential

Product/substance Cobalt  
Test method:  
Potential bioaccumulation: No data available.  
LogPow: No data available.  
BCF: 15600  
Other information:

#### 12.4. Mobility in soil

No data available.

#### 12.5. Results of PBT and vPvB assessment

This mixture/product does not contain any substances considered to meet the criteria classifying them as PBT and/or vPvB.

#### 12.6. Other adverse effects

None known.

### SECTION 13: Disposal considerations

#### RCRA Hazardous waste ("P" and "U" list) (40 CFR 261)

None of the components are listed

#### Specific labelling

Not applicable.

#### Contaminated packing

Packaging containing residues of the product must be disposed of similarly to the product.

### SECTION 14: Transport information

	14.1 UN / ID	14.2 UN proper shipping name	14.3 Hazard class(es)	14.4 PG*	14.5 Env**	Other information:
DOT	-	-	-	-	-	-
IMDG	-	-	-	-	-	-
IATA	-	-	-	-	-	-

\* Packing group

\*\* Environmental hazards

#### Additional information

Not dangerous goods according to DOT, IATA and IMDG.

#### 14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

No data available.

SECTION 15: Regulatory information

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

15.2. U.S. Federal regulations

TSCA

- Nickel is listed in the non-confidential portion
- Cobalt is listed in the non-confidential portion
- Molybdenum is listed in the non-confidential portion
- Titanium is listed in the non-confidential portion
- Chromium is listed in the non-confidential portion

Clean Air Act

- Nickel is regulated as a hazardous air pollutant (HAPS)
- Cobalt is regulated as a hazardous air pollutant (HAPS)
- Chromium is regulated as a hazardous air pollutant (HAPS)

EPCRA Section 302

- None of the components are listed

EPCRA Section 304

- None of the components are listed

EPCRA section 313

- Nickel is listed
- Cobalt is listed
- Chromium is listed

CERCLA

- Nickel is regulated with a Reportable Quantity (RQ) of: 100 pounds
- Chromium is regulated with a Reportable Quantity (RQ) of: 5000 pounds

State regulations

California / Prop. 65

- Nickel is known to cause: Cancer
- 
- Cobalt is known to cause: Cancer
- 

Massachusetts / Right To Know Act

- Nickel is listed
- Cobalt is listed
- Molybdenum is listed
- Chromium is listed

New Jersey / Right To Know Act

- Nickel / Substance number: 1341
- Nickel is on the Special Health Hazard Substance List
- 
- Cobalt / Substance number: 0520
- Cobalt is on the Special Health Hazard Substance List
- 
- Molybdenum / Substance number: 1309
- 
- Titanium / Substance number: 1860
- Titanium is on the Special Health Hazard Substance List
- 
- Chromium / Substance number: 0432
- Chromium is on the Special Health Hazard Substance List
- 

New York / Right To Know Act

- Nickel is listed
- Nickel is regulated with a Reportable Quantity (RQ) of: 100 pounds
- Nickel is regulated with a Treshold Reporting Quantity (TRQ) of: 0 pounds
- 
- Cobalt is listed
- Cobalt is regulated with a Treshold Reporting Quantity (TRQ) of: 10 pounds

Conforms to OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200 / revised 2012)

—  
Molybdenum is listed  
Molybdenum is regulated with a Treshold Reporting Quantity (TRQ) of: 100 pounds

—  
Titanium is listed  
Titanium is regulated with a Treshold Reporting Quantity (TRQ) of: 10 pounds

—  
Chromium is listed  
Chromium is regulated with a Reportable Quantity (RQ) of: 5000\* pounds  
Chromium is regulated with a Treshold Reporting Quantity (TRQ) of: 0 pounds

—  
**Pennsylvania / Right To Know Act**

Nickel is listed  
Nickel is a special hazardous substance (S)  
Nickel is hazardous to the environment (E)

—  
Cobalt is listed  
Cobalt is hazardous to the environment (E)

—  
Molybdenum is listed

—  
Chromium is listed  
Chromium is a special hazardous substance (S)  
Chromium is hazardous to the environment (E)

—  
**15.4. Restrictions for application**

Restricted to professional users.

Pregnant women and women breastfeeding must not be exposed to this product. The risk, and possible technical precautions or design of the workplace needed to eliminate exposure, must be considered.

**15.5. Demands for specific education**

No specific requirements.

**15.6. Additional information**

Not applicable.

**15.7. Chemical safety assessment**

No

**15.8. Sources**

OSHA Hazard Communication Standard (29 CFR 1910.1200)

**SECTION 16: Other information**

**Full text of H-phrases as mentioned in section 3**

H317, May cause an allergic skin reaction.  
H334, May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H341, Suspected of causing genetic defects.  
H350, May cause cancer.  
H351, Suspected of causing cancer.  
H360F, May damage fertility.  
H372, Causes damage to organs through prolonged or repeated exposure.

**The full text of identified uses as mentioned in section 1**

None known.

**Abbreviations and acronyms**

ACGIH = American Conference of Governmental Industrial Hygienists  
ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway  
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road  
ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
CAS = Chemical Abstracts Service  
CERCLA = Comprehensive Environmental Response Compensation and Liability Act  
EINECS = European Inventory of Existing Commercial chemical Substances  
EPCRA = Emergency Planning and Community Right-To-Know Act  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
HCIS = Hazardous Chemical Information System  
IARC = International Agency for Research on Cancer

Conforms to OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200 / revised 2012)

IATA = International Air Transport Association  
IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient  
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
NFPA = National Fire Protection Association  
NIOSH = National Institute for Occupational Safety and Health  
OECD = Organisation for Economic Co-operation and Development  
OSHA = Occupational Safety and Health Administration  
PBT = Persistent, Bioaccumulative and Toxic  
RCRA = Resource Conservation and Recovery Act  
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail  
RRN = REACH Registration Number  
SARA = Superfund Amendments and Reauthorization Act  
SCL = A specific concentration limit.  
STEL = Short-term exposure limits  
STOT-RE = Specific Target Organ Toxicity - Repeated Exposure  
STOT-SE = Specific Target Organ Toxicity - Single Exposure  
TSCA = The Toxic Substances Control Act  
TWA = Time weighted average  
UN = United Nations  
UVBC = Unknown or variable composition, complex reaction products or of biological materials  
VOC = Volatile Organic Compound  
vPvB = Very Persistent and Very Bioaccumulative

▼ **Additional information**

The classification of the mixture in regard of health hazards is in accordance with the calculation methods given by HCS (29 CFR 1910.1200).

▼ **The safety data sheet is validated by**  
EcoOnline

**Other**

A change (in proportion to the last essential change (first cipher in SDS version, see section 1)) is marked with a blue triangle.

The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.

It is recommended to hand over this safety data sheet to the actual user of the product. Information in this safety data sheet cannot be used as a product specification.

Country-language: US-en