

## SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

### Schiff reagent

Creation date	12th August 2019	Version	3.0
Revision date	26th June 2023		

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

##### 1.1. Product identifier

Schiff reagent  
Substance / mixture  
mixture  
UFI  
UYG7-U25F-E00Y-56YP

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

###### Mixture's intended use

Chemical production, analytical chemistry, laboratory synthesis, industrial applications.

###### Mixture uses advised against

The product should not be used in ways other than those referred in Section 1.

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

###### Supplier

Name or trade name	Ing. Petr Švec - PENTA s.r.o.
Address	Radiová 1122/1, Praha 10, 102 00 Czech Republic
Identification number (CRN)	02096013
VAT Reg No	CZ02096013
Phone	+420 226 060 681
E-mail	info@pentachemicals.eu
Web address	www.pentachemicals.eu

###### Competent person responsible for the safety data sheet

Name	Ing. Petr Švec - PENTA s.r.o.
E-mail	info@pentachemicals.eu

##### 1.4. Emergency telephone number

European emergency number: 112 112

#### SECTION 2: Hazards identification

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

###### Classification of the mixture in accordance with Regulation (EC) No 1272/2008

The mixture is classified as dangerous.

Met. Corr. 1, H290  
Eye Dam. 1, H318  
Repr. 1B, H360D  
Aquatic Chronic 3, H412

Full text of all classifications and hazard statements is given in the section 16.

###### Most serious adverse physico-chemical effects

May be corrosive to metals.

###### Most serious adverse effects on human health and the environment

May damage the unborn child. Causes serious eye damage. Harmful to aquatic life with long lasting effects.

##### 2.2. Label elements

###### Hazard pictogram



###### Signal word

Danger

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#### Hazardous substances

dimethyl formamide

#### Hazard statements

H290	May be corrosive to metals.
H318	Causes serious eye damage.
H360D	May damage the unborn child.
H412	Harmful to aquatic life with long lasting effects.

#### Precautionary statements

P201	Obtain special instructions before use.
P280	Wear protective gloves.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P310	Immediately call a doctor.

#### Supplemental information

Restricted to professional users.

#### 2.3. Other hazards

The mixture does not contain substances with endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605. Mixture does not contain any substance meet the criteria for PBT or vPvB in accordance with Annex XIII of Regulation (EC) No. 1907/2006 (REACH) as amended.

### SECTION 3: Composition/information on ingredients

#### 3.2. Mixtures

Mixture contains these hazardous substances and substances with the highest permissible concentration in the working environment

Identification numbers	Substance name	Content in % weight	Classification according to Regulation (EC) No 1272/2008	Note
Index: 616-001-00-X CAS: 68-12-2 EC: 200-679-5 Registration number: 01-2119475605-32-xxxx	dimethyl formamide	4-5	Flam. Liq. 3, H226 Acute Tox. 4, H312+H332 Eye Irrit. 2, H319 Repr. 1B, H360D	2, 3, 4
Index: 016-063-00-2 CAS: 7681-57-4 EC: 231-673-0 Registration number: 01-2119531326-45-xxxx	sodium metabisulphite	1,9-2,9	Acute Tox. 4, H302 Eye Dam. 1, H318 EUH031	
Index: 017-002-01-X CAS: 7647-01-0 EC: 231-595-7 Registration number: 01-2119484862-27-0000	hydrochloric acid ... %	2	Met. Corr. 1, H290 Skin Corr. 1B, H314 Eye Dam. 1, H318 STOT SE 3, H335 Specific concentration limit: Skin Corr. 1A, H314: C ≥ 25 % STOT SE 3, H335: C ≥ 10 % Eye Dam. 1, H318: C ≥ 1 % Met. Corr. 1, H290: C ≥ 0.1 % Skin Corr. 1B, H314: 10 % ≤ C < 25 %	1, 2
CAS: 58969-01-0 EC: 211-189-6	Fuchsin basic	0,2	Acute Tox. 4, H302 Carc. 2, H351	

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#### Notes

- Note B: Some substances (acids, bases, etc.) are placed on the market in aqueous solutions at various concentrations and, therefore, these solutions require different classification and labelling since the hazards vary at different concentrations. In Part 3 entries with Note B have a general designation of the following type: 'nitric acid ... %'. In this case the supplier must state the percentage concentration of the solution on the label. Unless otherwise stated, it is assumed that the percentage concentration is calculated on a weight/weight basis.
- A substance for which exposure limits are set.
- Substance of very high concern - SVHC.
- The use of the substance is restricted by Annex XVII of REACH Regulation

Full text of all classifications and hazard statements is given in the section 16.

#### SECTION 4: First aid measures

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

Take care of your own safety. If any health problems are manifested or if in doubt, inform a doctor and show him information from this safety data sheet. If unconscious, put the person in the stabilized (recovery) position on his side with his head slightly bent backwards and make sure that airways are free; never induce vomiting. If the person vomits by himself, make sure that the vomit is not inhaled. In life threatening conditions first of all provide resuscitation of the affected person and ensure medical assistance. Respiratory arrest - provide artificial respiration immediately. Cardiac arrest - provide indirect cardiac massage immediately.

##### If inhaled

Terminate the exposure immediately; move the affected person to fresh air. Protect the person against growing cold. Provide medical treatment if irritation, dyspnoea or other symptoms persist.

##### If on skin

Remove contaminated clothes. Wash the affected area with plenty of water, lukewarm if possible. Soap, soap solution or shampoo should be used if there is no skin injury. Provide medical treatment if skin irritation persists.

##### If in eyes

Rinse eyes immediately with a flow of running water, open the eyelids (also using force if needed); remove contact lenses immediately if worn by the affected person. No neutralization should be performed in any case! Rinsing should be continued for 10-30 minutes from the inner to the outer eye corner to make sure that the other eye is not involved. Depending on the situation, call medical rescue service or ensure medical treatment as promptly as possible. Everyone must be referred for treatment even if affected only a little.

##### If swallowed

Rinse out the mouth with clean water. Provide medical treatment. For persons with no symptoms, call the Toxicological Information Centre to decide about the need of medical treatment; provide information about the substances or composition of the product from the original packaging or the Safety Data Sheet of the product.

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

##### If inhaled

Inhaling vapours can cause corrosion of the breathing system.

##### If on skin

Not expected.

##### If in eyes

Causes serious eye damage.

##### If swallowed

Corrosion of the digestion system can occur.

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

Symptomatic treatment.

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#### SECTION 5: Firefighting measures

##### 5.1. Extinguishing media

###### Suitable extinguishing media

Alcohol-resistant foam, carbon dioxide, powder, water spray jet, water mist.

###### Unsuitable extinguishing media

Water - full jet.

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

In the event of fire, carbon monoxide, carbon dioxide and other toxic gases may arise. Inhalation of hazardous degradation (pyrolysis) products may cause serious health damage.

##### 5.3. Advice for firefighters

Self-Contained Breathing Apparatus (SCBA) with a chemical protection suit only where personal (close) contact is likely. Use a self-contained breathing apparatus and full-body protective clothing. Do not allow run-off of contaminated fire extinguishing material to enter drains or surface and ground water.

#### SECTION 6: Accidental release measures

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

May be corrosive to metals. Use personal protective equipment for work. Follow the instructions in the Sections 7 and 8. Prevent contact with skin and eyes.

##### 6.2. Environmental precautions

Prevent contamination of the soil and entering surface or ground water.

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

Spilled product should be covered with suitable (non-flammable) absorbing material (sand, diatomaceous earth, earth and other suitable absorption materials); to be contained in well closed containers and removed as per the Section 13. In the event of leakage of the substantial amount of the product, inform fire brigade and other competent bodies. After removal of the product, wash the contaminated site with plenty of water. Do not use solvents. Absorb spillage to prevent material damage.

##### 6.4. Reference to other sections

See the Section 7, 8 and 13.

#### SECTION 7: Handling and storage

##### 7.1. Precautions for safe handling

Prevent formation of gases and vapours in concentrations exceeding the occupational exposure limits. Prevent contact with skin and eyes. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as per Section 8. Observe valid legal regulations on safety and health protection. Avoid release to the environment.

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

Store in tightly closed containers in cold, dry and well ventilated areas designated for this purpose. Do not expose to sunlight. Keep only in original packaging. Store locked up. Recommended storage temperature 15-25°C.

Storage class

12 - Other non-combustible liquids

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

not available

#### SECTION 8: Exposure controls/personal protection

##### 8.1. Control parameters

The mixture contains substances for which occupational exposure limits are set.

##### European Union

##### Commission Directive 2000/39/EC

Substance name (component)	Type	Value	Note
hydrochloric acid ... % (CAS: 7647-01-0)	OEL 8 hours	8 mg/m <sup>3</sup>	
	OEL 8 hours	5 ppm	
	OEL 15 minutes	15 mg/m <sup>3</sup>	

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#### European Union

#### Commission Directive 2000/39/EC

Substance name (component)	Type	Value	Note
hydrochloric acid ... % (CAS: 7647-01-0)	OEL 15 minutes	10 ppm	

#### European Union

#### Commission Directive 2009/161/EU

Substance name (component)	Type	Value	Note
dimethyl formamide (CAS: 68-12-2)	OEL 8 hours	15 mg/m <sup>3</sup>	Skin
	OEL 8 hours	5 ppm	
	OEL 15 minutes	30 mg/m <sup>3</sup>	
	OEL 15 minutes	10 ppm	

#### DNEL

dimethyl formamide					
Workers / consumers	Route of exposure	Value	Effect	Value determination	Source
Workers	Dermal	3.31 mg/kg	Chronic effects systemic		Brenntag
Workers	Inhalation	15 mg/m <sup>3</sup>	Chronic effects systemic		Brenntag

sodium metabisulphite					
Workers / consumers	Route of exposure	Value	Effect	Value determination	Source
Workers	Inhalation	225 mg/m <sup>3</sup>	Chronic effects systemic		
Consumers	Inhalation	66 mg/m <sup>3</sup>	Chronic effects systemic		
Consumers	Oral	8.6 mg/kg bw/day	Chronic effects systemic		

#### PNEC

dimethyl formamide			
Route of exposure	Value	Value determination	Source
Marine water	3 mg/l		Brenntag
Drinking water	30 mg/l		Brenntag
Soil (agricultural)	16.24 mg/l		Brenntag
Freshwater sediment	25.05 mg/l		Brenntag

sodium metabisulphite			
Route of exposure	Value	Value determination	Source
Marine water	0.1 mg/l		
Drinking water	1.0 mg/l		
Microorganisms in sewage treatment	75.4 mg/l		

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#### 8.2. Exposure controls

Follow the usual measures intended for health protection at work and especially for good ventilation. This can be achieved only by local suction or efficient general ventilation. Do not eat, drink and smoke during work. Wash your hands thoroughly with water and soap after work and before breaks for a meal and rest.

##### Eye/face protection

Protective goggles or face shield (based on the nature of the work performed).

##### Skin protection

Hand protection: Protective gloves resistant to the product (butyl rubber, nitrile rubber). When choosing appropriate thickness, material and permeability of the gloves, observe recommendations of their particular manufacturer. Observe other recommendations of the manufacturer. Other protection: protective workwear. Contaminated skin should be washed thoroughly.

##### Respiratory protection

Halfmask with a filter against organic vapours or a self-contained breathing apparatus as appropriate if exposure limit values of substances are exceeded or in a poorly ventilated environment.

##### Thermal hazard

Not available.

##### Environmental exposure controls

Observe usual measures for protection of the environment, see Section 6.2.

## SECTION 9: Physical and chemical properties

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

Physical state	liquid
Colour	colorless to yellowish
Odour	data not available
Melting point/freezing point	data not available
Boiling point or initial boiling point and boiling range	data not available
Flammability	data not available
Lower and upper explosion limit	data not available
Flash point	data not available
Auto-ignition temperature	data not available
Decomposition temperature	data not available
pH	data not available
Kinematic viscosity	data not available
Solubility in water	data not available
Solubility in fats	data not available
Partition coefficient n-octanol/water (log value)	data not available
Vapour pressure	data not available
Density and/or relative density	
Density	data not available
Relative density	data not available
Relative vapour density	data not available
Particle characteristics	data not available

### 9.2. Other information

Evaporation rate	data not available
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## SECTION 10: Stability and reactivity

### 10.1. Reactivity

not available

### 10.2. Chemical stability

The product is stable under normal conditions.

### 10.3. Possibility of hazardous reactions

Unknown.

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#### 10.4. Conditions to avoid

The product is stable and no degradation occurs under normal use. Protect against flames, sparks, overheating and against frost.

#### 10.5. Incompatible materials

Protect against strong acids, bases and oxidizing agents. May be corrosive to metals.

#### 10.6. Hazardous decomposition products

Not developed under normal uses. Dangerous outcomes such as carbon monoxide and carbon dioxide are formed at high temperature and in fire.

### SECTION 11: Toxicological information

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

Inhalation of solvent vapors above values exceeding exposure limits for working environment may result in acute inhalation poisoning, depending on the level of concentration and exposure time. No toxicological data is available for the mixture.

#### Acute toxicity

Based on available data the classification criteria are not met.

dimethyl formamide					
Route of exposure	Parameter	Value	Exposure time	Species	Sex
Oral	LD <sub>50</sub>	3040 mg/kg		Rat (Rattus norvegicus)	
Dermal	LD <sub>50</sub>	1500 mg/kg		Rabbit	
Oral	NOAEL	238 mg/kg	28 days	Rat	

hydrochloric acid ... %					
Route of exposure	Parameter	Value	Exposure time	Species	Sex
Dermal	LD <sub>50</sub>	>5010 mg/kg		Rabbit	
Inhalation (vapor)	LC <sub>50</sub>	4701 ppm	30 minutes		

sodium metabisulphite					
Route of exposure	Parameter	Value	Exposure time	Species	Sex
Oral	LD <sub>50</sub>	1540 mg/kg		Rat (Rattus norvegicus)	
Dermal	LD <sub>50</sub>	>2000 mg/kg		Rabbit	
Inhalation (aerosols)	LC <sub>50</sub>	>5.5 mg/l	4 hours	Rat (Rattus norvegicus)	

#### Skin corrosion/irritation

Based on available data the classification criteria are not met.

#### Serious eye damage/irritation

Causes serious eye damage.

#### Respiratory or skin sensitisation

Based on available data the classification criteria are not met.

#### Germ cell mutagenicity

Based on available data the classification criteria are not met.

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#### Carcinogenicity

Based on available data the classification criteria are not met.

#### Reproductive toxicity

May damage the unborn child.

#### Toxicity for specific target organ - single exposure

Based on available data the classification criteria are not met.

#### Toxicity for specific target organ - repeated exposure

Based on available data the classification criteria are not met.

#### Aspiration hazard

Based on available data the classification criteria are not met.

#### 11.2. Information on other hazards

The mixture does not contain substances with endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

### SECTION 12: Ecological information

#### 12.1. Toxicity

Harmful to aquatic life with long lasting effects.

##### Acute toxicity

dimethyl formamide				
Parameter	Value	Exposure time	Species	Environment
LC <sub>50</sub>	7100 mg/l	96 hours	Fish (Lepomis macrochirus)	
EC <sub>50</sub>	13100 mg/l	48 hours	Daphnia (Daphnia magna)	
EC <sub>50</sub>	>1000 mg/kg	72 hours	Algae (Scenedesmus subspicatus)	

Fuchsin basic				
Parameter	Value	Exposure time	Species	Environment
LC <sub>50</sub>	4.3 mg/l	48 hours	Fish (Oryzias latipes)	

hydrochloric acid ... %				
Parameter	Value	Exposure time	Species	Environment
LC <sub>50</sub>	20.5 (pH 3.25) mg/l	96 hours	Fish (Oncorhynchus mykiss)	
EC <sub>50</sub>	0.45 mg/l	48 hours	Daphnia (Daphnia magna)	

sodium metabisulphite				
Parameter	Value	Exposure time	Species	Environment
LC <sub>50</sub>	150-220 mg/l	96 hours	Fish (Oncorhynchus mykiss)	



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sodium metabisulphite				
Parameter	Value	Exposure time	Species	Environment
EC <sub>50</sub>	89 mg/l	48 hours	Daphnia (Daphnia magna)	
IC <sub>50</sub>	48 mg/l	72 hours	Algae (Desmodesmus subspicatus)	

#### 12.2. Persistence and degradability

not available

##### Biodegradability

Fuchsin basic				
Parameter	Value	Exposure time	Environment	Result
				Easily biodegradable

#### 12.3. Bioaccumulative potential

Not available.

#### 12.4. Mobility in soil

Not available.

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

Product does not contain any substance meeting the criteria for PBT or vPvB in accordance with the Annex XIII of Regulation (EC) No 1907/2006 (REACH) as amended.

#### 12.6. Endocrine disrupting properties

The mixture does not contain substances with endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

#### 12.7. Other adverse effects

Not available.

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Hazard of environmental contamination; dispose of the waste in accordance with the local and/or national regulations. Proceed in accordance with valid regulations on waste disposal. Any unused product and contaminated packaging should be put in labelled containers for waste collection and submitted for disposal to a person authorised for waste removal (a specialized company) that is entitled for such activity. Do not empty unused product in drainage systems. The product must not be disposed of with municipal waste. Empty containers may be used at waste incinerators to produce energy or deposited in a dump with appropriate classification. Perfectly cleaned containers can be submitted for recycling.

##### Waste management legislation

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste, as amended. Decision 2000/532/EC establishing a list of wastes, as amended.

### SECTION 14: Transport information

#### 14.1. UN number or ID number

not subject to transport regulations

#### 14.2. UN proper shipping name

not relevant

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

not relevant

#### 14.4. Packing group

not relevant

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#### 14.5. Environmental hazards

not relevant

#### 14.6. Special precautions for user

Reference in the Sections 4 to 8.

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

not relevant

### SECTION 15: Regulatory information

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

Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18th December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing the European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No. 793/93 and Commission Regulation (EC) No. 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, as amended. REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. Commission Regulation (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

#### Restrictions pursuant to Annex XVII of Regulation (EC) No. 1907/2006 (REACH), as amended

dimethyl formamide

Restriction	Conditions of restriction
30	<p>Without prejudice to the other parts of this Annex the following shall apply to entries 28 to 30:</p> <ol style="list-style-type: none"> <li>Shall not be placed on the market, or used, <ul style="list-style-type: none"> <li>as substances,</li> <li>as constituents of other substances, or,</li> <li>in mixtures, for supply to the general public when the individual concentration in the substance or mixture is equal to or greater than: <ul style="list-style-type: none"> <li>either the relevant specific concentration limit specified in Part 3 of Annex VI to Regulation (EC) No 1272/2008, or,</li> <li>the relevant generic concentration limit specified in Part 3 of Annex I of Regulation (EC) No 1272/2008.</li> </ul> </li> </ul> </li> </ol> <p>Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of substances and mixtures, suppliers shall ensure before the placing on the market that the packaging of such substances and mixtures is marked visibly, legibly and indelibly as follows:</p> <p>"Restricted to professional users".</p> <ol style="list-style-type: none"> <li>By way of derogation, paragraph 1 shall not apply to: <ol style="list-style-type: none"> <li>medicinal or veterinary products as defined by Directive 2001/82/EC and Directive 2001/83/EC;</li> <li>cosmetic products as defined by Directive 76/768/EEC;</li> <li>the following fuels and oil products: <ul style="list-style-type: none"> <li>motor fuels which are covered by Directive 98/70/EC,</li> <li>mineral oil products intended for use as fuel in mobile or fixed combustion plants,</li> <li>fuels sold in closed systems (e.g. liquid gas bottles);</li> </ul> </li> <li>artists' paints covered by Regulation (EC) No 1272/2008;</li> <li>the substances listed in Appendix 11, column 1, for the applications or uses listed in Appendix 11, column 2. Where a date is specified in column 2 of Appendix 11, the derogation shall apply until the said date.</li> <li>devices covered by Regulation (EU) 2017/745.</li> </ol> </li> </ol>

#### 15.2. Chemical safety assessment

A chemical safety assessment has not been carried out (mixture).

### SECTION 16: Other information

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#### A list of standard risk phrases used in the safety data sheet

H226	Flammable liquid and vapour.
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
H360D	May damage the unborn child.
H412	Harmful to aquatic life with long lasting effects.
H312+H332	Harmful in contact with skin or if inhaled.

#### Guidelines for safe handling used in the safety data sheet

P201	Obtain special instructions before use.
P280	Wear protective gloves.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P310	Immediately call a doctor.

#### A list of additional standard phrases used in the safety data sheet

EUH031	Contact with acids liberates toxic gas.
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#### Other important information about human health protection

The product must not be - unless specifically approved by the manufacturer/importer - used for purposes other than as per the Section 1. The user is responsible for adherence to all related health protection regulations.

#### Key to abbreviations and acronyms used in the safety data sheet

ADR	European agreement concerning the international carriage of dangerous goods by road
BCF	Bioconcentration Factor
CAS	Chemical Abstracts Service
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substance and mixtures
EC	Identification code for each substance listed in EINECS
EC <sub>50</sub>	Concentration of a substance when it is affected 50% of the population
EINECS	European Inventory of Existing Commercial Chemical Substances
EmS	Emergency plan
EU	European Union
EuPCS	European Product Categorisation System
IATA	International Air Transport Association
IBC	International Code For The Construction And Equipment of Ships Carrying Dangerous Chemicals
IC <sub>50</sub>	Concentration causing 50% blockade
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
INCI	International Nomenclature of Cosmetic Ingredients
ISO	International Organization for Standardization
IUPAC	International Union of Pure and Applied Chemistry
LC <sub>50</sub>	Lethal concentration of a substance in which it can be expected death of 50% of the population
LD <sub>50</sub>	Lethal dose of a substance in which it can be expected death of 50% of the population
log K <sub>ow</sub>	Octanol-water partition coefficient
NOAEL	No observed adverse effect level

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OEL	Occupational Exposure Limits
PBT	Persistent, Bioaccumulative and Toxic
ppm	Parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Agreement on the transport of dangerous goods by rail
UN	Four-figure identification number of the substance or article taken from the UN Model Regulations
UVCB	Substances of unknown or variable composition, complex reaction products or biological materials
VOC	Volatile organic compounds
vPvB	Very Persistent and very Bioaccumulative
Acute Tox.	Acute toxicity
Aquatic Chronic	Hazardous to the aquatic environment (chronic)
Carc.	Carcinogenicity
Eye Dam.	Serious eye damage
Flam. Liq.	Flammable liquid
Met. Corr.	Corrosive to metals
Repr.	Reproductive toxicity
Skin Corr.	Skin corrosion
STOT SE	Specific target organ toxicity - single exposure

#### Training guidelines

Inform the personnel about the recommended ways of use, mandatory protective equipment, first aid and prohibited ways of handling the product.

#### Recommended restrictions of use

not available

#### Information about data sources used to compile the Safety Data Sheet

REGULATION (EC) No. 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL (REACH) as amended.  
REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. Data from the manufacturer of the substance / mixture, if available - information from registration dossiers.

#### The changes (which information has been added, deleted or modified)

The version 3.0 replaces the SDS version from 05 December 2022. Changes were made in sections 1, 2, 15 and 16.

#### More information

Classification procedure - calculation method.

#### Statement

The safety data sheet provides information aimed at ensuring safety and health protection at work and environmental protection. The provided information corresponds to the current status of knowledge and experience and complies with valid legal regulations. The information should not be understood as guaranteeing the suitability and usability of the product for a particular application.