

Product name: SURFYNOL® 104

# SAFETY DATA SHEET

Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567

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

### 1.1 Product identifier

**Product name:**  
SURFYNOL® 104

**Chemical name:**  
Acetylene diol

#### Additional identification

**Chemical name:** 2,4,7,9-Tetramethyldec-5-yne-4,7-diol  
**Chemical formula:** C<sub>14</sub>H<sub>26</sub>O<sub>2</sub>  
**INDEX No.** -  
**CAS-No.** 126-86-3  
**EC No.** 204-809-1  
**REACH Registration No.:** 01-2119954390-39

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

**Identified uses:** Industrial use

**Uses advised against:** None known.

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

**Company Name** : Evonik Operations GmbH  
SM-PT-PS Marl  
45764 Marl  
Germany

**Telephone** : +49 2365 49 9272

**E-mail** : MSDSInfo-COHP@evonik.com

### 1.4 Emergency telephone number:

**24-Hour Health Emergency** : +49 2365 49 2232

National Poison Information Service (NPIS)  
England, Scotland and Wales: NHS: 111

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

The product has been classified according to the legislation in force.

**Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567**

**Product name: SURFYNOL® 104**
**Health Hazards**

Serious eye damage

Category 1

H318: Causes serious eye damage.

Skin sensitizer

Category 1B

H317: May cause an allergic skin reaction.

**Environmental Hazards**

Chronic hazards to the aquatic environment

Category 3

H412: Harmful to aquatic life with long lasting effects.

**2.2 Label Elements**

**Signal Words:**

Danger

**Hazard Statement(s):**

H318: Causes serious eye damage.

H317: May cause an allergic skin reaction.

H412: Harmful to aquatic life with long lasting effects.

**Precautionary Statements**
**Prevention:**

P261: Avoid breathing dust/fume/gas/mist/vapors/spray.

P273: Avoid release to the environment.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

**Response:**

P302+P352: IF ON SKIN: Wash with plenty of soap and water.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310: Immediately call a POISON CENTER or doctor/ physician.

**2.3 Other hazards**

None known.

**SECTION 3: Composition/information on ingredients**
**Chemical name:**

Acetylene diol

**3.1 Substances**
**Chemical name:**

2,4,7,9-Tetramethyldec-5-yne-4,7-diol

**INDEX No.:**
**CAS-No.:**

126-86-3

**EC No.:**

204-809-1

**REACH Registration No.:**

01-2119954390-39

Chemical name	Concentration	CAS-No.	EC No.	UK-REACH Registration No.	REACH Registration No.	M-Factor:	Notes
2,4,7,9-Tetramethyldec-5-yne-4,7-diol	>99.9%	126-86-3	204-809-1	UK-01-982540637-0-8	01-211995439-0-39	No data available.	

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\* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

# This substance has workplace exposure limit(s).

## This substance is listed as SVHC.

**Classification**

Chemical name	Classification	Notes
2,4,7,9-Tetramethyldec-5-yne-4,7-diol	Classification: Eye Dam.: 1: H318; Skin Sens.: 1B: H317; Aquatic Chronic: 3: H412;  Supplemental label information: None known.	None.

**SECTION 4: First aid measures**
**4.1 Description of first aid measures**

<b>General information:</b>	Remove soiled or soaked clothing immediately
<b>Inhalation:</b>	fresh air supply, consult a doctor if feeling unwell.
<b>Skin Contact:</b>	In case of contact with skin wash off with soap and water. In case of discomfort: Supply with medical care.
<b>Eye contact:</b>	In case of contact with eyes rinse thoroughly with plenty of water and seek medical advice
<b>Ingestion:</b>	Thoroughly clean the mouth with water In case of discomfort: Supply with medical care.
<b>Personal Protection for First-aid Responders:</b>	No data available.

**4.2 Most important symptoms and effects, both acute and delayed**

<b>Symptoms:</b>	Risk of serious damage to eyes.
<b>Hazards:</b>	No data available.

**4.3 Indication of immediate medical attention and special treatment needed**

<b>Treatment:</b>	Treat symptomatically.
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**SECTION 5: Firefighting measures**
**5.1 Extinguishing media**

**Suitable extinguishing media:** foam, carbon dioxide, dry powder, water spray.

**Unsuitable extinguishing media:** High volume water jet.

**5.2 Special hazards arising from the substance or mixture:**

In the event of fire the following can be released: - carbon dioxide, carbon monoxide Aldehydes. Under certain conditions of combustion traces of other toxic substances cannot be excluded

**5.3 Advice for firefighters**

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<b>Special fire fighting procedures:</b>	Keep away from sources of ignition. Take action to prevent static discharges. Dust may form explosive mixture with air. Cool endangered containers by water spray
<b>Special protective equipment for fire-fighters:</b>	Do not inhale explosion and/or combustion gases. Use self-contained breathing apparatus and wear protective suit

<b>SECTION 6: Accidental release measures</b>
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<b>6.1 Personal precautions, protective equipment and emergency procedures:</b>	Use personal protective equipment. Avoid dust formation.
<b>6.1.1 For non-emergency personnel:</b>	No data available.
<b>6.1.2 For emergency responders:</b>	No data available.
<b>6.2 Environmental Precautions:</b>	Do not allow to enter drains or waterways Prevent product from getting into subsoil/soil.
<b>6.3 Methods and material for containment and cleaning up:</b>	Use mechanical handling equipment. Dispose of absorbed material in accordance with the regulations.
<b>6.4 Reference to other sections:</b>	For further information on exposure monitoring and disposal see sections 8 and 13.

<b>SECTION 7: Handling and storage</b>
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<b>7.1 Precautions for safe handling</b>	
<b>Technical measures:</b>	No data available.
<b>Local/Total ventilation:</b>	No data available.
<b>Safe handling advice:</b>	Provide good ventilation of working area (local exhaust ventilation if necessary). Avoid the formation and deposition of dust. Do not inhale dust/fumes/aerosols. Avoid contact with skin and eyes.
<b>Contact avoidance measures:</b>	No data available.
<b>7.2 Conditions for safe storage, including any incompatibilities</b>	
<b>Safe storage conditions:</b>	Keep container tightly closed in a cool, well-ventilated place. Do not store with acids or alkalies Do not store together with oxidizing agents.
<b>Safe packaging materials:</b>	No data available.
<b>7.3 Specific end use(s):</b>	No further recommendations.

<b>SECTION 8: Exposure controls/personal protection</b>
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<b>8.1 Control Parameters</b>	
<b>Occupational Exposure Limits</b>	
None of the components have assigned exposure limits.	

**Product name: SURFYNOL® 104**
**Biological Limit Values**

No biological exposure limits noted for the ingredient(s).

**DNEL-Values**

Remarks: DNEL-Values

Critical component	Type	Route of Exposure	Health Warnings	Remarks
2,4,7,9-Tetramethyldec-5-yne-4,7-diol	Workers	Dermal	Systemic, short-term; 1.5 mg/kg	Repeated dose toxicity
	General population	Dermal	Systemic, short-term; 0.75 mg/kg	Repeated dose toxicity
	General population	Inhalation	Systemic, long-term; 0.43 mg/m <sup>3</sup>	Repeated dose toxicity
	Workers	Dermal	Systemic, long-term; 0.5 mg/kg	Repeated dose toxicity
	General population	Oral	Systemic, short-term; 0.75 mg/kg	Repeated dose toxicity
	General population	Inhalation	Systemic, short-term; 1.29 mg/m <sup>3</sup>	Repeated dose toxicity
	Workers	Inhalation	Systemic, short-term; 5.28 mg/m <sup>3</sup>	Repeated dose toxicity
	General population	Oral	Systemic, long-term; 0.25 mg/kg	Repeated dose toxicity
	Workers	Inhalation	Systemic, long-term; 1.76 mg/m <sup>3</sup>	Repeated dose toxicity
	General population	Dermal	Systemic, long-term; 0.25 mg/kg	Repeated dose toxicity
	General population	Eyes	Local effect;	Medium hazard (no threshold derived)
	Workers	Eyes	Local effect;	Medium hazard (no threshold derived)

**PNEC-Values**

Remarks: PNEC-Values

Critical component	Environmental compartment	PNEC-Values	Remarks
2,4,7,9-Tetramethyldec-5-yne-4,7-diol	Aquatic (marine water)	0.004 mg/l	
	Soil	0.028 mg/kg	
	Sewage treatment plant	7 mg/l	
	Sediment (freshwater)	0.32 mg/kg	
	Aquatic (freshwater)	0.04 mg/l	
	Sediment (marine water)	0.032 mg/kg	

**8.2 Exposure controls**
**Appropriate Engineering Controls:** No data available.

**Individual protection measures, such as personal protective equipment**

<b>Eye/face protection:</b>	Tightly fitting safety goggles
<b>Hand Protection:</b>	Additional Information: gloves made of chloroprene (CR, e.g. Neoprene), gloves made of nitril (NBR)
<b>Skin and Body Protection:</b>	protective clothing
<b>Respiratory Protection:</b>	in case of formation of vapours/aerosols: Short term: filter apparatus, Filter P3
<b>Hygiene measures:</b>	Wash hands before breaks and immediately after handling the product. When using do not eat, drink or smoke. Remove soiled or soaked clothing immediately. Use skin protective preparation as preventive skin protection.

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**Environmental Controls:** The environmental regulations on the control and monitoring of environmental exposures are to be observed.

**SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties****Appearance**

<b>Physical state:</b>	solid
<b>Form:</b>	wax
<b>Color:</b>	White
<b>Odor:</b>	like menthol
<b>Odor Threshold:</b>	not measured
<b>Melting Point:</b>	54 - 55 °C Method: OECD 102
<b>Boiling Point:</b>	262 °C Method: OECD 103
<b>Flammability:</b>	not measured
<b>Upper/lower limit on flammability or explosive limits</b>	
<b>Explosive limit - upper:</b>	not measured
<b>Explosive limit - lower:</b>	not measured
<b>Flash Point:</b>	170 °C
<b>Auto-ignition temperature:</b>	not measured
<b>Decomposition Temperature:</b>	not measured
<b>pH:</b>	not measured

**Viscosity**

<b>Dynamic viscosity:</b>	not measured
<b>Kinematic viscosity:</b>	not measured

**Solubility(ies)**

<b>Solubility in Water:</b>	1.7 g/l at 20 °C Method: OECD 105
<b>Solubility (other):</b>	not measured
<b>Partition coefficient (n-octanol/water):</b>	2.8 at 22 °C Method: OECD 117
<b>Vapor pressure:</b>	0.0062 hPa at 20 °C Method: OECD 104
<b>Relative density:</b>	not measured
<b>Density:</b>	0.882 g/cm <sup>3</sup> at 25 °C
<b>Vapor density (air=1):</b>	not measured

**9.2 Other information**

<b>Explosive properties:</b>	not measured
<b>Oxidizing properties:</b>	not oxidizing
<b>Self-ignition:</b>	380 °C 1,015 hPa
<b>Metal Corrosion:</b>	Not corrosive to metals

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<b>Evaporation Rate:</b>	not measured
<b>Surface tension</b>	32.7 mN/m 0.1 at 20 °C

**SECTION 10: Stability and reactivity**

<b>10.1 Reactivity:</b>	see section "Possibility of hazardous reactions".
<b>10.2 Chemical Stability:</b>	The product is stable under normal conditions.
<b>10.3 Possibility of hazardous reactions:</b>	No hazardous reactions with proper storage and handling
<b>10.4 Conditions to avoid:</b>	None with proper storage and handling.
<b>10.5 Incompatible Materials:</b>	Oxidizing agents. Acids. Alkalies.
<b>10.6 Hazardous Decomposition Products:</b>	None with proper storage and handling.

**SECTION 11: Toxicological information**
**11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
**Information on likely routes of exposure**

<b>Inhalation:</b>	Information on effects are given below.
<b>Skin Contact:</b>	Information on effects are given below.
<b>Eye contact:</b>	Information on effects are given below.
<b>Ingestion:</b>	Information on effects are given below.

**Acute toxicity (list all possible routes of exposure)**
**Oral**

<b>Product:</b>	LD 50, Rat, > 5,000 mg/kg
<b>Components:</b>	
2,4,7,9-Tetramethyldec-5-yne-4,7-diol	LD 50, Rat, Female, Male, > 5,000 mg/kg

**Dermal**

<b>Product:</b>	LD 50, Rabbit, > 5,000 mg/kg, OECD 402
<b>Components:</b>	
2,4,7,9-Tetramethyldec-5-yne-4,7-diol	LD 50, Rabbit, > 5,000 mg/kg, OECD 402

**Inhalation**

<b>Product:</b>	LC 50, Rat, 1 h, > 20 mg/l, Dust and mist LC 50, Rat, 4 h, > 5 mg/l, Dust and mist
<b>Components:</b>	
2,4,7,9-Tetramethyldec-5-yne-4,7-diol	LC 50, Rat, 4 h, > 5 mg/l, Dust and mist Vapour, Not toxic after single exposure, No data available.

**Repeated dose toxicity**

<b>Product:</b>	NOAEL - No Observable Adverse Effect Level, Rat, Oral, daily, 500 mg/kg
<b>Components:</b>	

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2,4,7,9-Tetramethyldec-5- NOAEL - No Observable Adverse Effect Level, Rat, Oral, daily, 500  
yne-4,7-diol mg/kg

**Skin Corrosion/Irritation**

**Product:** Not irritating, OECD 404, (Rabbit, 4 h), Not irritating

**Components:**

2,4,7,9-Tetramethyldec-5- Not irritating, OECD 404, Rabbit, 4 h  
yne-4,7-diol

**Serious Eye Damage/Eye Irritation**

**Product:** Risk of serious damage to eyes., TSCA 40 CFR Subpart E, 798.4500,  
Rabbit, Risk of serious damage to eyes.

**Components:**

2,4,7,9-Tetramethyldec-5- Risk of serious damage to eyes., US-EPA-method, Rabbit  
yne-4,7-diol

**Respiratory or Skin Sensitization**

**Product:** Local Lymph Node Assay (LLNA), OECD 429, Mouse, Skin sensitizer

**Components:**

2,4,7,9-Tetramethyldec-5- Local Lymph Node Assay (LLNA), OECD 429, Mouse, Skin sensitizer  
yne-4,7-diol

**Carcinogenicity**

**Product:** No data available.

**Components:**

2,4,7,9-Tetramethyldec-5- No data available.  
yne-4,7-diol

**Germ Cell Mutagenicity**

No data available.

**In vitro**

**Product:** Bacterial reverse mutation assay, OECD 471: , negative, Own study  
Chromosomal aberration, OECD 473: , negative, Own study  
gene mutation test, OECD 476: , negative, Own study

**Components:**

2,4,7,9-Tetramethyldec-5- Ames test, OECD 471: , negative, Own study  
yne-4,7-diol Chromosomal aberration, OECD 473: , negative, Own study  
gene mutation test, OECD 476: , negative, Own study

**In vivo**

**Product:** No data available.

**Components:**

2,4,7,9-Tetramethyldec-5- No data available.  
yne-4,7-diol

**Reproductive toxicity**

**Product:** No data available. Oral

**Components:**

2,4,7,9-Tetramethyldec-5- Oral  
yne-4,7-diol

**Specific Target Organ Toxicity - Single Exposure**

**Product:** No data available.

**Components:**

2,4,7,9-Tetramethyldec-5- No data available.  
yne-4,7-diol



**Product name: SURFYNOL® 104**
**Specific Target Organ Toxicity - Repeated Exposure**
**Product:** No data available.

**Components:**

2,4,7,9-Tetramethyldec-5-yne-4,7-diol No data available.

**Aspiration Hazard**
**Product:** Not classified

**Components:**

2,4,7,9-Tetramethyldec-5-yne-4,7-diol Not applicable

**11.2 Information on other hazards**
**Other information**
**Product:** No data available.

<b>SECTION 12: Ecological information</b>
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**12.1 Toxicity:**
**Acute hazards to the aquatic environment:**
**Fish**
**Product:** LC 50, Pimephales promelas, 96 h, 36 mg/l OECD 203  
 LC 50, Cyprinus carpio, 96 h, 42 mg/l OECD 203

**Components:**

 2,4,7,9-Tetramethyldec-5-yne-4,7-diol LC 50, Pimephales promelas, 96 h, 36 mg/l OECD 203  
 LC 50, Cyprinus carpio, 96 h, 42 mg/l OECD 203  
 NOEC, Cyprinus carpio, 96 h, 10 mg/l OECD 203

**Aquatic Invertebrates**
**Product:** EC 50, Daphnia magna, 48 h, 88 mg/l OECD 202

**Components:**

 2,4,7,9-Tetramethyldec-5-yne-4,7-diol EC 50, Daphnia magna, 48 h, 88 mg/l OECD 202  
 EC 50, Daphnia magna, 48 h, 91 mg/l OECD 202  
 NOEC, Daphnia magna, 48 h, 43 mg/l OECD 202

**Toxicity to Aquatic Plants**
**Product:** EC 50 (Algae (Pseudokirchneriella subcapitata), 72 h): 15 mg/l (OECD 201)  
 EC 10 (Algae (Pseudokirchneriella subcapitata), 72 h): 1.8 mg/l (OECD 201)  
 ErC50 (Algae (Pseudokirchneriella subcapitata), 72 h): 82 mg/l (OECD 201)

**Components:**

 2,4,7,9-Tetramethyldec-5-yne-4,7-diol EC 50 (Algae (Pseudokirchneriella subcapitata), 72 h): 15 mg/l (OECD 201)  
 EC 10 (Algae (Pseudokirchneriella subcapitata), 72 h): 1.8 mg/l (OECD 201)  
 ErC50 (Algae (Pseudokirchneriella subcapitata), 72 h): 82 mg/l (OECD 201)

**Toxicity to microorganisms**
**Product:** EC 50, activated sludge, 3 h, 630 mg/l

**Components:**

2,4,7,9-Tetramethyldec-5-yne-4,7-diol EC 50, activated sludge, 3 h, Approximate, 630 mg/l, OECD 209

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yne-4,7-diol

**Toxicity to soil dwelling organisms**

**Product:** No data available.

**Components:**

2,4,7,9-Tetramethyldec-5-yne-4,7-diol No data available.

**Toxicity to terrestrial organisms**

**Product:** No data available.

**Components:**

2,4,7,9-Tetramethyldec-5-yne-4,7-diol No data available.

**Chronic hazards to the aquatic environment:**

**Fish**

**Product:** No data available.

**Components:**

2,4,7,9-Tetramethyldec-5-yne-4,7-diol No data available.

**Aquatic Invertebrates**

**Product:** No data available.

**Components:**

2,4,7,9-Tetramethyldec-5-yne-4,7-diol No data available.

**Toxicity to Aquatic Plants**

**Product:** No data available.

**Components:**

2,4,7,9-Tetramethyldec-5-yne-4,7-diol No data available.

**Toxicity to microorganisms**

**Product:** EC 50, activated sludge, 3 h, 630 mg/l

**Components:**

2,4,7,9-Tetramethyldec-5-yne-4,7-diol EC 50, activated sludge, 3 h, Approximate, 630 mg/l, OECD 209

**Toxicity to soil dwelling organisms**

**Product:** No data available.

**Components:**

2,4,7,9-Tetramethyldec-5-yne-4,7-diol No data available.

**Toxicity to terrestrial organisms**

**Product:** No data available.

**Components:**

2,4,7,9-Tetramethyldec-5-yne-4,7-diol No data available.

**12.2 Persistence and Degradability**

**Biodegradation**

**Product:** 5 %, 28 d, OECD 301 B, The product is not biodegradable.  
8 - 12 %, 60 d, OECD 301 B, The product is not biodegradable.  
25.4 %, 57 d, OECD 302 A, The product is not biodegradable.

**Components:**

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2,4,7,9-Tetramethyldec-5-yne-4,7-diol 5 %, 28 d, OECD 301 B, The product is not biodegradable., aerobic  
8 - 12 %, 60 d, OECD 301 B, The product is not biodegradable., aerobic  
25.4 %, 57 d, OECD 302 A, The product is not biodegradable., aerobic

### 12.3 Bioaccumulative potential

#### Bioconcentration Factor (BCF)

**Product:** No data available.

**Components:**

2,4,7,9-Tetramethyldec-5-yne-4,7-diol No data available.

#### Partition Coefficient n-octanol / water (log Kow)

**Product:** 2.8, 22 °C, OECD 117, Yes

**Components:**

2,4,7,9-Tetramethyldec-5-yne-4,7-diol 2.8, 22 °C, OECD 117, Yes

### 12.4 Mobility in soil:

**Product** No data available.

**Components:**

2,4,7,9-Tetramethyldec-5-yne-4,7-diol No data available.

### 12.5 Results of PBT and vPvB assessment:

**Product** No data available.

**Components:**

2,4,7,9-Tetramethyldec-5-yne-4,7-diol No data available.

### 12.6 Other adverse effects:

**Other hazards**

**Product:** Do not allow to enter soil, waterways or waste water canal.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

**General information:** No data available.

**Disposal methods:** In accordance with local authority regulations, take to special waste incineration plant

**Contaminated Packaging:** If empty contaminated containers are recycled or disposed of, the receiver must be informed about possible hazards.

## SECTION 14: Transport information

### 14.1 UN/ID No.

Not regulated as a dangerous good

### 14.2 UN proper shipping name

Not regulated as a dangerous good

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**14.3 Transport hazard class(es)**

Not regulated as a dangerous good

**14.4 Packing group**

Not regulated as a dangerous good

**14.5 Environmental hazards**

Not regulated as a dangerous good

**14.6 Special precautions for user**

Not applicable

**14.7 Maritime transport in bulk according to IMO instruments**

Not applicable for product as supplied.

**SECTION 15: Regulatory information**

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

**EU. Directive 2012/18/EU (SEVESO III) on major accident hazards involving dangerous substances, Annex I:** Not applicable

**15.2 Chemical safety assessment:** No chemical safety assessment was carried out for this product.

**International regulations**

**Montreal protocol**

Not applicable

**Stockholm convention**

Not applicable

**Rotterdam convention**

Not applicable

**Kyoto protocol**

Not applicable

**SECTION 16: Other information**

**Abbreviations and acronyms:**

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; EIGA - European Industrial Gases Association; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory;

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LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

**Key literature references and sources for data:** No data available.

**Training information:** Comply with national laws regulating employee instruction.

**Revision Information** Changes since the last version are highlighted in the margin. This version replaces all previous versions.

**Disclaimer:** This information and all further technical advice is based on our present knowledge and experience. However, it implies no liability or other legal responsibility on our part, including with regard to existing third party intellectual property rights, especially patent rights. In particular, no warranty, whether express or implied, or guarantee of product properties in the legal sense is intended or implied. We reserve the right to make any changes according to technological progress or further developments. The customer is not released from the obligation to conduct careful inspection and testing of incoming goods. Performance of the product described herein should be verified by testing, which should be carried out only by qualified experts in the sole responsibility of a customer. Reference to trade names used by other companies is neither a recommendation, nor does it imply that similar products could not be used.