

# SAFETY DATA SHEET

## Formic acid 85%

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Commission Regulation (EU) 2015/830

Date of revision : 2016-09-29

Version : 1

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

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#### 1.1. Product identifier

**Product name** : Formic acid 85%  
**Chemical name** : Formic acid  
**EC number** : 200-579-1  
**CAS number** : 64-18-6  
**INCI Name** : Not available/not applicable  
**REACH Registration number** : 01-2119491174-37  
**Other means of identification** : Hydrogen carboxylic acid; Methanoic acid  
**Chemical formula** : CH<sub>2</sub>O<sub>2</sub>

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

**Identified uses** : Manufacture of substance  
Distribution of substance  
Uses in Coatings  
Use in Cleaning Agents  
Use in Laboratories  
Industrial manufacture of polymers, resins  
Polymer processing  
Use as processing aid  
Use in Cleaning Agents  
Use in Laboratories  
Polymer processing  
Use as processing aid  
Animal nutrition  
Use as preserving  
Use in Cleaning Agents  
Use as processing aid

**Uses advised against** : Not available.

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

**Name** : GLI-THERM Sp. z o.o.  
**Address** : st. Rozwojowa 11, 44-338 Jastrzębie-Zdrój Poland  
**Regon** : 242850136  
**NIP/Tax No** : 6423178990  
**Telephone** : +48 733 525 533  
**E-mail** : [sandra.stachowicz@gli-therm.eu](mailto:sandra.stachowicz@gli-therm.eu)  
**Website address** : [www.gli-therm.eu](http://www.gli-therm.eu)

#### 1.4. Emergency telephone number

##### National advisory body/Poison Center:

Ireland	:	National Poisons Information Centre Emergency number: +353 1 809 2566 (Healthcare professionals-24/7) +353 1 809 2166 (public, 8am - 10pm, 7/7)
United Kingdom	:	National Poisons Information Service (Newcastle Centre) Emergency number: 0844 892 0111 (UK only, 24/7, healthcare professionals only)
Poland	:	Szpital Praski p.w. Przemienienia Pańskiego Sp. z o.o. Emergency number: +48 22 619 66 54 +48 22 619 08 97
Germany	:	Vergiftungs-Informationen-Zentrale Freiburg Emergency number: +49 (0) 761 19240
24 Hour Emergency Telephone	:	+(44)-8708200418 CHEMTREC
<b>Supplier</b>		
Telephone number	:	+48 733 525 533

## SECTION 2: Hazards identification

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### 2.1. Classification of the substance or mixture

The 85% formic acid is classified as following according to 67/548/EEC and REGULATION (EC) No 1272/2008:

#### REGULATION (EC) No 1272/2008


Hazard classes/Hazard categories	:	Hazard statement
Acute Tox-oral.4	:	H302
Skin Corr. 1B	:	H314
Acute Tox-inhalation.3	:	H331

For full text of H- phrases: see section 2.2.

#### 67/548/EEC

Hazards characteristics		R-Phrases
C		R35
Xn		R20/22

## 2.2. Label elements

<b>Hazard pictograms</b>	:	
<b>Signal word</b>	:	Danger
<b>Hazard statements</b>	:	<b>H302</b> Harmful if swallowed. <b>H314</b> Causes severe skin burns and eye damage. <b>H331</b> Toxic if inhaled
<b>Precautionary statements</b>	:	
<b>Prevention</b>	:	<b>P260</b> Do not breathe dust/fume/gas/mist/vapours/spray. <b>P264</b> Wash hands thoroughly after handling. <b>P270</b> Do not eat, drink or smoke when using this product. <b>P271</b> Use only outdoors or in a well-ventilated area. <b>P280</b> Wear protective gloves/protective clothing/eye protection/face protection.
<b>Response</b>	:	<b>P301 + P330 + P331</b> IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. <b>P303 + P361 + P353</b> IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. <b>P304 + P340</b> : IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. <b>P305 + P351 + P338</b> IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. <b>P310</b> Immediately call a POISON CENTER or doctor/physician.
<b>Storage</b>	:	<b>P403 + P233</b> Store in a well-ventilated place. Keep container tightly closed. <b>P405</b> Store locked up.
<b>Disposal</b>	:	<b>P501</b> Dispose of contents/container to local regulation.

## 2.3. Other hazards

<b>Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII</b>	:	The components of the mixture do not meet the criteria for classification as PBT in accordance with Annex XIII of the REACH Regulation.
<b>Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII</b>	:	The components of the mixture do not meet the criteria for classification as vPvB in accordance with Annex XIII of the REACH Regulation.
<b>Other hazards which do not result in classification</b>	:	<b>EUH071</b> : corrosive to the respiratory tract

## SECTION 3: Composition/information on ingredients

### 3.2. Mixture

Substance	Identifiers	%	Classification Regulation (EC) No. 1272/2008 [CLP/GHS]	Type
Formic acid	WE: 200-579-1 CAS: 64-18-6 REACH: 01-2119491174-37	85	Flam.liq 3, H226; Acute tox.3, H331; Skin Corr. 1A, H314; Acute Tox. 4, H302	[ A ]
Water	WE: 231-791-2 CAS: 7732-18-5	15	Not classified	[ A ]

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

Type:

[A] Constituent

[B] Impurity

[C] Stabilizing additive

Occupational exposure limits, if available, are listed in Section 8.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

**In all cases of doubt, or when symptoms persist, seek medical attention.**

- Eye contact** : Get medical aid immediately. Do NOT allow victim to rub or keep eyes closed. Extensive irrigation with water is required (at least 30 minutes).
- Inhalation** : Get medical aid immediately. Remove from exposure to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.
- Skin contact** : Get medical aid immediately. Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes.
- Ingestion** : Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

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

- Eye contact** : redness, tearing, pain, irritation, risk of serious eye damage.
- Inhalation** : may lead to irritation of the mucous membranes of the eyes, tearing, redness of the conjunctiva, coughing, burning sensation in the throat and nose, breathing problems. It is corrosive to the respiratory tract.

**Skin contact** : redness, irritation, burns, necrosis. Untreated burns can lead to wounds that are difficult to heal.

**Ingestion** : abdominal pain, nausea, burns of the mouth, throat and esophagus, risk of perforation of the esophagus and stomach.

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

**Notes to physician** : The decision on the method of emergency treatment is made by the doctor after a thorough assessment of the victim's condition.

**Specific treatments** : Symptomatic treatment.

## SECTION 5: Firefighting measures

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### 5.1. Extinguishing media

**Suitable extinguishing media** : For small fires, use dry chemical, carbon dioxide, or water spray. For large fires, use dry chemical, carbon dioxide, alcohol-resistant foam, or water spray.

**Unsuitable extinguishing media** : Do NOT get water inside containers.

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

During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. May polymerize explosively when involved in a fire. Contact with metals may evolve flammable hydrogen gas.

### 5.3 Advice for firefighters

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Use water spray to keep fire-exposed containers cool.

## SECTION 6: Accidental release measures

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

**For non-emergency personnel** : Remove ignition sources. Provide adequate ventilation. Avoid inhalation of vapour or dust. Avoid skin and eye contact.

**For emergency responders** : Wear an appropriate NIOSH/MSHA approved respirator

### 6.2. Environmental precautions

Avoid disposing into drainage/sewer system or directly into the aquatic environment.

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

Large spills may be neutralized with dilute alkaline solutions of soda ash, or lime. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Absorb spill using an absorbent, non-combustible material such as earth, sand, or vermiculite. Do not use combustible materials such as saw dust. Use a spark-proof tool. Provide ventilation. Do not get water inside containers.

### 6.4. Reference to other sections

See Section 1 for emergency contact information.  
See Section 7 for information on safe handling.  
See Section 8 for information on appropriate personal protective equipment.  
See Section 13 for additional waste treatment information.

### 6.5 Additional information

Wet clean or vacuum up solids.  
Don't use a brush or compressed air for cleaning surfaces or clothing.  
Clear spills immediately.

## SECTION 7: Handling and storage

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The information in this section contains generic advice and guidance.

### 7.1. Precautions for safe handling

<b>Protective measures</b>	:	Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous
<b>Advice on general occupational hygiene</b>	:	Use only in a well-ventilated area. Contents may develop pressure upon prolonged storage. Keep container tightly closed. Do not get on skin or in eyes. Do not ingest or inhale. Discard contaminated shoes. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames

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

Store in a tightly closed container. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Corrosives area. Do not store in metal containers. Do not store near alkaline substances. Vent periodically.

### 7.3. Specific end use(s)

<b>Recommendations</b>	:	Not available.
<b>Industrial sector specific solutions</b>	:	Not available.

## SECTION 8: Exposure controls/personal protection

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The information in this section contains generic advice and guidance.

### 8.1. Control parameters

<b>Occupational exposure limits</b>	:	TWA = 5 ppm 9.4mg/m <sup>3</sup> ; STEL = 10ppm 19 mg/m <sup>3</sup>
<b>Additional exposure limits under the conditions of use</b>	:	Not available.
<b>DNEL/DMEL and PNEC-Values</b>	:	Not available.

### 8.2. Exposure controls

<b>Appropriate engineering controls</b>	:	A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Use a flame proof exhaust ventilation system.
Individual protection measures		
<b>Hygiene measures</b>	:	Do not eat, drink or smoke while working. Wash hands thoroughly before breaks and at the end of work. Safety showers and eyewash stations should be installed near workstations.
<b>Eye/face protection</b>	:	Tightly fitting safety goggles and face shield EN166.
<b>Hand protection</b>	:	Chemical resistant gloves meeting EN374. Chloroprene and butyl rubber may be suitable glove material.
<b>Body protection</b>	:	Wear chemical resistant apron and boots EN465.
<b>Respiratory protection</b>	:	In case of inadequate ventilation or risk of inhalation of dust, use suitable respiratory equipment. Recommended filter type: Filter P2.
<b>Thermal hazards</b>	:	Wear suitable protective clothing to prevent heat.
<b>Environmental exposure controls</b>	:	Avoid discharge into the environment. This material and its container must be disposed of as hazardous waste. According to local regulations, Federal and official regulations.

## SECTION 9: Physical and chemical properties

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

Physical state	:	Liquid
Color	:	Colorless
Odor	:	pungent odor - benzaldehyde-like
Odor threshold	:	Not available
pH	:	Not available

Initial boiling point and boiling range	:	100.8°C
Melting point/freezing point	:	8°C
Flash point	:	42 °C(Formic acid CAS#64-18-6 99%)
Evaporation rate	:	Not available
Flammability (solid, gas)	:	Not available
Upper/lower flammability or explosive limits	:	Not available
Vapor pressure	:	44.8 mm Hg @ 20 °C
Vapor density	:	1.59
Density	:	
Relative density	:	Not available
Solubility(ies)	:	
Solubility in water at room temperature	:	Miscible
Partition coefficient: n-octanol/water	:	Not available
Ignition temperature	:	Not available
Auto-ignition temperature	:	ca.400°C(CAS#57-11-4)
Decomposition temperature	:	Not available
Viscosity, dynamic (mPa.s)	:	1.607mPa @ 25 °C
Viscosity	:	

## 9.2. Other information

Explosive properties	:	Lower: 18.0 vol % Upper: 57.0 vol %
Fat solubility(solvent– oil to be specified) etc:	:	Not available
Surface tension	:	71.5mN/m at 20 °C
Dissociation constant in water( pKa)	:	pKa = 3.70 at 20 °C
Oxidation-reduction Potential	:	Not available
Specific gravity	:	Not available

## SECTION 10: Stability and reactivity

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### 10.1. Reactivity

The substance is stable under normal storage and handling conditions.

### 10.2 Chemical stability

Under normal conditions, the product is stable. No hazardous reaction when handled and stored according to provisions.

Hazardous reactions are not known.

### 10.3. Possibility of hazardous reactions

Under normal conditions, not hazardous reactions will occur.

### 10.4. Conditions to avoid

Incompatible materials, metals, excess heat, combustible materials, oxidizers, plastics.



#### 10.5. Incompatible materials

Strong oxidizing agents, strong bases, finely powdered metals, permanganates, sulfuric acid, hydrogen peroxides, nitromethane, furfuryl alcohol, hydrated thallium nitrate.

#### 10.6 Hazardous decomposition products

Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.

## SECTION 11: Toxicological information

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### 11.1. Information on toxicological effects

Acute toxicity

Oral	:	LD50	730 mg/kg (Rat)
Oral	:	LOAEL	2000 mg/kg b.w. 2 year (Rat)
Oral	:	NOAEL	400 mg/kg b.w. 2 years (Rat)
Skin	:	LD50	940 mg/kg (Rabbit)
Inhalation	:	LC50	7,4 mg/dm <sup>3</sup> /4h (Rat)
Inhalation	:	LOAEL	0.244 mg/dm <sup>3</sup> /90 days/single time (Rat)
Inhalation	:	NOAEL	0.122 mg/dm <sup>3</sup> /90 days/single time (Rat)
Inhalation	:	NOAEL	0.244 mg/dm <sup>3</sup> /90 days/systematic

**Skin corrosion/irritation** : Causes severe skin burns and eye damage.

**Serious eye damage/eye irritation** : Causes severe skin burns and eye damage.

**Respiratory or skin sensitisation** : Not classified

**Germ cell mutagenicity** : Not classified

**Carcinogenic** : Not classified

**Reproductive toxicity** : Not classified

**Specific target organ toxicity - single exposure** : Not classified

**Specific target organ toxicity - repeated exposure** : Not classified

**Aspiration hazard** : Not classified

### 11.2 Endocrine disrupting properties

None of the ingredients are listed.

## SECTION 12: Ecological information

### 12.1. Toxicity

Acute toxicity		Time	Species	Method	Evaluation	Remarks
LC50	130 mg/l	96h	Fish	OECD 203	N/A	N/A
EC50	365 mg/l	48h	Daphnia	OECD 202	N/A	N/A
EC50	1000 mg/l	72h	Alges	OECD 201	N/A	N/A

### 12.2 Persistence and degradability

In natural water it has been shown to adsorb to sediment and would probably also biodegrade.

### 12.3 Bioaccumulative potential

Not bioaccumulative.

### 12.4 Mobility in soil

Not available.

### 12.5 Results of PBT and vPvB assessment

**PBT** : Not PBT substance.

**vPvB** : Not vPvB substance.

### 12.6 Endocrine disrupting properties

None of the ingredients are listed.

### 12.7 Other adverse effects

Not available.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification. Federal, local or national regulations for proper disposal.

### 13.2 Product / Packaging disposal

Disposal must be made according to official regulations.

## SECTION 14: Transport information

	ADR/RID	IMDG	IATA
14.1. UN Number	1779	1779	1779
14.2. UN Proper Shipping Name	FORMIC ACID	FORMIC ACID	FORMIC ACID
14.3. Transport Hazard Class(es)	8+3	8+3	8+3
14.4. Packing Group	II	II	II
14.5. Environmental Hazards	The mixture is not classified as dangerous for the environment in accordance with transport regulations.		
14.6. Special Precautions for users	Not applicable.		

## 14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

Not applicable.

## SECTION 15: Regulatory information

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

<b>Relevant information regarding authorization</b>	:	Not applicable.
<b>Relevant information regarding restriction</b>	:	Not applicable.
<b>Other EU regulations</b>	:	Employment restrictions concerning young person must be observed. For use only by technically qualified individuals.
<b>Other National regulations</b>	:	Not applicable

### 15.2 Chemical Safety Assessment:

A chemical safety assessment has not been carried out

## SECTION 16: Other information

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The data is confirmed based on the state of our knowledge, but does not determine how the production properties and cannot be used to justify legally binding contracts.

Abbreviations; acronyms and full text of H-Statements

<b>H225</b>	:	Highly flammable liquid and vapour.
<b>H290</b>	:	May be corrosive to metals.
<b>H301</b>	:	Toxic if swallowed.
<b>H302</b>	:	Harmful if swallowed.
<b>H312</b>	:	Harmful in contact with skin.
<b>H314</b>	:	Causes severe skin burns and eye damage.
<b>H315</b>	:	Causes skin irritation.
<b>H317</b>	:	May cause an allergic skin reaction.
<b>H318</b>	:	Causes serious eye damage.
<b>H319</b>	:	Causes serious eye irritation.
<b>H331</b>	:	Toxic if inhaled.
<b>H334</b>	:	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
<b>H335</b>	:	May cause respiratory irritation.
<b>H341</b>	:	Suspected of causing genetic defects.
<b>H350i</b>	:	May cause cancer by inhalation.
<b>H360D</b>	:	May damage the unborn child.
<b>H372</b>	:	Causes damage to organs through prolonged or repeated exposure.
<b>H400</b>	:	Very toxic to aquatic life.
<b>H410</b>	:	Very toxic to aquatic life with long lasting effects.

<b>H412</b>	: Harmful to aquatic life with long lasting effects.
<b>R35</b>	: Causes severe burns.
<b>R20/22</b>	: Harmful by inhalation and if swallowed.
<b>Eye Irrit. 2, H319</b>	: SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
<b>Aquatic Chronic 3,H412</b>	: AQUATIC HAZARD (LONG-TERM) - Category 3
<b>Eye Dam. 1, H318</b>	: SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
<b>Skin Irrit. 2, H315</b>	: SKIN CORROSION/IRRITATION - Category 2
<b>NDS</b>	: The highest acceptable concentration
<b>NDSCh</b>	: Highest Permissible Temporary Concentration
<b>NDSP</b>	: Maximum Allowable Ceiling Concentration
<b>REACH</b>	: Registration, Evaluation, Authorisation and Restriction of Chemical
<b>MARPOL</b>	: (from Marine Pollutant) International Convention for the Prevention of Marine Pollution from Ships
<b>N/A</b>	: Not applicable
<b>N/D</b>	: Not determined
<b>NE</b>	: Not established
<b>VOC</b>	: Volatile Organic Compound
<b>AICS</b>	: Australian Inventory of Chemical Substances
<b>AIHA WEEL</b>	: American Industrial Hygiene Association Workplace Environmental Exposure Limits
<b>DSL</b>	: Domestic Substance List (Canada)
<b>ELINCS</b>	: European List of Notified Chemical Substances
<b>ENCS</b>	: Existing and new Chemical Substances (Japanese inventory)
<b>IECSC</b>	: Inventory of Existing Chemical Substances in China
<b>KECI</b>	: Korean Existing Chemicals Inventory
<b>NDSL</b>	: Non-Domestic Substances List (Canada)
<b>NZIoC</b>	: New Zealand Inventory of Chemicals
<b>PICCS</b>	: Philippine Inventory of Chemicals and Chemical Substances
<b>TLV</b>	: Threshold Limit Value (American Conference of Governmental Industrial Hygienists)
<b>TSCA</b>	: Toxic Substances Control Act (U.S. inventory)
<b>UVCB</b>	: Substances of Unknown or Variable composition, Complex reaction products or Biological materials
<b>IBC Code</b>	: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
<b>UN</b>	: United Nations (also UNO: United Nations Organization)
<b>NOEC</b>	: No Observed Effect Concentration
<b>NOELR</b>	: No Observable Effect Loading Rate
<b>OECD</b>	: Organization for Economic Co-operation and Development
<b>ASTM</b>	: American Society for Testing and Materials
<b>WAF</b>	: Water Accommodated Fraction
<b>ADR</b>	: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

<b>IMDG</b>	:	International Maritime Code for Dangerous Goods
<b>IATA</b>	:	International Air Transport Association
<b>GHS</b>	:	Globally Harmonised System of Classification and Labeling of Chemicals
<b>EINECS</b>	:	European Inventory of Existing Commercial Chemical Substances
<b>CAS</b>	:	Chemical Abstracts Service (division of the American Chemical Society)
<b>DNEL</b>	:	Derived No-Effect Level (REACH)
<b>PNEC</b>	:	Predicted No-Effect Concentration (REACH)
<b>LC</b>	:	Lethal Concentration
<b>LD</b>	:	Lethal Dose
<b>LL</b>	:	Lethal Loading
<b>EC</b>	:	Effective Concentration
<b>EL</b>	:	Effective Loading
<b>LC50</b>	:	Lethal concentration, 50 percent
<b>LD50</b>	:	Lethal dose, 50 percent
<b>EC50</b>	:	The concentration of the test substance that causes 50% change in response (e.g. to growth) over a specified time period
<b>PBT</b>	:	Persistent, Bioaccumulative and Toxic
<b>vPvB</b>	:	very Persistent and very Bioaccumulative
<b>Acute Tox, 4</b>	:	Acute toxicity - Category 4
<b>Notice to reader</b>	:	The information contained herein is accurate to the latest knowledge and describes the product from the point of view of help and environmental protection as well as safe handling. The information presented in this SDS refers to the technical product only and will not apply to any processed product. Final determination of the suitability of any materials for the chosen application(s) is the sole responsibility of the user"