




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

- **1.1 Product identifier**
- **Trade name: Histofluid**
- **UFI:** V410-R0R6-N00W-EH11
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
- **Application of the substance / the preparation:**  
Adhesive and quick-hardening mounting medium for microscopy
- **Uses advised against:** No further relevant information available.
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Paul Marienfeld GmbH & Co. KG  
Am Wöllerspfad 4  
97922 Lauda-Königshofen  
Germany  
Tel.: +49 9343 6272 21  
Fax: +49 9343 6272 25  
Web: www.marienfeld-superior.com
- **1.4 Emergency telephone number:**  
Vergiftungs-Informations-Zentrale Freiburg  
Tel.: +49 (0) 761 19240

## \* SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
  - **Classification according to Regulation (EC) No 1272/2008**  
Flam. Liq. 3 H226 Flammable liquid and vapour.  
Acute Tox. 4 H312 Harmful in contact with skin.  
Skin Irrit. 2 H315 Causes skin irritation.  
Eye Irrit. 2 H319 Causes serious eye irritation.  
STOT SE 3 H335 May cause respiratory irritation.  
STOT RE 2 H373 May cause damage to the central nervous system, the kidneys, the liver and the hearing organs through prolonged or repeated exposure. Route of exposure: Inhalation.
  - **2.2 Label elements**
  - **Labelling according to Regulation (EC) No 1272/2008**  
The product is classified and labelled according to the CLP regulation.
  - **Hazard pictograms**
- 


- GHS02 GHS07 GHS08
- **Signal word** Warning
  - **Hazard-determining components of labelling:**  
reaction mass of ethylbenzene and xylene
  - **Hazard statements**  
H226 Flammable liquid and vapour.  
H312 Harmful in contact with skin.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.

## Safety data sheet

according to 1907/2006/EC, Article 31

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H335 May cause respiratory irritation.

H373 May cause damage to the central nervous system, the kidneys, the liver and the hearing organs through prolonged or repeated exposure. Route of exposure: Inhalation.

**Precautionary statements**

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P241 Use explosion-proof [electrical/ventilating/lighting] equipment.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

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

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

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

P405 Store locked up.

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

**Additional information:**

EUH208 Contains methyl methacrylate, n-butyl methacrylate. May produce an allergic reaction.

**2.3 Other hazards****Results of PBT and vPvB assessment**

PBT: No

vPvB: No

### SECTION 3: Composition/information on ingredients

**3.2 Mixtures****Dangerous components:**

EC number: 905-588-0	reaction mass of ethylbenzene and xylene Flam. Liq. 3, H226; STOT RE 2, H373; Asp. Tox. 1, H304; Acute Tox. 4, H312; Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	50 - 70%
CAS: 80-62-6 EC number: 201-297-1 Index number: 607-035-00-6	methyl methacrylate Flam. Liq. 2, H225; Skin Irrit. 2, H315; Skin Sens. 1, H317; STOT SE 3, H335	0.1 - 0.4%
CAS: 97-88-1 EC number: 202-615-1 Index number: 607-033-00-5	n-butyl methacrylate Flam. Liq. 3, H226; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	0.1 - 0.4%

**Additional information:** For the wording of the listed hazard phrases refer to section 16.

### SECTION 4: First aid measures

**4.1 Description of first aid measures****General information:**

Take affected persons out of danger area and lay down.

Immediately remove any clothing soiled by the product.

In case of irregular breathing or respiratory arrest provide artificial respiration.

**After inhalation:**

Supply fresh air and to be sure call for a doctor.

In case of unconsciousness place patient stably in side position for transportation.

**After skin contact:**

Immediately rinse with water.

If skin irritation continues, consult a doctor.

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· **After eye contact:**

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

Seek medical treatment.

· **After swallowing:**

Rinse out mouth and then drink plenty of water.

If symptoms persist consult doctor.

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

No further relevant information available.

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

No further relevant information available.

### SECTION 5: Firefighting measures

· **5.1 Extinguishing media**

· **Suitable extinguishing agents:**

CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Use fire extinguishing methods suitable to surrounding conditions.

· **For safety reasons unsuitable extinguishing agents:** Water with full jet

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

Formation of toxic gases is possible during heating or in case of fire.

In case of fire, the following can be released:

Carbon monoxide

Carbon dioxide

· **5.3 Advice for firefighters**

· **Protective equipment:** Wear self-contained respiratory protective device.

· **Additional information**

Cool endangered receptacles with water spray.

Collect contaminated fire fighting water separately. It must not enter the sewage system.

### SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**

Ensure adequate ventilation.

Wear protective clothing.

Keep away from ignition sources.

· **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

· **6.3 Methods and material for containment and cleaning up:**

Ensure adequate ventilation.

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose of the material collected according to regulations.

· **6.4 Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

### SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

· **Information about fire and explosion protection:**

Keep ignition sources away - Do not smoke.

Protect from heat.

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- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store only in the original receptacle.
- **Information about storage in one common storage facility:** Store away from oxidising agents.
- **Further information about storage conditions:** Store in cool, dry conditions in well sealed receptacles.
- **7.3 Specific end use(s)** No further relevant information available.

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

#### · 8.1 Control parameters

##### · Ingredients with limit values that require monitoring at the workplace:

###### **CAS: 80-62-6 methyl methacrylate**

OEL (Ireland)	Short-term value: 100 ppm Long-term value: 50 ppm IOELV, Sens
IOELV (EU)	Short-term value: 100 ppm Long-term value: 50 ppm

##### · DNELs

###### **reaction mass of ethylbenzene and xylene**

Oral	DNEL(long/systemic)	12.5 mg/kg bw/day (Consumer)
Dermal	DNEL(long/systemic)	125 mg/kg bw/day (Consumer) 212 mg/kg bw/day (Workers (Industrial/Professional))
Inhalative	DNEL(long/local)	65.3 mg/m <sup>3</sup> (Consumer) 221 mg/m <sup>3</sup> (Workers (Industrial/Professional))
	DNEL(long/systemic)	65.3 mg/m <sup>3</sup> (Consumer) 221 mg/m <sup>3</sup> (Workers (Industrial/Professional))
	DNEL(short/local)	260 mg/m <sup>3</sup> (Consumer) 442 mg/m <sup>3</sup> (Workers (Industrial/Professional))
	DNEL(short/systemic)	260 mg/m <sup>3</sup> (Consumer) 442 mg/m <sup>3</sup> (Workers (Industrial/Professional))

###### **CAS: 80-62-6 methyl methacrylate**

Oral	DNEL(long/systemic)	8.2 mg/kg bw/day (Consumer)
Dermal	DNEL(long/local)	1.5 mg/cm <sup>2</sup> (Consumer) 1.5 mg/cm <sup>2</sup> (Workers (Industrial/Professional))
	DNEL(long/systemic)	8.2 mg/kg bw/day (Consumer) 13.7 mg/kg bw/day (Workers (Industrial/Professional))
Inhalative	DNEL(short/local)	1.5 mg/cm <sup>2</sup> (Workers (Industrial/Professional))
	DNEL(long/local)	104 mg/m <sup>3</sup> (Consumer) 208 mg/m <sup>3</sup> (Workers (Industrial/Professional))
	DNEL(long/systemic)	74.3 mg/m <sup>3</sup> (Consumer) 348.4 mg/m <sup>3</sup> (Workers (Industrial/Professional))
	DNEL(short/local)	208 mg/m <sup>3</sup> (Consumer) 416 mg/m <sup>3</sup> (Workers (Industrial/Professional))

##### · PNECs

###### **reaction mass of ethylbenzene and xylene**

PNEC(aqua)	0.327 mg/L (freshwater)
	0.327 mg/L (marine water)

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PNEC(STP)	6.58 mg/L (sewage treatment plant)
PNEC(sediment)	12.46 mg/kg sedi. dw (freshwater) 12.46 mg/kg sedi. dw (marine water)
PNEC(soil)	2.31 mg/kg soil dw (soil)
<b>CAS: 80-62-6 methyl methacrylate</b>	
PNEC(aqua)	0.94 mg/L (freshwater) 0.094 mg/L (marine water)
PNEC(STP)	10 mg/L (sewage treatment plant)
PNEC(sediment)	10.2 mg/kg sedi. dw (freshwater) 1.02 mg/kg sedi. dw (marine water)
PNEC(soil)	1.48 mg/kg soil dw (soil)

· **8.2 Exposure controls**

· **Appropriate engineering controls** No further data; see section 7.

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

· **General protective and hygienic measures:**

Do not eat, drink, smoke or sniff while working.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Store protective clothing separately.

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes and skin.

The usual precautionary measures are to be adhered to when handling chemicals.

· **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

· **Hand protection**



Protective gloves

Only use chemical-protective gloves with CE-labelling of category III.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye/face protection**



Tightly sealed goggles

· **Body protection:** Protective work clothing

· **Environmental exposure controls** No further relevant information available.

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### SECTION 9: Physical and chemical properties

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

##### · General Information

##### · Physical state

Liquid

##### · Form:

Fluid

##### · Colour:

Colourless

##### · Odour:

Aromatic

##### · Odour threshold:

Not determined.

##### · Melting point/freezing point:

Not determined.

##### · Boiling point or initial boiling point and boiling range

137 °C

##### · Flammability

Flammable.

##### · Lower and upper explosion limit

##### · Lower:

1.1 Vol %

##### · Upper:

8 Vol %

##### · Flash point:

~ 23 °C

##### · Auto-ignition temperature:

&gt; 250 °C

##### · Decomposition temperature:

Not determined.

##### · pH

Not determined.

##### · Viscosity:

##### · Kinematic viscosity

Not determined.

##### · Dynamic at 20 °C:

250 - 450 mPas

##### · Solubility

##### · water:

Not miscible or difficult to mix.

##### · Partition coefficient n-octanol/water (log value)

	reaction mass of ethylbenzene and xylene	3,16 log Pow (20°C, Read-across)
80-62-6	methyl methacrylate	1,38 log Pow (20°C, OECD Guideline 107)
97-88-1	n-butyl methacrylate	2,99 logPow (20°C, OECD Guideline 107)

##### · Vapour pressure at 20 °C:

&lt; 8 hPa

##### · Density and/or relative density

##### · Density at 20 °C:

0.95 g/cm<sup>3</sup>

##### · Relative density

Not determined.

##### · Vapour density

Not determined.

##### · Relative gas density

Not determined.

##### · Particle characteristics

Not applicable.

#### · 9.2 Other information

##### · Explosive properties:

Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

##### · Oxidising properties

No

##### · Evaporation rate

Not determined.

#### · Information with regard to physical hazard classes

##### · Flammable liquids

Flammable liquid and vapour.

### SECTION 10: Stability and reactivity

· **10.1 Reactivity** No further relevant information available.

· **10.2 Chemical stability** No decomposition if used and stored according to specifications.

##### · Thermal decomposition / conditions to be avoided:

No decomposition if used according to specifications.

· **10.3 Possibility of hazardous reactions** No dangerous reactions known.

· **10.4 Conditions to avoid** No further relevant information available.

· **10.5 Incompatible materials:** No further relevant information available.

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- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

### SECTION 11: Toxicological information

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

- **Acute toxicity**

Harmful in contact with skin.

- **LD/LC50 values relevant for classification:**

**reaction mass of ethylbenzene and xylene**

Oral	LD50	3523 mg/kg (Rat) (EU Method B.1)
Inhalative	LC50 (4h)	6700 ppmV (Rat) (EU Method B.2)

**CAS: 80-62-6 methyl methacrylate**

Oral	LD50	> 5000 mg/kg (Rat)
Dermal	LD50	> 5000 mg/kg (Rat)
Inhalative	LC50 (4h)	29.8 mg/L (Rat)

**CAS: 97-88-1 n-butyl methacrylate**

Dermal	LD50	10181 mg/kg (Rabbit)
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- **Skin corrosion/irritation**

Causes skin irritation.

- **Serious eye damage/irritation**

Causes serious eye irritation.

- **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.

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

- **Reproductive toxicity** Based on available data, the classification criteria are not met.

- **STOT-single exposure**

May cause respiratory irritation.

- **STOT-repeated exposure**

May cause damage to the central nervous system, the kidneys, the liver and the hearing organs through prolonged or repeated exposure. Route of exposure: Inhalation.

- **Aspiration hazard** Based on available data, the classification criteria are not met.

- **11.2 Information on other hazards**

- **Endocrine disrupting properties**

None of the ingredients is listed.

### SECTION 12: Ecological information

- **12.1 Toxicity**

- **Aquatic toxicity:**

**reaction mass of ethylbenzene and xylene**

LC50 (96h) (static)	2.6 mg/L (Fish) (OECD Guideline 203, Oncorhynchus mykiss) Read-across
EC50 (24h) (static)	1 mg/L (Daphnia) (OECD Guideline 202, Daphnia magna) Read-across
NOEC	0.96 mg/L (Daphnia) (US EPA 600/4-91-003, Ceriodaphnia dubia) 7d, read-across > 1.3 mg/L (Fish) (Read-across, Oncorhynchus mykiss) 56d

**CAS: 80-62-6 methyl methacrylate**

LC50 (96h)	> 79 mg/L (Fish) (OECD Guideline 203, Oncorhynchus mykiss)
EC50 (48h)	69 mg/L (Daphnia) (OECD Guideline 202, Daphnia magna)

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EC50 (72h)	> 100 mg/L (Algae) (OECD Guideline 201, Selenastrum capricornutum)
NOEC (21d)	37 mg/L (Daphnia) (OECD Guideline 202, Daphnia magna)
NOEC (dynamic)	9.4 mg/L (Fish) (OECD Guideline 210, Danio rerio) 35d
NOEC (72h)	> 100 mg/L (Algae) (OECD Guideline 201, Selenastrum capricornutum)

**CAS: 97-88-1 n-butyl methacrylate**

LC50 (96h) (dynamic)	11 mg/L (Fish) (OECD Guideline 203, Pimephales promelas) measured
EC50 (48h) (static)	25.4 mg/L (Daphnia) (OECD Guideline 202, Daphnia magna) nominal
EC50 (72h) (static)	31.2 mg/L (Algae) (OECD Guideline 201, Pseudokirchneriella subcapitata)
NOEC (21d)	1.1 mg/L (Daphnia) (OECD Guideline 211, Daphnia magna)
NOEC (28d)	100 mg/L (Bacteria) (OECD Guideline 301 C)

**· 12.2 Persistence and degradability**

	reaction mass of ethylbenzene and xylene	98% (28d, OECD Guideline 301 F)
80-62-6	methyl methacrylate	94 % (14 d, OECD Guideline 301 C)
97-88-1	n-butyl methacrylate	88 % (28d, OECD Guideline 301 C)

**· 12.3 Bioaccumulative potential**

97-88-1	n-butyl methacrylate	70 BCF (calculation)
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**· 12.4 Mobility in soil**

	reaction mass of ethylbenzene and xylene	2,73 log Koc (Read-across)
80-62-6	methyl methacrylate	0,961 log Koc (20°C, QSAR)

**· 12.5 Results of PBT and vPvB assessment**

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

**· 12.6 Endocrine disrupting properties**

The product does not contain substances with endocrine disrupting properties.

**· 12.7 Other adverse effects** No further relevant information available.

## SECTION 13: Disposal considerations

**· 13.1 Waste treatment methods**

· **Recommendation:** Must be specially treated adhering to official regulations.

**· Uncleaned packaging**

· **Recommendation:** Disposal must be made according to official regulations.

## SECTION 14: Transport information

· <b>14.1 UN number or ID number</b>	
· <b>ADR/RID/ADN, IMDG, IATA</b>	UN1307
· <b>14.2 UN proper shipping name</b>	
· <b>ADR/RID/ADN</b>	1307 XYLENES
· <b>IMDG, IATA</b>	XYLENES

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<ul style="list-style-type: none"> <li>· <b>14.3 Transport hazard class(es)</b></li> <li>· <b>ADR/RID/ADN, IMDG, IATA</b></li> </ul>	
	
<ul style="list-style-type: none"> <li>· <b>Class</b></li> <li>· <b>Label</b></li> </ul>	3 Flammable liquids. 3
<ul style="list-style-type: none"> <li>· <b>14.4 Packing group</b></li> <li>· <b>ADR/RID/ADN, IMDG, IATA</b></li> </ul>	
	III
<ul style="list-style-type: none"> <li>· <b>14.5 Environmental hazards:</b></li> </ul>	
	Not applicable.
<ul style="list-style-type: none"> <li>· <b>14.6 Special precautions for user</b></li> <li>· <b>Hazard identification number (Kemler code):</b></li> <li>· <b>EMS Number:</b></li> <li>· <b>Stowage Category</b></li> </ul>	
	Warning: Flammable liquids.
	30
	F-E, S-D
	A
<ul style="list-style-type: none"> <li>· <b>14.7 Maritime transport in bulk according to IMO instruments</b></li> </ul>	
	Not applicable.
<ul style="list-style-type: none"> <li>· <b>Transport/Additional information:</b></li> </ul>	
<ul style="list-style-type: none"> <li>· <b>ADR/RID/ADN</b></li> <li>· <b>Tunnel restriction code</b></li> </ul>	
	D/E
<ul style="list-style-type: none"> <li>· <b>UN "Model Regulation":</b></li> </ul>	
	UN 1307 XYLENES, 3, III

### SECTION 15: Regulatory information

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

- **Directive 2012/18/EU**

- **Named dangerous substances - ANNEX I** None of the ingredients is listed.

- **Seveso category** P5c FLAMMABLE LIQUIDS

- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 5000 t

- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 50000 t

- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3

- **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**

None of the ingredients is listed.

- **REGULATION (EU) 2019/1148**

- **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**

None of the ingredients is listed.

- **Annex II - REPORTABLE EXPLOSIVES PRECURSORS**

None of the ingredients is listed.

- **Regulation (EC) No 273/2004 on drug precursors**

None of the ingredients is listed.

- **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**

None of the ingredients is listed.

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- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### \* SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

#### · **Relevant phrases**

- H225 Highly flammable liquid and vapour.
- H226 Flammable liquid and vapour.
- H304 May be fatal if swallowed and enters airways.
- H312 Harmful in contact with skin.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H332 Harmful if inhaled.
- H335 May cause respiratory irritation.
- H373 May cause damage to organs through prolonged or repeated exposure.

- **Date of previous version:** 14.04.2023

- **Version number of previous version:** 2.00

#### · **Abbreviations and acronyms:**

- REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
- MARPOL: (from Marine Pollutant) International Convention for the Prevention of Marine Pollution from Ships
- IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
- UN: United Nations (also UNO: United Nations Organization)
- NOEC: No Observed Effect Concentration
- OECD: Organisation for Economic Co-operation and Development
- ASTM: American Society for Testing and Materials
- WAF: Water Accommodated Fraction
- ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- IATA: International Air Transport Association
- GHS: Globally Harmonised System of Classification and Labelling of Chemicals
- EINECS: European Inventory of Existing Commercial Chemical Substances
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- DNEL: Derived No-Effect Level (REACH)
- PNEC: Predicted No-Effect Concentration (REACH)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- PBT: Persistent, Bioaccumulative and Toxic
- vPvB: very Persistent and very Bioaccumulative
- Flam. Liq. 2: Flammable liquids – Category 2
- Flam. Liq. 3: Flammable liquids – Category 3
- Acute Tox. 4: Acute toxicity – Category 4
- Skin Irrit. 2: Skin corrosion/irritation – Category 2
- Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
- Skin Sens. 1: Skin sensitisation – Category 1
- STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
- STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
- Asp. Tox. 1: Aspiration hazard – Category 1

- \* **Data compared to the previous version altered.**