

Custom EPA VOC Mix

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

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Version: 1.0

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

1.1. Product identifier

Product form : Mixture
Product name : Custom EPA VOC Mix
Product code : AL0-130338
Product group : Trade product

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

1.2.1. Relevant identified uses

Main use category : Laboratory Use
Industrial/Professional use spec : Industrial
For professional use only
Use of the substance/mixture : Certified reference material for laboratory use only

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Phenova
6390 Joyce Dr. Suite 100
80403 Golden, CO - United States
T 1-866-942-2978 - F 1-866-283-0269
info@phenova.com - www.phenova.com

1.4. Emergency telephone number

Emergency number : ChemTel Assistance (US/Canada) 1-800-255-3924
ChemTel Assistance (International) +1 813-248-0585

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flam. Liq. 2 : H225
Acute Tox. 3 (Oral) : H301
Acute Tox. 3 (Dermal) : H311
STOT SE 1 : H370

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

F; R11
T; R23/24/25
T; R39/23/24/25
Full text of R-phrases: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labeling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



Signal word (CLP) : Danger
Hazard statements (CLP) : H225 - Highly flammable liquid and vapor
H301+H311 - Toxic if swallowed or in contact with skin
H370 - Causes damage to organs

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Precautionary statements (CLP) : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P233 - Keep container tightly closed
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P270 - Do not eat, drink or smoke when using this product
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water
P308+P313 - IF exposed or concerned: Get medical advice/attention
P361+P364 - Take off immediately all contaminated clothing and wash it before reuse
P370+P378 - In case of fire: Use media other than water to extinguish
P403+P235 - Store in a well-ventilated place. Keep cool
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

No labeling applicable

2.3. Other hazards

No additional information available

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
methanol (Component)	(CAS No) 67-56-1 (EC-No.) 200-659-6 (EC index no) 603-001-00-X	99.8	Flam. Liq. 2, H225 Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation), H331 STOT SE 1, H370
chlorobenzene (Component)	(CAS No) 108-90-7 (EC-No.) 203-628-5 (EC index no) 602-033-00-1	0.2	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation), H332 Aquatic Acute 1, H400 Aquatic Chronic 2, H411
1,2-dichlorobenzene (Component)	(CAS No) 95-50-1 (EC-No.) 202-425-9 (EC index no) 602-034-00-7	0.2	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
toluene (Component)	(CAS No) 108-88-3 (EC-No.) 203-625-9 (EC index no) 601-021-00-3	0.2	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361d STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304
ethylbenzene (Component) substance with a Community workplace exposure limit	(CAS No) 100-41-4 (EC-No.) 202-849-4 (EC index no) 601-023-00-4	0.2	Flam. Liq. 2, H225 Acute Tox. 4 (Inhalation), H332 STOT RE 2, H373 Asp. Tox. 1, H304
styrene (Component)	(CAS No) 100-42-5 (EC-No.) 202-851-5 (EC index no) 601-026-00-0	0.2	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Repr. 2, H361d STOT RE 1, H372
tetrachloroethylene (Component)	(CAS No) 127-18-4 (EC-No.) 204-825-9 (EC index no) 602-028-00-4	0.2	Carc. 2, H351 Aquatic Chronic 2, H411
o-xylene (Component) substance with a Community workplace exposure limit	(CAS No) 95-47-6 (EC-No.) 202-422-2 (EC index no) 601-022-00-9	0.2	Flam. Liq. 3, H226 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315
p-xylene (Component) substance with a Community workplace exposure limit	(CAS No) 106-42-3 (EC-No.) 203-396-5 (EC index no) 601-022-00-9	0.2	Flam. Liq. 3, H226 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315

Name	Product identifier	Specific concentration limits
methanol (Component)	(CAS No) 67-56-1 (EC-No.) 200-659-6 (EC index no) 603-001-00-X	(3 =<C < 10) STOT SE 2, H371 (C >= 10) STOT SE 1, H370

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SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. Call a POISON CENTER or doctor/physician. IF exposed or concerned: Get medical advice/attention.
- First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- First-aid measures after skin contact : Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Immediately call a poison center or doctor/physician. Wash with plenty of soap and water. Wash contaminated clothing before reuse.
- First-aid measures after eye contact : Remove contact lenses, if present and easy to do. Continue rinsing. Rinse cautiously with water for several minutes. Obtain medical attention if pain, blinking or redness persists.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Immediately call a poison center or doctor/physician.

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

- Symptoms/effects after skin contact : Repeated exposure to this material can result in absorption through skin causing significant health hazard. Toxic in contact with skin.
- Symptoms/effects after ingestion : Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

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

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Highly flammable liquid and vapor.
- Explosion hazard : May form flammable/explosive vapor-air mixture.

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection. Avoid breathing dust/fume/gas/mist/vapors/spray.
- Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Take up in absorbent material. Collect spillage.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Additional hazards when processed : Handle empty containers with care because residual vapors are flammable.
- Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. No open flames. No smoking. Use only non-sparking tools.
- Hygiene measures : Do not eat, drink or smoke when using this product. Gently wash with plenty of soap and water. Remove/Take off immediately all contaminated clothing. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment.

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Storage conditions	: Keep in fireproof place. Keep container tightly closed. Keep container tightly closed and in a well-ventilated place. Keep away from any flames or sparking source.
Incompatible materials	: Direct sunlight. Heat sources.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

chlorobenzene (108-90-7)		
EU	IOELV TWA (mg/m ³)	23 mg/m ³ (Monochlorobenzene; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value)
EU	IOELV TWA (ppm)	5 ppm (Monochlorobenzene; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value)
EU	IOELV STEL (mg/m ³)	70 mg/m ³ (Monochlorobenzene; EU; Short time value; Indicative occupational exposure limit value)
EU	IOELV STEL (ppm)	15 ppm (Monochlorobenzene; EU; Short time value; Indicative occupational exposure limit value)
Belgium	Limit value (mg/m ³)	23 mg/m ³ (Chlorobenzène; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Limit value (ppm)	5 ppm (Chlorobenzène; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Short time value (mg/m ³)	70 mg/m ³ (Chlorobenzène; Belgium; Short time value)
Belgium	Short time value (ppm)	15 ppm (Chlorobenzène; Belgium; Short time value)
France	VLE (mg/m ³)	70 mg/m ³ (Chlorobenzène; France; Short time value; VRC: Valeur réglementaire contraignante)
France	VLE (ppm)	15 ppm (Chlorobenzène; France; Short time value; VRC: Valeur réglementaire contraignante)
France	VME (mg/m ³)	23 mg/m ³ (Chlorobenzène; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
France	VME (ppm)	5 ppm (Chlorobenzène; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	10 ppm (Chlorobenzene; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
USA OSHA	OSHA PEL (TWA) (mg/m ³)	350 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	75 mppcf
Netherlands	Grenswaarde TGG 8H (mg/m ³)	23 mg/m ³ (Chloorbenzeen; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 8H (ppm)	4.9 ppm (Chloorbenzeen; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 15MIN (mg/m ³)	70 mg/m ³ (Chloorbenzeen; Netherlands; Short time value; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 15MIN (ppm)	15 ppm (Chloorbenzeen; Netherlands; Short time value; Public occupational exposure limit value)
United Kingdom	WEL TWA (mg/m ³)	4.7 mg/m ³ Chlorobenzene; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL TWA (ppm)	1 ppm Chlorobenzene; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (mg/m ³)	14 mg/m ³ Chlorobenzene; United Kingdom; Short time value; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (ppm)	3 ppm Chlorobenzene; United Kingdom; Short time value; Workplace exposure limit (EH40/2005)
1,2-dichlorobenzene (95-50-1)		
EU	IOELV TWA (mg/m ³)	122 mg/m ³ (1,2-Dichlorobenzene; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value)
EU	IOELV TWA (ppm)	20 ppm (1,2-Dichlorobenzene; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value)

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1,2-dichlorobenzene (95-50-1)		
EU	IOELV STEL (mg/m ³)	306 mg/m ³ (1,2-Dichlorobenzene; EU; Short time value; Indicative occupational exposure limit value)
EU	IOELV STEL (ppm)	50 ppm (1,2-Dichlorobenzene; EU; Short time value; Indicative occupational exposure limit value)
Belgium	Limit value (mg/m ³)	122 mg/m ³ (1,2-Dichlorobenzène; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Limit value (ppm)	20 ppm (1,2-Dichlorobenzène; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Short time value (mg/m ³)	306 mg/m ³ (1,2-Dichlorobenzène; Belgium; Short time value)
Belgium	Short time value (ppm)	50 ppm (1,2-Dichlorobenzène; Belgium; Short time value)
France	VLE (mg/m ³)	306 mg/m ³ (1,2-Dichlorobenzène; France; Short time value; VRC: Valeur réglementaire contraignante)
France	VLE (ppm)	50 ppm (1,2-Dichlorobenzène; France; Short time value; VRC: Valeur réglementaire contraignante)
France	VME (mg/m ³)	122 mg/m ³ (1,2-Dichlorobenzène; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
France	VME (ppm)	20 ppm (1,2-Dichlorobenzène; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	25 ppm (o-Dichlorobenzene; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
Italy - Portugal - USA ACGIH	ACGIH STEL (ppm)	50 ppm (o-Dichlorobenzene; USA; Short time value; TLV - Adopted Value)
Netherlands	Grenswaarde TGG 8H (mg/m ³)	122 mg/m ³ (1,2-Dichloorbenzeen; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 8H (ppm)	20 ppm (1,2-Dichloorbenzeen; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 15MIN (mg/m ³)	300 mg/m ³ (1,2-Dichloorbenzeen; Netherlands; Short time value; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 15MIN (ppm)	49 ppm (1,2-Dichloorbenzeen; Netherlands; Short time value; Public occupational exposure limit value)
United Kingdom	WEL TWA (mg/m ³)	153 mg/m ³ 1,2-dichlorobenzene (ortho-dichlorobenzene); United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL TWA (ppm)	25 ppm 1,2-dichlorobenzene (ortho-dichlorobenzene); United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (mg/m ³)	306 mg/m ³ 1,2-dichlorobenzene (ortho-dichlorobenzene); United Kingdom; Short time value; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (ppm)	50 ppm 1,2-dichlorobenzene (ortho-dichlorobenzene); United Kingdom; Short time value; Workplace exposure limit (EH40/2005)
ethylbenzene (100-41-4)		
EU	IOELV TWA (mg/m ³)	442 mg/m ³ (Ethylbenzene; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value)
EU	IOELV TWA (ppm)	100 ppm (Ethylbenzene; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value)
EU	IOELV STEL (mg/m ³)	884 mg/m ³ (Ethylbenzene; EU; Short time value; Indicative occupational exposure limit value)
EU	IOELV STEL (ppm)	200 ppm (Ethylbenzene; EU; Short time value; Indicative occupational exposure limit value)
Belgium	Limit value (mg/m ³)	442 mg/m ³ (Ethylbenzène; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Limit value (ppm)	100 ppm (Ethylbenzène; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Short time value (mg/m ³)	551 mg/m ³ (Ethylbenzène; Belgium; Short time value)
Belgium	Short time value (ppm)	125 ppm (Ethylbenzène; Belgium; Short time value)

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ethylbenzene (100-41-4)		
France	VLE (mg/m ³)	442 mg/m ³ (Ethylbenzène; France; Short time value; VRC: Valeur réglementaire contraignante)
France	VLE (ppm)	100 ppm (Ethylbenzène; France; Short time value; VRC: Valeur réglementaire contraignante)
France	VME (mg/m ³)	88.4 mg/m ³ (Ethylbenzène; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
France	VME (ppm)	20 ppm (Ethylbenzène; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	20 ppm (Ethyl benzene; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
Netherlands	Grenswaarde TGG 8H (mg/m ³)	215 mg/m ³ (Ethylbenzeen; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 8H (ppm)	49 ppm (Ethylbenzeen; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 15MIN (mg/m ³)	430 mg/m ³ (Ethylbenzeen; Netherlands; Short time value; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 15MIN (ppm)	97 ppm (Ethylbenzeen; Netherlands; Short time value; Public occupational exposure limit value)
United Kingdom	WEL TWA (mg/m ³)	441 mg/m ³ Ethylbenzene; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL TWA (ppm)	100 ppm Ethylbenzene; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (mg/m ³)	552 mg/m ³ Ethylbenzene; United Kingdom; Short time value; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (ppm)	125 ppm Ethylbenzene; United Kingdom; Short time value; Workplace exposure limit (EH40/2005)
styrene (100-42-5)		
Belgium	Limit value (mg/m ³)	173 mg/m ³ (Styrène (monomère); Belgium; Time-weighted average exposure limit 8 h)
Belgium	Limit value (ppm)	40 ppm (Styrène (monomère); Belgium; Time-weighted average exposure limit 8 h)
Belgium	Short time value (mg/m ³)	346 mg/m ³ (Styrène (monomère); Belgium; Short time value)
Belgium	Short time value (ppm)	80 ppm (Styrène (monomère); Belgium; Short time value)
France	VME (mg/m ³)	215 mg/m ³ (Styrène; France; Time-weighted average exposure limit 8 h; VL: Valeur non réglementaire indicative)
France	VME (ppm)	50 ppm (Styrène; France; Time-weighted average exposure limit 8 h; VL: Valeur non réglementaire indicative)
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	20 ppm (Styrene, monomer; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
Italy - Portugal - USA ACGIH	ACGIH STEL (ppm)	40 ppm (Styrene, monomer; USA; Short time value; TLV - Adopted Value)
United Kingdom	WEL TWA (mg/m ³)	430 mg/m ³ Styrene; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL TWA (ppm)	100 ppm Styrene; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (mg/m ³)	1080 mg/m ³ Styrene; United Kingdom; Short time value; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (ppm)	250 ppm Styrene; United Kingdom; Short time value; Workplace exposure limit (EH40/2005)
tetrachloroethylene (127-18-4)		
Belgium	Limit value (mg/m ³)	172 mg/m ³ (Perchloroéthylène; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Limit value (ppm)	25 ppm (Perchloroéthylène; Belgium; Time-weighted average exposure limit 8 h)

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tetrachloroethylene (127-18-4)		
Belgium	Short time value (mg/m ³)	695 mg/m ³ (Perchloroéthylène; Belgium; Short time value)
Belgium	Short time value (ppm)	100 ppm (Perchloroéthylène; Belgium; Short time value)
France	VLE (mg/m ³)	275 mg/m ³ (Perchloroéthylène; France; Short time value; VRC: Valeur réglementaire contraignante)
France	VLE (ppm)	40 ppm (Perchloroéthylène; France; Short time value; VRC: Valeur réglementaire contraignante)
France	VME (mg/m ³)	138 mg/m ³ (Perchloroéthylène; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
France	VME (ppm)	20 ppm (Perchloroéthylène; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	25 ppm (Tetrachloroethylene (Perchloroethylene); USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
Italy - Portugal - USA ACGIH	ACGIH STEL (ppm)	100 ppm (Tetrachloroethylene (Perchloroethylene); USA; Short time value; TLV - Adopted Value)
United Kingdom	WEL TWA (mg/m ³)	345 mg/m ³ Tetrachloroethylene; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL TWA (ppm)	50 ppm Tetrachloroethylene; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (mg/m ³)	689 mg/m ³ Tetrachloroethylene; United Kingdom; Short time value; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (ppm)	100 ppm Tetrachloroethylene; United Kingdom; Short time value; Workplace exposure limit (EH40/2005)
toluene (108-88-3)		
EU	IOELV TWA (mg/m ³)	192 mg/m ³ (Toluene; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value)
EU	IOELV TWA (ppm)	50 ppm (Toluene; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value)
EU	IOELV STEL (mg/m ³)	384 mg/m ³ (Toluene; EU; Short time value; Indicative occupational exposure limit value)
EU	IOELV STEL (ppm)	100 ppm (Toluene; EU; Short time value; Indicative occupational exposure limit value)
Belgium	Limit value (mg/m ³)	77 mg/m ³ (Toluène; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Limit value (ppm)	20 ppm (Toluène; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Short time value (mg/m ³)	384 mg/m ³ (Toluène; Belgium; Short time value)
Belgium	Short time value (ppm)	100 ppm (Toluène; Belgium; Short time value)
France	VLE (mg/m ³)	384 mg/m ³ (Toluène; France; Short time value; VRC: Valeur réglementaire contraignante)
France	VLE (ppm)	100 ppm (Toluène; France; Short time value; VRC: Valeur réglementaire contraignante)
France	VME (mg/m ³)	76.8 mg/m ³ (Toluène; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
France	VME (ppm)	20 ppm (Toluène; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	20 ppm (Toluene; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
Netherlands	Grenswaarde TGG 8H (mg/m ³)	150 mg/m ³ (Toluene; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 8H (ppm)	39 ppm (Toluene; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 15MIN (mg/m ³)	384 mg/m ³ (Toluene; Netherlands; Short time value; Public occupational exposure limit value)

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toluene (108-88-3)		
Netherlands	Grenswaarde TGG 15MIN (ppm)	100 ppm (Toluene; Netherlands; Short time value; Public occupational exposure limit value)
United Kingdom	WEL TWA (mg/m ³)	191 mg/m ³ Toluene; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL TWA (ppm)	50 ppm Toluene; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (mg/m ³)	384 mg/m ³ Toluene; United Kingdom; Short time value; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (ppm)	100 ppm Toluene; United Kingdom; Short time value; Workplace exposure limit (EH40/2005)
o-xylene (95-47-6)		
EU	IOELV TWA (mg/m ³)	221 mg/m ³ (o-Xylene; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value)
EU	IOELV TWA (ppm)	50 ppm (o-Xylene; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value)
EU	IOELV STEL (mg/m ³)	442 mg/m ³ (o-Xylene; EU; Short time value; Indicative occupational exposure limit value)
EU	IOELV STEL (ppm)	100 ppm (o-Xylene; EU; Short time value; Indicative occupational exposure limit value)
Belgium	Limit value (mg/m ³)	221 mg/m ³ (o-Xylène; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Limit value (ppm)	50 ppm (o-Xylène; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Short time value (mg/m ³)	442 mg/m ³ (o-Xylène; Belgium; Short time value)
Belgium	Short time value (ppm)	100 ppm (o-Xylène; Belgium; Short time value)
France	VLE (mg/m ³)	442 mg/m ³ (o-Xylène; France; Short time value; VRC: Valeur réglementaire contraignante)
France	VLE (ppm)	100 ppm (o-Xylène; France; Short time value; VRC: Valeur réglementaire contraignante)
France	VME (mg/m ³)	221 mg/m ³ (o-Xylène; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
France	VME (ppm)	50 ppm (o-Xylène; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	100 ppm (Xylene (all isomers); USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value; Xylene (o- isomer); 100 ppm; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
Italy - Portugal - USA ACGIH	ACGIH STEL (ppm)	150 ppm (Xylene (all isomers); USA; Short time value; TLV - Adopted Value; Xylene (o- isomer); 150 ppm; USA; Short time value; TLV - Adopted Value)
Netherlands	Grenswaarde TGG 8H (mg/m ³)	210 mg/m ³ (Xyleen (o-,m- en p-isomeren); Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 8H (ppm)	48 ppm (Xyleen (o-,m- en p-isomeren); Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 15MIN (mg/m ³)	442 mg/m ³ (Xyleen (o-,m- en p-isomeren); Netherlands; Short time value; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 15MIN (ppm)	100 ppm (Xyleen (o-,m- en p-isomeren); Netherlands; Short time value; Public occupational exposure limit value)
United Kingdom	WEL TWA (mg/m ³)	220 mg/m ³ Xylene, o-,m-,p- or mixed isomers; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL TWA (ppm)	50 ppm Xylene, o-,m-,p- or mixed isomers; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (mg/m ³)	441 mg/m ³ Xylene, o-,m-,p- or mixed isomers; United Kingdom; Short time value; Workplace exposure limit (EH40/2005)

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o-xylene (95-47-6)		
United Kingdom	WEL STEL (ppm)	100 ppm Xylene, o-,m-,p- or mixed isomers; United Kingdom; Short time value; Workplace exposure limit (EH40/2005)
p-xylene (106-42-3)		
EU	IOELV TWA (mg/m ³)	221 mg/m ³ (p-Xylene; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value)
EU	IOELV TWA (ppm)	50 ppm (p-Xylene; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value)
EU	IOELV STEL (mg/m ³)	442 mg/m ³ (p-Xylene; EU; Short time value; Indicative occupational exposure limit value)
EU	IOELV STEL (ppm)	100 ppm (p-Xylene; EU; Short time value; Indicative occupational exposure limit value)
Belgium	Limit value (mg/m ³)	221 mg/m ³ (p-Xylène; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Limit value (ppm)	50 ppm (p-Xylène; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Short time value (mg/m ³)	442 mg/m ³ (p-Xylène; Belgium; Short time value)
Belgium	Short time value (ppm)	100 ppm (p-Xylène; Belgium; Short time value)
France	VLE (mg/m ³)	442 mg/m ³ (p-Xylène; France; Short time value; VRC: Valeur réglementaire contraignante)
France	VLE (ppm)	100 ppm (p-Xylène; France; Short time value; VRC: Valeur réglementaire contraignante)
France	VME (mg/m ³)	221 mg/m ³ (p-Xylène; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
France	VME (ppm)	50 ppm (p-Xylène; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	100 ppm (Xylene (all isomers); USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value; Xylene (p- isomers); 100 ppm; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
Italy - Portugal - USA ACGIH	ACGIH STEL (ppm)	150 ppm (Xylene (all isomers); USA; Short time value; TLV - Adopted Value; Xylene (p- isomers); 150 ppm; USA; Short time value; TLV - Adopted Value)
Netherlands	Grenswaarde TGG 8H (mg/m ³)	210 mg/m ³ (Xyleen (o-,m- en p-isomeren); Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 8H (ppm)	48 ppm (Xyleen (o-,m- en p-isomeren); Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 15MIN (mg/m ³)	442 mg/m ³ (Xyleen (o-,m- en p-isomeren); Netherlands; Short time value; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 15MIN (ppm)	100 ppm (Xyleen (o-,m- en p-isomeren); Netherlands; Short time value; Public occupational exposure limit value)
United Kingdom	WEL TWA (mg/m ³)	220 mg/m ³ Xylene, o-,m-,p- or mixed isomers; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL TWA (ppm)	50 ppm Xylene, o-,m-,p- or mixed isomers; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (mg/m ³)	441 mg/m ³ Xylene, o-,m-,p- or mixed isomers; United Kingdom; Short time value; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (ppm)	100 ppm Xylene, o-,m-,p- or mixed isomers; United Kingdom; Short time value; Workplace exposure limit (EH40/2005)
methanol (67-56-1)		
EU	IOELV TWA (mg/m ³)	260 mg/m ³ (Methanol; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value)

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methanol (67-56-1)		
EU	IOELV TWA (ppm)	200 ppm (Methanol; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value)
Belgium	Limit value (mg/m ³)	266 mg/m ³ (Alcool méthylique; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Limit value (ppm)	200 ppm (Alcool méthylique; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Short time value (mg/m ³)	333 mg/m ³ (Alcool méthylique; Belgium; Short time value)
Belgium	Short time value (ppm)	250 ppm (Alcool méthylique; Belgium; Short time value)
France	VLE (mg/m ³)	1300 mg/m ³ (Methanol; France; Short time value; VL: Valeur non réglementaire indicative)
France	VLE (ppm)	1000 ppm (Methanol; France; Short time value; VL: Valeur non réglementaire indicative)
France	VME (mg/m ³)	260 mg/m ³ (Methanol; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
France	VME (ppm)	200 ppm (Methanol; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	200 ppm (Methanol; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
Italy - Portugal - USA ACGIH	ACGIH STEL (ppm)	250 ppm (Methanol; USA; Short time value; TLV - Adopted Value)
Netherlands	Grenswaarde TGG 8H (mg/m ³)	133 mg/m ³ (Methanol; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 8H (ppm)	100 ppm (Methanol; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
United Kingdom	WEL TWA (mg/m ³)	266 mg/m ³ Methanol; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL TWA (ppm)	200 ppm Methanol; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (mg/m ³)	333 mg/m ³ Methanol; United Kingdom; Short time value; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (ppm)	250 ppm Methanol; United Kingdom; Short time value; Workplace exposure limit (EH40/2005)

8.2. Exposure controls

Appropriate engineering controls

: Either local exhaust or general room ventilation is usually required.

Personal protective equipment

: Avoid all unnecessary exposure. Gloves. Protective clothing. Protective goggles. Safety glasses.



Hand protection

: Wear chemically resistant protective gloves. Wear suitable gloves resistant to chemical penetration.

Eye protection

: Chemical goggles or safety glasses. Safety glasses.

Skin and body protection

: Wear chemically protective gloves, lab coat or apron to prevent prolonged or repeated skin contact.

Respiratory protection

: Where exposure through inhalation may occur from use, respiratory protection equipment is recommended.

Other information

: Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state

: Liquid

Color

: Colorless.

Odor

: characteristic.

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pH	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Highly flammable liquid and vapor
Relative density	: No data available
Solubility	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosion limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Highly flammable liquid and vapor. May form flammable/explosive vapor-air mixture.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Open flame.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

May release flammable gases.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Toxic if swallowed. Dermal: Toxic in contact with skin.

Custom EPA VOC Mix	
ATE CLP (oral)	100.2 mg/kg body weight
ATE CLP (dermal)	300.601 mg/kg body weight
chlorobenzene (108-90-7)	
LD50 oral rat	> 1427 mg/kg (Rat; Equivalent or similar to OECD 401; Experimental value; >2000 mg/kg bodyweight; Rat)
LD50 dermal rat	> 2000 mg/kg (Rat; Literature study)
LD50 dermal rabbit	> 2200 mg/kg (Rabbit; Literature study)
LC50 inhalation rat (mg/l)	17 mg/l/4h (Rat)
LC50 inhalation rat (ppm)	3630 ppm/4h (Rat)
ATE CLP (gases)	3630 ppmV/4h
ATE CLP (vapors)	17 mg/l/4h
ATE CLP (dust, mist)	1.5 mg/l/4h
1,2-dichlorobenzene (95-50-1)	
LD50 oral rat	500 mg/kg (Rat)
LD50 dermal rabbit	> 10000 mg/kg (Rabbit)
LC50 inhalation rat (mg/l)	9.5 mg/l/4h (Rat)
ATE CLP (oral)	500 mg/kg body weight
ATE CLP (vapors)	9.5 mg/l/4h
ATE CLP (dust, mist)	9.5 mg/l/4h
ethylbenzene (100-41-4)	
LD50 oral rat	3500 mg/kg (Rat; Other; Experimental value)
LD50 dermal rabbit	15415 mg/kg (Rabbit; Literature study; Other; 15432 mg/kg; Rabbit; Experimental value)
LC50 inhalation rat (mg/l)	17.8 mg/l/4h (Rat; Literature study)

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ethylbenzene (100-41-4)	
LC50 inhalation rat (ppm)	4000 ppm/4h (Rat; Literature study)
ATE CLP (oral)	3500 mg/kg body weight
ATE CLP (dermal)	15415 mg/kg body weight
ATE CLP (gases)	4000 ppmV/4h
ATE CLP (vapors)	17.8 mg/l/4h
ATE CLP (dust, mist)	1.5 mg/l/4h
styrene (100-42-5)	
LD50 oral rat	5000 mg/kg (Rat; Literature study; >6000 mg/kg bodyweight; Rat; Weight of evidence)
LD50 dermal rat	2820 mg/kg (Rat; Literature study; OECD 402: Acute Dermal Toxicity; >2000 mg/kg bodyweight; Rat; Experimental value)
LD50 dermal rabbit	5010 mg/kg (Rabbit; Literature study)
LC50 inhalation rat (mg/l)	12 mg/l/4h (Rat; Literature study)
LC50 inhalation rat (ppm)	2770 ppm/4h (Rat; Literature study)
ATE CLP (oral)	5000 mg/kg body weight
ATE CLP (dermal)	2820 mg/kg body weight
ATE CLP (gases)	2770 ppmV/4h
ATE CLP (vapors)	12 mg/l/4h
ATE CLP (dust, mist)	1.5 mg/l/4h
tetrachloroethylene (127-18-4)	
LD50 oral rat	> 2000 mg/kg (Rat; Equivalent or similar to OECD 401; Literature study; 3835 mg/kg bodyweight; Rat; Experimental value)
LD50 dermal rabbit	> 3000 mg/kg (Rabbit; Literature study; >10000 mg/kg bodyweight; Rabbit; Experimental value)
LC50 inhalation rat (mg/l)	27.58 mg/l/4h (Rat; Literature study)
LC50 inhalation rat (ppm)	3786 ppm/4h (Rat; Experimental value)
ATE CLP (gases)	3786 ppmV/4h
ATE CLP (vapors)	27.58 mg/l/4h
ATE CLP (dust, mist)	27.58 mg/l/4h
toluene (108-88-3)	
LD50 oral rat	> 2000 mg/kg (Rat; Equivalent or similar to OECD 401; Literature study; 5580 mg/kg bodyweight; Rat; Experimental value)
LD50 dermal rabbit	12223 mg/kg (Rabbit; Literature study; Other; >5000 mg/kg bodyweight; Rabbit; Experimental value)
LC50 inhalation rat (mg/l)	> 20 mg/l/4h (Rat; Literature study)
ATE CLP (dermal)	12223 mg/kg body weight
o-xylene (95-47-6)	
LD50 oral rat	3608 mg/kg (Rat)
ATE CLP (oral)	3608 mg/kg body weight
ATE CLP (dermal)	1100 mg/kg body weight
ATE CLP (gases)	4500 ppmV/4h
ATE CLP (vapors)	11 mg/l/4h
ATE CLP (dust, mist)	1.5 mg/l/4h
p-xylene (106-42-3)	
LD50 oral rat	4030 mg/kg (Rat)
LC50 inhalation rat (mg/l)	20 mg/l/4h (Rat)
LC50 inhalation rat (ppm)	4740 ppm/4h (Rat)
ATE CLP (oral)	4030 mg/kg body weight
ATE CLP (dermal)	1100 mg/kg body weight
ATE CLP (gases)	4740 ppmV/4h
ATE CLP (vapors)	20 mg/l/4h
ATE CLP (dust, mist)	1.5 mg/l/4h
methanol (67-56-1)	
LD50 oral rat	> 5000 mg/kg (Rat; BASF test; Literature study; 1187-2769 mg/kg bodyweight; Rat; Weight of evidence)
LD50 dermal rabbit	15800 mg/kg (Rabbit; Literature study)
LC50 inhalation rat (mg/l)	85 mg/l/4h (Rat; Literature study)
LC50 inhalation rat (ppm)	64000 ppm/4h (Rat; Literature study)
ATE CLP (oral)	100 mg/kg body weight

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methanol (67-56-1)	
ATE CLP (dermal)	300 mg/kg body weight
ATE CLP (gases)	700 ppmV/4h
ATE CLP (vapors)	3 mg/l/4h
ATE CLP (dust, mist)	0.5 mg/l/4h

Skin corrosion/irritation	: Not classified Based on available data, the classification criteria are not met
Serious eye damage/irritation	: Not classified Based on available data, the classification criteria are not met
Respiratory or skin sensitization	: Not classified Based on available data, the classification criteria are not met
Germ cell mutagenicity	: Not classified Based on available data, the classification criteria are not met
Carcinogenicity	: Not classified Based on available data, the classification criteria are not met May cause cancer
Reproductive toxicity	: Not classified Based on available data, the classification criteria are not met
Specific target organ toxicity – single exposure	: Causes damage to organs.
Specific target organ toxicity – repeated exposure	: Not classified Based on available data, the classification criteria are not met
Aspiration hazard	: Not classified Based on available data, the classification criteria are not met
Potential Adverse human health effects and symptoms	: Toxic if swallowed. Toxic in contact with skin.

SECTION 12: Ecological information

12.1. Toxicity

chlorobenzene (108-90-7)	
LC50 fish 2	4.7 mg/l (LC50; 96 h)
EC50 Daphnia 2	0.59 mg/l (EC50; OECD 202: Daphnia sp. Acute Immobilisation Test; 48 h; Daphnia magna; Static system; Fresh water; Experimental value)

1,2-dichlorobenzene (95-50-1)	
LC50 fish 1	1.58 mg/l (LC50; 96 h)
EC50 Daphnia 2	0.74 mg/l (EC50; 48 h)

ethylbenzene (100-41-4)	
LC50 fish 2	4.2 mg/l (LC50; OECD 203: Fish, Acute Toxicity Test; 96 h; Salmo gairdneri; Semi-static system; Fresh water; Experimental value)

tetrachloroethylene (127-18-4)	
EC50 Daphnia 1	8.5 mg/l (EC50; ASTM; 48 h; Daphnia magna; Static system; Fresh water; Experimental value)
Threshold limit algae 2	3.64 mg/l (EC50; Other; 72 h; Chlamydomonas angulosa; Fresh water)

o-xylene (95-47-6)	
EC50 other aquatic organisms 1	4.7 mg/l (72 h; Selenastrum capricornutum; Growth)
LC50 fish 2	8.05 mg/l (LC50; 96 h)
EC50 Daphnia 2	3.2 mg/l (EC50; 48 h)

p-xylene (106-42-3)	
LC50 fish 1	2.6 mg/l (LC50; 96 h)
EC50 Daphnia 2	1.4 mg/l (EC50; 48 h)

methanol (67-56-1)	
LC50 fish 1	15400 mg/l (LC50; EPA 660/3 - 75/009; 96 h; Lepomis macrochirus; Flow-through system; Fresh water; Experimental value)
EC50 Daphnia 1	> 10000 mg/l (EC50; DIN 38412-11; 48 h; Daphnia magna; Static system; Fresh water; Experimental value)
LC50 fish 2	10800 mg/l (LC50; 96 h; Salmo gairdneri)

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12.2. Persistence and degradability

Custom EPA VOC Mix	
Persistence and degradability	Not established.
chlorobenzene (108-90-7)	
Persistence and degradability	Not readily biodegradable in water. Non degradable in the soil. Low potential for adsorption in soil.
Biochemical oxygen demand (BOD)	0.03 g O ₂ /g substance
Chemical oxygen demand (COD)	0.41 g O ₂ /g substance
ThOD	2.06 g O ₂ /g substance
BOD (% of ThOD)	0.0145
1,2-dichlorobenzene (95-50-1)	
Persistence and degradability	Not readily biodegradable in water. Forming sediments in water. Non degradable in the soil. Adsorbs into the soil.
BOD (% of ThOD)	0
ethylbenzene (100-41-4)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Low potential for adsorption in soil.
Biochemical oxygen demand (BOD)	1.44 g O ₂ /g substance (20d.)
Chemical oxygen demand (COD)	2.1 g O ₂ /g substance
ThOD	3.17 g O ₂ /g substance
BOD (% of ThOD)	45.4 (20 days)
styrene (100-42-5)	
Persistence and degradability	Readily biodegradable in water. Non degradable in the soil. Low potential for adsorption in soil. Photodegradation in the air.
Chemical oxygen demand (COD)	2.8 g O ₂ /g substance
ThOD	3.07 g O ₂ /g substance
BOD (% of ThOD)	0.42
tetrachloroethylene (127-18-4)	
Persistence and degradability	Not readily biodegradable in water. Low potential for adsorption in soil.
Biochemical oxygen demand (BOD)	0.06 g O ₂ /g substance
ThOD	0.39 g O ₂ /g substance
BOD (% of ThOD)	0.15
toluene (108-88-3)	
Persistence and degradability	Readily biodegradable in water. easily degradable in the soil.
Biochemical oxygen demand (BOD)	2.15 g O ₂ /g substance
Chemical oxygen demand (COD)	2.52 g O ₂ /g substance
ThOD	3.13 g O ₂ /g substance
BOD (% of ThOD)	0.69
o-xylene (95-47-6)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Photodegradation in the air.
Biochemical oxygen demand (BOD)	1.64 g O ₂ /g substance
Chemical oxygen demand (COD)	2.91 g O ₂ /g substance
ThOD	3.125 g O ₂ /g substance
p-xylene (106-42-3)	
Persistence and degradability	Readily biodegradable in water. Forming sediments in water. Biodegradable in the soil. Adsorbs into the soil. Photolysis in the air.
Biochemical oxygen demand (BOD)	1.4 g O ₂ /g substance
Chemical oxygen demand (COD)	2.56 g O ₂ /g substance
ThOD	3.125 g O ₂ /g substance
methanol (67-56-1)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Highly mobile in soil.
Biochemical oxygen demand (BOD)	0.6 - 1.12 g O ₂ /g substance
Chemical oxygen demand (COD)	1.42 g O ₂ /g substance
ThOD	1.5 g O ₂ /g substance
BOD (% of ThOD)	0.8 (Literature study)

12.3. Bioaccumulative potential

Custom EPA VOC Mix	
Bioaccumulative potential	Not established.

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chlorobenzene (108-90-7)	
BCF fish 1	447 (BCF)
BCF fish 2	3.9 - 40 (BCF)
Log Pow	2.8 - 2.98
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
1,2-dichlorobenzene (95-50-1)	
BCF fish 1	90 - 260 (BCF)
BCF fish 2	270 - 560 (BCF)
BCF other aquatic organisms 1	14791 (BCF)
BCF other aquatic organisms 2	28840 (BCF)
Log Pow	3.43 (Experimental value)
Bioaccumulative potential	Potential for bioaccumulation (500 ≤ BCF ≤ 5000).
ethylbenzene (100-41-4)	
BCF fish 1	1 (BCF; Other; 6 weeks; Oncorhynchus kisutch; Flow-through system; Salt water; Literature study)
BCF fish 2	15 - 79 (BCF)
BCF other aquatic organisms 1	4.68 (BCF)
Log Pow	3.15 (Experimental value; 3.6; Experimental value; EU Method A.8: Partition Coefficient; 20 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
styrene (100-42-5)	
BCF fish 1	35.5 (BCF)
Log Pow	2.96 (Experimental value; OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method; 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
tetrachloroethylene (127-18-4)	
BCF fish 2	25.8 - 77.1 (BCF; 8 weeks)
Log Pow	3.4 (Experimental value; 2.53; Experimental value; Equivalent or similar to OECD 107; 23 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
toluene (108-88-3)	
BCF fish 2	90 (BCF; 72 h; Leuciscus idus; Static system; Fresh water)
Log Pow	2.73 (Experimental value; Other; 20 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
o-xylene (95-47-6)	
BCF fish 1	21.4 (BCF)
BCF fish 2	14.1 (BCF)
BCF other aquatic organisms 1	219 (BCF)
Log Pow	3.12 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
p-xylene (106-42-3)	
BCF fish 1	15 (BCF)
BCF fish 2	23 (BCF; 240 h)
Log Pow	3.15 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
methanol (67-56-1)	
BCF fish 1	< 10 (BCF; 72 h; Leuciscus idus)
Log Pow	-0.77 (Experimental value; Other)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
12.4. Mobility in soil	
chlorobenzene (108-90-7)	
Surface tension	0.033 N/m (25 °C)
Log Koc	Koc,PCKOCWIN v1.66; 268; Calculated value; log Koc; PCKOCWIN v1.66; 2.42; Calculated value
1,2-dichlorobenzene (95-50-1)	
Surface tension	0.037 N/m (20 °C)
ethylbenzene (100-41-4)	
Surface tension	0.029 N/m

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ethylbenzene (100-41-4)	
Log Koc	log Koc,PCKOCWIN v1.66; 2.71; Calculated value; Koc; PCKOCWIN v1.66; 517.8; Calculated value
styrene (100-42-5)	
Surface tension	0.032 N/m (19 °C)
Log Koc	Koc,352; Estimated value; log Koc; 2.55; Estimated value
tetrachloroethylene (127-18-4)	
Surface tension	0.0313 N/m (20 °C)
Log Koc	Koc,141; Experimental value; log Koc; 2.15; Experimental value
toluene (108-88-3)	
Surface tension	0.03 N/m (20 °C)
o-xylene (95-47-6)	
Surface tension	0.003 N/m (25 °C)
Ecology - soil	May be harmful to plant growth, blooming and fruit formation.
p-xylene (106-42-3)	
Ecology - soil	May be harmful to plant growth, blooming and fruit formation.
methanol (67-56-1)	
Surface tension	0.023 N/m (20 °C)
Log Koc	Koc,PCKOCWIN v1.66; 1; Calculated value

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

Additional information : Avoid release to the environment

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
Additional information : Handle empty containers with care because residual vapors are flammable.
Ecology - waste materials : Avoid release to the environment. Hazardous waste due to toxicity.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

UN-No. (ADR) : 1992
UN-No. (IATA) : 1992
UN-No. (IMDG) : 1992
UN-No. (ADN) : 1992

14.2. UN proper shipping name

Proper Shipping Name (ADR) : FLAMMABLE LIQUID, TOXIC, N.O.S.
Proper Shipping Name (IATA) : Flammable liquid, toxic, n.o.s.
Proper Shipping Name (IMDG) : FLAMMABLE LIQUID, TOXIC, N.O.S.
Proper Shipping Name (ADN) : FLAMMABLE LIQUID, TOXIC, N.O.S.
Transport document description (ADR) : UN 1992 FLAMMABLE LIQUID, TOXIC, N.O.S., 3 (6.1), II, (D/E)

14.3. Packing group

Class (ADR) : 3
Classification code (ADR) : FT1
Class (IATA) : 3
Class (IMDG) : 3
Class (ADN) : 3
Classification code (ADN) : FT1
Subsidiary risks (ADR) : 6.1
Subsidiary risks (IMDG) : 6.1

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Hazard labels (ADR) : 3, 6.1



Hazard labels (IATA) : 3, 6.1



Hazard labels (IMDG) : 3, 6.1



Hazard labels (ADN) : 3, 6.1



14.4. Packing group

Packing group (ADR) : II
Packing group (IATA) : II
Packing group (IMDG) : II
Packing group (ADN) : II

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

14.6.1. Overland transport

Hazard identification number (Kemler No.) : 336
Classification code (ADR) : FT1
Orange plates :



Special provision (ADR) : 274
Transport category (ADR) : 2
Tunnel restriction code (ADR) : D/E
Limited quantities (ADR) : 1I
Excepted quantities (ADR) : E2

14.6.2. Transport by sea

Special provision (IMDG) : 274
Limited quantities (IMDG) : 1 L
Excepted quantities (IMDG) : E2
Packing instructions (IMDG) : P001
IBC packing instructions (IMDG) : IBC02
Tank instructions (IMDG) : T7
Tank special provisions (IMDG) : TP2, TP13
EmS-No. (Fire) : F-E
EmS-No. (Spillage) : S-D
Stowage category (IMDG) : B
Properties and observations (IMDG) : Flammable toxic liquid which is not specified by name in this class or, on account of its characteristics, in some other class. Toxic if swallowed, by skin contact or by inhalation.

14.6.3. Air transport

CAO packing instructions (IATA) : 364
CAO max net quantity (IATA) : 60L

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PCA packing instructions (IATA)	: 352
PCA Limited quantities (IATA)	: Y341
PCA limited quantity max net quantity (IATA)	: 1L
PCA max net quantity (IATA)	: 1L
PCA Excepted quantities (IATA)	: E2
Special provision (IATA)	: A3
ERG code (IATA)	: 3HP

14.6.4. Inland waterway transport

Special provision (ADN)	: 274, 802
Limited quantities (ADN)	: 1 L
Excepted quantities (ADN)	: E2
Carriage permitted (ADN)	: T
Equipment required (ADN)	: PP, EP, EX, TOX, A
Ventilation (ADN)	: VE01, VE02
Number of blue cones/lights (ADN)	: 2
Carriage prohibited (ADN)	: No

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions
Contains no REACH candidate substance
Contains no REACH Annex XIV substances.

15.1.2. National regulations

Germany

Water hazard class (WGK) : 2 - hazardous to water

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information : None.

PHV SDS EU

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