

TCLP Volatiles 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 : TCLP Volatiles Mix
Product code : AL0-101651
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

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. 1	H224
Acute Tox. 3 (Oral)	H301
Acute Tox. 3 (Dermal)	H311
Muta. 1B	H340
Carc. 1A	H350
STOT SE 1	H370
Ozone 1	H420

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

Carc.Cat.1; R45
Muta.Cat.2; R46
F+; R12
T; R23/24/25
T; R39/23/24/25
N; R59

Full text of R-phrases: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

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2.2. Label elements

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

Hazard pictograms (CLP) :



GHS02

GHS06

GHS08

Signal word (CLP) :

Danger

Hazard statements (CLP) :

H224 - Extremely flammable liquid and vapor
H301+H311 - Toxic if swallowed or in contact with skin
H340 - May cause genetic defects
H350 - May cause cancer
H370 - Causes damage to organs
H420 - Harms public health and the environment by destroying ozone in the upper atmosphere

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+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
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	98.9	Flam. Liq. 2, H225 Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation), H331 STOT SE 1, H370
benzene (Component)	(CAS No) 71-43-2 (EC-No.) 200-753-7 (EC index no) 601-020-00-8	0.1	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Muta. 1B, H340 Carc. 1A, H350 STOT RE 1, H372 Asp. Tox. 1, H304
2-Butanone (Component) substance with a Community workplace exposure limit	(CAS No) 78-93-3 (EC-No.) 201-159-0 (EC index no) 606-002-00-3	0.1	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336
carbon tetrachloride (Component)	(CAS No) 56-23-5 (EC-No.) 200-262-8 (EC index no) 602-008-00-5	0.1	Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation), H331 Carc. 2, H351 STOT RE 1, H372 Aquatic Chronic 3, H412 Ozone 1, H420
chlorobenzene (Component)	(CAS No) 108-90-7 (EC-No.) 203-628-5 (EC index no) 602-033-00-1	0.1	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation), H332 Aquatic Acute 1, H400 Aquatic Chronic 2, H411

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Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
chloroform (Component)	(CAS No) 67-66-3 (EC-No.) 200-663-8 (EC index no) 602-006-00-4	0.1	Acute Tox. 4 (Oral), H302 Acute Tox. 3 (Inhalation), H331 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Carc. 2, H351 Repr. 2, H361d STOT RE 1, H372
1,4-dichlorobenzene (Component)	(CAS No) 106-46-7 (EC-No.) 203-400-5 (EC index no) 602-035-00-2	0.1	Eye Irrit. 2, H319 Carc. 2, H351 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
1,2-dichloroethane (Component) substance listed as REACH Candidate substance listed in REACH Annex XIV (1,2-dichloroethane (EDC))	(CAS No) 107-06-2 (EC-No.) 203-458-1 (EC index no) 602-012-00-7	0.1	Flam. Liq. 2, H225 Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Carc. 1B, H350 STOT SE 3, H335
1,1-dichloroethene (Component)	(CAS No) 75-35-4 (EC-No.) 200-864-0 (EC index no) 602-025-00-8	0.1	Flam. Liq. 1, H224 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation), H332 Carc. 2, H351
tetrachloroethylene (Component)	(CAS No) 127-18-4 (EC-No.) 204-825-9 (EC index no) 602-028-00-4	0.1	Carc. 2, H351 Aquatic Chronic 2, H411
trichloroethylene (Component) substance listed as REACH Candidate substance listed in REACH Annex XIV	(CAS No) 79-01-6 (EC-No.) 201-167-4 (EC index no) 602-027-00-9	0.1	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Muta. 2, H341 Carc. 1B, H350 STOT SE 3, H336 Aquatic Chronic 3, H412
vinyl chloride, inhibited (Component)	(CAS No) 75-01-4 (EC-No.) 200-831-0 (EC index no) 602-023-00-7	0.1	Flam. Gas 1, H220 Carc. 1A, H350
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	
carbon tetrachloride (Component)	(CAS No) 56-23-5 (EC-No.) 200-262-8 (EC index no) 602-008-00-5	(0.2 =<C < 1) STOT RE 2, H373 (C >= 1) STOT RE 1, H372	

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 inhalation	: May cause cancer by inhalation.
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	: Extremely flammable liquid and vapor.
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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. Take precautionary measures against static discharge. Use only non-sparking tools. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Eliminate all ignition sources if safe to do so.

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 : Ground/bond container and receiving equipment.

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

benzene (71-43-2)		
EU	IOELV TWA (mg/m ³)	3.25 mg/m ³ (Benzene; EU; Time-weighted average exposure limit 8 h; Limit value for occupational exposure)
EU	IOELV TWA (ppm)	1 ppm (Benzene; EU; Time-weighted average exposure limit 8 h; Limit value for occupational exposure)
Belgium	Limit value (mg/m ³)	3.25 mg/m ³ (Benzène; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Limit value (ppm)	1 ppm (Benzène; Belgium; Time-weighted average exposure limit 8 h)
France	VME (mg/m ³)	3.25 mg/m ³ (Benzène; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
France	VME (ppm)	1 ppm (Benzène; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	0.5 ppm (Benzene; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)

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benzene (71-43-2)		
Italy - Portugal - USA ACGIH	ACGIH STEL (ppm)	2.5 ppm (Benzene; USA; Short time value; TLV - Adopted Value)
USA NIOSH	NIOSH REL (TWA) (ppm)	0.1 ppm
USA NIOSH	NIOSH REL (STEL) (ppm)	1 ppm
USA OSHA	OSHA PEL (TWA) (ppm)	10 ppm
USA OSHA	OSHA PEL (Ceiling) (ppm)	25 ppm
Netherlands	Grenswaarde TGG 8H (mg/m ³)	3.25 mg/m ³ (Benzene; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 8H (ppm)	1 ppm (Benzene; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
United Kingdom	WEL TWA (mg/m ³)	3.25 mg/m ³ Benzene; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL TWA (ppm)	1 ppm Benzene; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
2-Butanone (78-93-3)		
EU	IOELV TWA (mg/m ³)	600 mg/m ³ (Butanone; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value)
EU	IOELV TWA (ppm)	200 ppm (Butanone; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value)
EU	IOELV STEL (mg/m ³)	900 mg/m ³ (Butanone; EU; Short time value; Indicative occupational exposure limit value)
EU	IOELV STEL (ppm)	300 ppm (Butanone; EU; Short time value; Indicative occupational exposure limit value)
Belgium	Limit value (mg/m ³)	600 mg/m ³ (2-Butanone; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Limit value (ppm)	200 ppm (2-Butanone; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Short time value (mg/m ³)	900 mg/m ³ (2-Butanone; Belgium; Short time value)
Belgium	Short time value (ppm)	300 ppm (2-Butanone; Belgium; Short time value)
France	VLE (mg/m ³)	900 mg/m ³ (Méthyléthylcétone; France; Short time value; VRC: Valeur réglementaire contraignante)
France	VLE (ppm)	300 ppm (Méthyléthylcétone; France; Short time value; VRC: Valeur réglementaire contraignante)
France	VME (mg/m ³)	600 mg/m ³ (Méthyléthylcétone; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
France	VME (ppm)	200 ppm (Méthyléthylcétone; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	200 ppm (Methyl ethyl ketone (MEK); USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
Italy - Portugal - USA ACGIH	ACGIH STEL (ppm)	300 ppm (Methyl ethyl ketone (MEK); USA; Short time value; TLV - Adopted Value)
Netherlands	Grenswaarde TGG 8H (mg/m ³)	590 mg/m ³ (2-Butanon; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 8H (ppm)	197 ppm (2-Butanon; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 15MIN (mg/m ³)	900 mg/m ³ (2-Butanon; Netherlands; Short time value; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 15MIN (ppm)	300 ppm (2-Butanon; Netherlands; Short time value; Public occupational exposure limit value)
United Kingdom	WEL TWA (mg/m ³)	600 mg/m ³ Butan-2-one (methyl ethyl ketone); United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL TWA (ppm)	200 ppm Butan-2-one (methyl ethyl ketone); United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)

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2-Butanone (78-93-3)		
United Kingdom	WEL STEL (mg/m ³)	899 mg/m ³ Butan-2-one (methyl ethyl ketone); United Kingdom; Short time value; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (ppm)	300 ppm Butan-2-one (methyl ethyl ketone); United Kingdom; Short time value; Workplace exposure limit (EH40/2005)
carbon tetrachloride (56-23-5)		
Belgium	Limit value (mg/m ³)	31 mg/m ³ (Tétrachlorométhane; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Limit value (ppm)	5 ppm (Tétrachlorométhane; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Short time value (mg/m ³)	64 mg/m ³ (Tétrachlorométhane; Belgium; Short time value)
Belgium	Short time value (ppm)	10 ppm (Tétrachlorométhane; Belgium; Short time value)
France	VLE (mg/m ³)	60 mg/m ³ (Tétrachlorométhane; France; Short time value; VL: Valeur non réglementaire indicative)
France	VLE (ppm)	10 ppm (Tétrachlorométhane; France; Short time value; VL: Valeur non réglementaire indicative)
France	VME (mg/m ³)	12 mg/m ³ (Tétrachlorométhane; France; Time-weighted average exposure limit 8 h; VL: Valeur non réglementaire indicative)
France	VME (ppm)	2 ppm (Tétrachlorométhane; France; Time-weighted average exposure limit 8 h; VL: Valeur non réglementaire indicative)
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	5 ppm (Carbon tetrachloride; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
Italy - Portugal - USA ACGIH	ACGIH STEL (ppm)	10 ppm (Carbon tetrachloride; USA; Short time value; TLV - Adopted Value)
United Kingdom	WEL TWA (mg/m ³)	13 mg/m ³ Carbon tetrachloride; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL TWA (ppm)	2 ppm Carbon tetrachloride; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
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

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chlorobenzene (108-90-7)		
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)
chloroform (67-66-3)		
EU	IOELV TWA (mg/m ³)	10 mg/m ³ (Chloroform; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value)
EU	IOELV TWA (ppm)	2 ppm (Chloroform; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value)
Belgium	Limit value (mg/m ³)	10 mg/m ³ (Chloroforme; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Limit value (ppm)	2 ppm (Chloroforme; Belgium; Time-weighted average exposure limit 8 h)
France	VLE (mg/m ³)	250 mg/m ³ (Trichlorométhane; France; Short time value; VL: Valeur non réglementaire indicative)
France	VLE (ppm)	50 ppm (Trichlorométhane; France; Short time value; VL: Valeur non réglementaire indicative)
France	VME (mg/m ³)	10 mg/m ³ (Trichlorométhane; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
France	VME (ppm)	2 ppm (Trichlorométhane; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	10 ppm (Chloroform; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
Netherlands	Grenswaarde TGG 8H (mg/m ³)	5 mg/m ³ (Chloroform; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 8H (ppm)	1 ppm (Chloroform; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 15MIN (mg/m ³)	25 mg/m ³ (Chloroform; Netherlands; Short time value; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 15MIN (ppm)	5 ppm (Chloroform; Netherlands; Short time value; Public occupational exposure limit value)
United Kingdom	WEL TWA (mg/m ³)	9.9 mg/m ³ Chloroform; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL TWA (ppm)	2 ppm Chloroform; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
1,4-dichlorobenzene (106-46-7)		
EU	IOELV TWA (mg/m ³)	122 mg/m ³ (1,4-Dichlorobenzene; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value)
EU	IOELV TWA (ppm)	20 ppm (1,4-Dichlorobenzene; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value)

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1,4-dichlorobenzene (106-46-7)		
EU	IOELV STEL (mg/m ³)	306 mg/m ³ (1,4-Dichlorobenzene; EU; Short time value; Indicative occupational exposure limit value)
EU	IOELV STEL (ppm)	50 ppm (1,4-Dichlorobenzene; EU; Short time value; Indicative occupational exposure limit value)
Belgium	Limit value (mg/m ³)	61 mg/m ³ (1,4-Dichlorobenzène; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Limit value (ppm)	10 ppm (1,4-Dichlorobenzène; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Short time value (mg/m ³)	306 mg/m ³ (1,4-Dichlorobenzène; Belgium; Short time value)
Belgium	Short time value (ppm)	50 ppm (1,4-Dichlorobenzène; Belgium; Short time value)
France	VLE (mg/m ³)	306 mg/m ³ (1,4-Dichlorobenzène; France; Short time value; VRI: Valeur réglementaire indicative)
France	VLE (ppm)	50 ppm (1,4-Dichlorobenzène; France; Short time value; VRI: Valeur réglementaire indicative)
France	VME (mg/m ³)	4.5 mg/m ³ (1,4-Dichlorobenzène; France; Time-weighted average exposure limit 8 h; VRI: Valeur réglementaire indicative)
France	VME (ppm)	0.75 ppm (1,4-Dichlorobenzène; France; Time-weighted average exposure limit 8 h; VRI: Valeur réglementaire indicative)
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	10 ppm (p-Dichlorobenzene; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
USA OSHA	OSHA PEL (TWA) (mg/m ³)	450 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	75 ppm
USA OSHA	OSHA PEL (STEL) (mg/m ³)	675 mg/m ³
USA OSHA	OSHA PEL (STEL) (ppm)	110 ppm
Netherlands	Grenswaarde TGG 8H (mg/m ³)	150 mg/m ³ (1,4-Dichloorbenzeen; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 8H (ppm)	25 ppm (1,4-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 (1,4-Dichloorbenzeen; Netherlands; Short time value; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 15MIN (ppm)	49 ppm (1,4-Dichloorbenzeen; Netherlands; Short time value; Public occupational exposure limit value)
United Kingdom	WEL TWA (mg/m ³)	153 mg/m ³ 1,4-Dichlorobenzene (para-dichlorobenzene); United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL TWA (ppm)	25 ppm 1,4-Dichlorobenzene (para-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 1,4-Dichlorobenzene (para-dichlorobenzene); United Kingdom; Short time value; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (ppm)	50 ppm 1,4-Dichlorobenzene (para-dichlorobenzene); United Kingdom; Short time value; Workplace exposure limit (EH40/2005)
1,2-dichloroethane (107-06-2)		
Belgium	Limit value (mg/m ³)	41 mg/m ³ (Chlorure d'éthylène; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Limit value (ppm)	10 ppm (Chlorure d'éthylène; Belgium; Time-weighted average exposure limit 8 h)
France	VME (mg/m ³)	40 mg/m ³ (1,2-Dichloroéthane; France; Time-weighted average exposure limit 8 h; VL: Valeur non réglementaire indicative)
France	VME (ppm)	10 ppm (1,2-Dichloroéthane; France; Time-weighted average exposure limit 8 h; VL: Valeur non réglementaire indicative)
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	10 ppm (Ethylene dichloride; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)

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1,2-dichloroethane (107-06-2)		
Netherlands	Grenswaarde TGG 8H (mg/m ³)	7 mg/m ³ (1,2-Dichloorethaan; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 8H (ppm)	1.7 ppm (1,2-Dichloorethaan; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
United Kingdom	WEL TWA (mg/m ³)	21 mg/m ³ 1,2-Dichloroethane (Ethylene dichloride); United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL TWA (ppm)	5 ppm 1,2-Dichloroethane (Ethylene dichloride); United Kingdom; Time-weighted average exposure limit 8 h; 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)
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)
trichloroethylene (79-01-6)		
Belgium	Limit value (mg/m ³)	55 mg/m ³ (Trichloroéthylène; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Limit value (ppm)	10 ppm (Trichloroéthylène; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Short time value (mg/m ³)	137 mg/m ³ (Trichloroéthylène; Belgium; Short time value)
Belgium	Short time value (ppm)	25 ppm (Trichloroéthylène; Belgium; Short time value)
France	VLE (mg/m ³)	1080 mg/m ³ (Trichloroéthylène; France; Short time value; VL: Valeur non réglementaire indicative)
France	VLE (ppm)	200 ppm (Trichloroéthylène; France; Short time value; VL: Valeur non réglementaire indicative)
France	VME (mg/m ³)	405 mg/m ³ (Trichloroéthylène; France; Time-weighted average exposure limit 8 h; VL: Valeur non réglementaire indicative)
France	VME (ppm)	75 ppm (Trichloroéthylène; France; Time-weighted average exposure limit 8 h; VL: Valeur non réglementaire indicative)
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	10 ppm (Trichloroethylene; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)

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trichloroethylene (79-01-6)		
Italy - Portugal - USA ACGIH	ACGIH STEL (ppm)	25 ppm (Trichloroethylene; USA; Short time value; TLV - Adopted Value)
United Kingdom	WEL TWA (mg/m ³)	550 mg/m ³ Trichloroethylene; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL TWA (ppm)	100 ppm Trichloroethylene; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (mg/m ³)	820 mg/m ³ Trichloroethylene; United Kingdom; Short time value; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (ppm)	150 ppm Trichloroethylene; United Kingdom; Short time value; Workplace exposure limit (EH40/2005)
vinyl chloride, inhibited (75-01-4)		
EU	IOELV TWA (mg/m ³)	7.77 mg/m ³ (Vinyl chloride monomer; EU; Time-weighted average exposure limit 8 h; Limit value for occupational exposure)
EU	IOELV TWA (ppm)	3 ppm (Vinyl chloride monomer; EU; Time-weighted average exposure limit 8 h; Limit value for occupational exposure)
Belgium	Limit value (mg/m ³)	7.77 mg/m ³ (Chlorure de vinyle (monomère); Belgium; Time-weighted average exposure limit 8 h)
Belgium	Limit value (ppm)	3 ppm (Chlorure de vinyle (monomère); Belgium; Time-weighted average exposure limit 8 h)
France	VME (mg/m ³)	2.59 mg/m ³ (Chlorure de vinyle; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
France	VME (ppm)	1 ppm (Chlorure de vinyle; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	1 ppm (Vinyl chloride; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
Netherlands	Grenswaarde TGG 8H (mg/m ³)	7.77 mg/m ³ (Vinylchloridemonomeer; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value; monomeer)
Netherlands	Grenswaarde TGG 8H (ppm)	3 ppm (Vinylchloridemonomeer; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value; monomeer)
United Kingdom	WEL TWA (mg/m ³)	7.8 mg/m ³ Vinyl chloride; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL TWA (ppm)	3 ppm Vinyl chloride; United Kingdom; Time-weighted average exposure limit 8 h; 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)
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)

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methanol (67-56-1)		
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.
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)	: Extremely 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

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SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Extremely 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. Sparks. Heat. Overheating. 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.

TCLP Volatiles Mix	
ATE CLP (oral)	101.0101010101 mg/kg body weight
ATE CLP (dermal)	303.0303030303 mg/kg body weight
benzene (71-43-2)	
LD50 oral rat	> 930 mg/kg (Rat; Equivalent or similar to OECD 401; Literature study; > 2000 mg/kg bodyweight; Rat; Experimental value)
LD50 dermal rabbit	> 8240 mg/kg (Rabbit; Experimental value; 21 CFR 191.10; > 9.4; Rabbit)
LC50 inhalation rat (mg/l)	43.767 mg/l/4h (Rat; Experimental value)
LC50 inhalation rat (ppm)	13700 ppm/4h (Rat; Experimental value)
ATE CLP (gases)	13700 ppmV/4h
ATE CLP (vapors)	43.767 mg/l/4h
ATE CLP (dust, mist)	43.767 mg/l/4h
carbon tetrachloride (56-23-5)	
ATE CLP (oral)	100 mg/kg body weight
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
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
chloroform (67-66-3)	
LD50 oral rat	695 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Experimental value; 908 mg/kg bodyweight; Rat; OECD 401: Acute Oral Toxicity; Experimental value; 1117 mg/kg bodyweight; Rat)
LD50 dermal rabbit	> 20000 mg/kg (Rabbit; No reliable data available; >3980 mg/kg bodyweight; Rabbit)
ATE CLP (oral)	695 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
1,4-dichlorobenzene (106-46-7)	
LD50 dermal rat	> 6000 mg/kg (Rat)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit)
LC50 inhalation rat (mg/l)	> 5 mg/l/4h (Rat)

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1,2-dichloroethane (107-06-2)	
LD50 oral rat	770 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Experimental value)
LD50 dermal rabbit	2800 mg/kg (Rabbit; Literature study)
LC50 inhalation rat (mg/l)	7.758 mg/l/4h (Rat; Experimental value)
LC50 inhalation rat (ppm)	1886 ppm/4h (Rat; Experimental value)
ATE CLP (oral)	770 mg/kg body weight
ATE CLP (dermal)	2800 mg/kg body weight
ATE CLP (gases)	1886 ppmV/4h
ATE CLP (vapors)	7.758 mg/l/4h
ATE CLP (dust, mist)	7.758 mg/l/4h
1,1-dichloroethene (75-35-4)	
LD50 oral rat	200 - 1500 mg/kg (Rat)
LC50 inhalation rat (mg/l)	25.6 mg/l/4h (Rat)
LC50 inhalation rat (ppm)	6350 ppm/4h (Rat)
ATE CLP (oral)	200 mg/kg body weight
ATE CLP (gases)	6350 ppmV/4h
ATE CLP (vapors)	11 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; Equivalent or similar to OECD 401; Experimental value; 3005 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
trichloroethylene (79-01-6)	
LD50 oral rat	4920 mg/kg (Rat)
LD50 dermal rabbit	> 20000 mg/kg (Rabbit)
LC50 inhalation rat (mg/l)	66 mg/l/4h (Rat)
LC50 inhalation rat (ppm)	12000 ppm/4h (Rat)
ATE CLP (oral)	4920 mg/kg body weight
ATE CLP (gases)	12000 ppmV/4h
ATE CLP (vapors)	66 mg/l/4h
ATE CLP (dust, mist)	66 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
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	: May cause genetic defects.
Carcinogenicity	: May cause cancer. May cause cancer

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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

Ecology - air : Dangerous for the ozone layer.

benzene (71-43-2)	
LC50 fish 1	5.3 mg/l (LC50; 96 h; Salmo gairdneri)
EC50 Daphnia 2	10 mg/l (EC50; OECD 202: Daphnia sp. Acute Immobilisation Test; 48 h; Daphnia magna)
Threshold limit algae 1	100 mg/l (ErC50; OECD 201: Alga, Growth Inhibition Test; 72 h; Pseudokirchneriella subcapitata; Static system; Fresh water; Experimental value)
2-Butanone (78-93-3)	
EC50 Daphnia 1	308 mg/l (EC50; OECD 202: Daphnia sp. Acute Immobilisation Test; 48 h; Daphnia magna; Static system; Fresh water; Experimental value)
LC50 fish 2	2993 mg/l (LC50; OECD 203: Fish, Acute Toxicity Test; 96 h; Pimephales promelas; Static system; Fresh water; Experimental value)
carbon tetrachloride (56-23-5)	
LC50 fish 1	27 mg/l (LC50; 96 h; Lepomis macrochirus)
EC50 Daphnia 1	29 mg/l (EC50; 48 h)
Threshold limit algae 1	> 600 mg/l (EC0; 168 h)
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)
chloroform (67-66-3)	
LC50 fish 1	18.2 ppm (LC50; ASTM; 96 h; Oncorhynchus mykiss; Flow-through system; Fresh water; Experimental value)
EC50 Daphnia 2	152.5 mg/l (EC50; US EPA; 48 h; Daphnia magna; Static system; Salt water; Experimental value)
1,4-dichlorobenzene (106-46-7)	
LC50 fish 2	1.12 mg/l (LC50; 96 h; Salmo gairdneri)
EC50 Daphnia 2	0.7 mg/l (EC50; 48 h)
1,2-dichloroethane (107-06-2)	
EC50 Daphnia 1	155 - 220 mg/l (EC50; 48 h)
LC50 fish 2	225 mg/l (LC50; 96 h; Salmo gairdneri)
1,1-dichloroethene (75-35-4)	
EC50 Daphnia 1	11.6 - 79 mg/l (EC50; 48 h)
LC50 fish 2	74 - 220 mg/l (LC50; 96 h; Lepomis macrochirus)
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)
trichloroethylene (79-01-6)	
LC50 fish 1	40.7 mg/l (LC50; 96 h; Pimephales promelas)
EC50 Daphnia 2	20.8 mg/l (EC50; 48 h)
vinyl chloride, inhibited (75-01-4)	
EC50 Daphnia 1	119 mg/l (LC50; ECOSAR; 48 h; Daphnia sp.; Fresh water)
LC50 fish 2	210 mg/l (LC50; OECD 203: Fish, Acute Toxicity Test; 96 h; Brachydanio rerio; Semi-static system; Fresh water; Experimental value)
Threshold limit algae 1	77 mg/l (EC50; ECOSAR; 96 h; Algae; Fresh water)

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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)

12.2. Persistence and degradability

TCLP Volatiles Mix	
Persistence and degradability	Not established.

benzene (71-43-2)	
Persistence and degradability	Readily biodegradable in water. Ozonation in water. Forming sediments in water. Biodegradable in the soil. Low potential for adsorption in soil. Photolysis in the air.
Biochemical oxygen demand (BOD)	2.18 g O ₂ /g substance
Chemical oxygen demand (COD)	2.15 g O ₂ /g substance
ThOD	3.1 g O ₂ /g substance
BOD (% of ThOD)	0.7

2-Butanone (78-93-3)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Biodegradable in the soil under anaerobic conditions.
Biochemical oxygen demand (BOD)	2.03 g O ₂ /g substance
Chemical oxygen demand (COD)	2.31 g O ₂ /g substance
ThOD	2.44 g O ₂ /g substance
BOD (% of ThOD)	> 0.5 (5 days; Literature study)

carbon tetrachloride (56-23-5)	
Persistence and degradability	Not readily biodegradable in water. No (test)data on mobility of the substance available.
Biochemical oxygen demand (BOD)	0 g O ₂ /g substance
Chemical oxygen demand (COD)	0.001 g O ₂ /g substance
ThOD	0.21 g O ₂ /g substance
BOD (% of ThOD)	0

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

chloroform (67-66-3)	
Persistence and degradability	Not readily biodegradable in water. Non degradable in the soil. Low potential for adsorption in soil.
ThOD	0.33 - 1.35 g O ₂ /g substance
BOD (% of ThOD)	0.015 - 0.06

1,4-dichlorobenzene (106-46-7)	
Persistence and degradability	Readily biodegradable in water. Non degradable in the soil. Adsorbs into the soil.
ThOD	1.52 g O ₂ /g substance
BOD (% of ThOD)	0.65 (Calculated value)

1,2-dichloroethane (107-06-2)	
Persistence and degradability	Not readily biodegradable in water. Highly mobile in soil.
Biochemical oxygen demand (BOD)	0.0014 g O ₂ /g substance
Chemical oxygen demand (COD)	1.025 g O ₂ /g substance
ThOD	0.98 g O ₂ /g substance
BOD (% of ThOD)	0.001 (Calculated value)

1,1-dichloroethene (75-35-4)	
Persistence and degradability	Not readily biodegradable in water.

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

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trichloroethylene (79-01-6)	
Persistence and degradability	Not readily biodegradable in water. Non degradable in the soil. Biodegradable in the soil under anaerobic conditions.
vinyl chloride, inhibited (75-01-4)	
Persistence and degradability	Not readily biodegradable in water. Biodegradable in water. Biodegradable in the soil. Low potential for adsorption in soil.
Biochemical oxygen demand (BOD)	0 g O ₂ /g substance
BOD (% of ThOD)	0
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	
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Bioaccumulative potential	Not established.
benzene (71-43-2)	
BCF fish 1	19 (BCF)
BCF fish 2	< 10 (BCF; OECD 305: Bioconcentration: Flow-Through Fish Test; 3 days; Leuciscus idus; Flow-through system; Fresh water; Experimental value)
BCF other aquatic organisms 1	30 (BCF; 24 h; Chlorella sp.)
Log Pow	2.13 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
2-Butanone (78-93-3)	
Log Pow	0.3 (Experimental value; OECD 117: Partition Coefficient (n-octanol/water), HPLC method; 40 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
carbon tetrachloride (56-23-5)	
BCF fish 1	17.4 (BCF)
BCF fish 2	3.1 - 11 (BCF)
BCF other aquatic organisms 1	300 (BCF; 24 h; Chlorella sp.)
BCF other aquatic organisms 2	20 - 114 (BCF)
Log Pow	2.75 - 2.83 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
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).
chloroform (67-66-3)	
BCF fish 2	1.4 - 4.7 (BCF; OECD 305: Bioconcentration: Flow-Through Fish Test; 42 days; Cyprinus carpio; Flow-through system; Fresh water; Experimental value)
Log Pow	1.97 (Experimental value; 20 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
1,4-dichlorobenzene (106-46-7)	
BCF fish 1	100 (BCF)
BCF fish 2	214 - 720 (BCF)
BCF other aquatic organisms 1	20 (BCF)
Log Pow	3.39 - 3.62 (Experimental value)
Bioaccumulative potential	Potential for bioaccumulation (500 ≤ BCF ≤ 5000).
1,2-dichloroethane (107-06-2)	
BCF fish 1	2 (BCF; 336 h)
Log Pow	1.45 - 1.48 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
1,1-dichloroethene (75-35-4)	
BCF fish 1	2.5 - 6.4 (BCF)
BCF fish 2	7.8 (BCF)

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1,1-dichloroethene (75-35-4)	
Log Pow	1.48 - 2.17
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).
trichloroethylene (79-01-6)	
BCF fish 1	17 (BCF; 336 h)
BCF fish 2	90 (BCF; 72 h; Leuciscus idus)
BCF other aquatic organisms 1	3440 (BCF; 120 h)
BCF other aquatic organisms 2	4270 (BCF; 120 h)
Log Pow	2.29 - 2.42 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
vinyl chloride, inhibited (75-01-4)	
BCF fish 1	< 10 (BCF; 72 h)
BCF fish 2	3.55 l/kg (BCF; BCFWIN)
BCF other aquatic organisms 1	1100 (BCF; 120 h; Bacteria)
BCF other aquatic organisms 2	40 (BCF; 24 h)
Log Pow	1.58 (Test data; OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method; 22 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
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	
benzene (71-43-2)	
Surface tension	0.029 N/m (20 °C)
Log Koc	Koc,134.1; QSAR
2-Butanone (78-93-3)	
Surface tension	0.024 N/m (20 °C)
Log Koc	Koc,34; Calculated value
Ecology - soil	Slightly harmful to plants.
carbon tetrachloride (56-23-5)	
Surface tension	0.027 N/m (20 °C)
Ecology - soil	Soil contaminant. May be harmful to plant growth, blooming and fruit formation.
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
chloroform (67-66-3)	
Surface tension	0.0271 N/m (20 °C)
Log Koc	Koc,Other; 86.7-367; Experimental value; log Koc; Other; 1.94-2.56; Experimental value
Ecology - soil	May be harmful to plant growth, blooming and fruit formation.
1,4-dichlorobenzene (106-46-7)	
Surface tension	0.03 N/m (55 °C)
1,2-dichloroethane (107-06-2)	
Surface tension	0.032 N/m (20 °C)
Log Koc	log Koc,1.52; Koc; 121
tetrachloroethylene (127-18-4)	
Surface tension	0.0313 N/m (20 °C)
Log Koc	Koc,141; Experimental value; log Koc; 2.15; Experimental value
trichloroethylene (79-01-6)	
Surface tension	0.03 N/m
vinyl chloride, inhibited (75-01-4)	
Log Koc	log Koc, SRC PCKOCWIN v1.66; 1.4; QSAR

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vinyl chloride, inhibited (75-01-4)	
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

Component	
1,2-dichloroethane (107-06-2)	This substance/mixture does not meet the PBT criteria of REACH, annex XIII This substance/mixture does not meet the vPvB criteria of REACH, annex XIII
trichloroethylene (79-01-6)	This substance/mixture does not meet the PBT criteria of REACH, annex XIII This substance/mixture does not meet the vPvB criteria of REACH, annex XIII

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), I, (C/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
Hazard labels (ADR) : 3, 6.1



Hazard labels (IATA) : 3, 6.1



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Hazard labels (IMDG) : 3, 6.1



Hazard labels (ADN) : 3, 6.1



14.4. Packing group

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

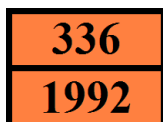
14.5. Environmental hazards

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) : 1
Tunnel restriction code (ADR) : C/E
Limited quantities (ADR) : 0
Excepted quantities (ADR) : E0

14.6.2. Transport by sea

Special provision (IMDG) : 274
Limited quantities (IMDG) : 0
Excepted quantities (IMDG) : E0
Packing instructions (IMDG) : P001
Tank instructions (IMDG) : T14
Tank special provisions (IMDG) : TP2, TP13, TP27
EmS-No. (Fire) : F-E
EmS-No. (Spillage) : S-D
Stowage category (IMDG) : E
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) : 361
CAO max net quantity (IATA) : 30L
PCA packing instructions (IATA) : Forbidden
PCA Limited quantities (IATA) : Forbidden
PCA limited quantity max net quantity (IATA) : Forbidden
PCA max net quantity (IATA) : Forbidden
PCA Excepted quantities (IATA) : E0
Special provision (IATA) : A3
ERG code (IATA) : 3HP

14.6.4. Inland waterway transport

Special provision (ADN) : 274, 802
Limited quantities (ADN) : 0
Excepted quantities (ADN) : E0

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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 substance on the candidate list in concentration $\geq 0.1\%$ or with a lower specific limit: 1,2-dichloroethane (EC 203-458-1, CAS 107-06-2), Trichloroethylene (EC 201-167-4, CAS 79-01-6)

Contains REACH Annex XIV substances:

15.1.2. National regulations

Germany

Water hazard class (WGK) : 3 - strongly 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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