

HVOC Calibration Verification

Safety Data Sheet

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

Date of issue: 30/07/2018

Revision date: _____

Version: 1.0

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

1.1. Product identifier

Product form : Mixture
Product name : HVOC Calibration Verification
Product code : AL0-130345
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
Skin Irrit. 2	H315
STOT SE 3	H336
Aquatic Acute 1	H400
Aquatic Chronic 1	H410

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

F; R11
Xi; R38
N; R50/53
R67

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) :



GHS02

GHS07

GHS09

Signal word (CLP) : Danger

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Hazard statements (CLP)	: H225 - Highly flammable liquid and vapor H315 - Causes skin irritation H336 - May cause drowsiness or dizziness H410 - Very toxic to aquatic life with long lasting effects
Precautionary statements (CLP)	: P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking P233 - Keep container tightly closed P261 - Avoid breathing dust/fume/gas/mist/vapors/spray P271 - Use only outdoors or in a well-ventilated area P273 - Avoid release to the environment P280 - Wear protective gloves/protective clothing/eye protection/face protection P308+P313 - IF exposed or concerned: Get medical advice/attention P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing P332+P313 - If skin irritation occurs: Get medical advice/attention P362+P364 - Take off contaminated clothing and wash it before reuse P370+P378 - In case of fire: Use media other than water to extinguish P391 - Collect spillage P403+P233 - Store in a well-ventilated place. Keep container tightly closed 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]
2,2,4-trimethylpentane (Component)	(CAS No) 540-84-1 (EC-No.) 208-759-1 (EC index no) 601-009-00-8	99.969	Flam. Liq. 2, H225 Asp. Tox. 1, H304 Skin Irrit. 2, H315 STOT SE 3, H336 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
1,2-dichlorobenzene (Component) substance with a Community workplace exposure limit	(CAS No) 95-50-1 (EC-No.) 202-425-9 (EC index no) 602-034-00-7	0.002	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
1,4-dichlorobenzene (Component) substance with a Community workplace exposure limit	(CAS No) 106-46-7 (EC-No.) 203-400-5 (EC index no) 602-035-00-2	0.002	Eye Irrit. 2, H319 Carc. 2, H351 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
1,2,4-trichlorobenzene (Component) substance with a Community workplace exposure limit	(CAS No) 120-82-1 (EC-No.) 204-428-0 (EC index no) 602-087-00-6	0.002	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
1,1,1-trichloroethane (Component)	(CAS No) 71-55-6 (EC-No.) 200-756-3 (EC index no) 602-013-00-2	0.002	Acute Tox. 4 (Inhalation), H332 Ozone 1, H420
carbon tetrachloride (Component)	(CAS No) 56-23-5 (EC-No.) 200-262-8 (EC index no) 602-008-00-5	0.001	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
Name	Product identifier	Specific concentration limits	
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. IF exposed or concerned: Get medical advice/attention.

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First-aid measures after inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
First-aid measures after skin contact	: Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Consult a doctor/medical service. Get medical advice/attention.
First-aid measures after eye contact	: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

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

Symptoms/effects after inhalation	: May cause drowsiness or dizziness.
Symptoms/effects after skin contact	: Causes skin irritation.

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.
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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. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up	: Take up in absorbent material. Collect spillage.
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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. Use only outdoors or in a well-ventilated area.
Hygiene measures	: 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.
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

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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)
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)
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)

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1,2-dichlorobenzene (95-50-1)		
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)
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)
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)

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1,4-dichlorobenzene (106-46-7)		
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)
1,2,4-trichlorobenzene (120-82-1)		
EU	IOELV TWA (mg/m ³)	15.1 mg/m ³ (1,2,4-Trichlorobenzene; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value)
EU	IOELV TWA (ppm)	2 ppm (1,2,4-Trichlorobenzene; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value)
EU	IOELV STEL (mg/m ³)	37.8 mg/m ³ (1,2,4-Trichlorobenzene; EU; Short time value; Indicative occupational exposure limit value)
EU	IOELV STEL (ppm)	5 ppm (1,2,4-Trichlorobenzene; EU; Short time value; Indicative occupational exposure limit value)
Belgium	Limit value (mg/m ³)	15.1 mg/m ³ (1,2,4-Trichlorobenzène; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Limit value (ppm)	2 ppm (1,2,4-Trichlorobenzène; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Short time value (mg/m ³)	37.8 mg/m ³ (1,2,4-Trichlorobenzène; Belgium; Short time value)
Belgium	Short time value (ppm)	5 ppm (1,2,4-Trichlorobenzène; Belgium; Short time value)
France	VLE (mg/m ³)	37.8 mg/m ³ (1,2,4-Trichlorobenzène; France; Short time value; VRC: Valeur réglementaire contraignante)
France	VLE (ppm)	5 ppm (1,2,4-Trichlorobenzène; France; Short time value; VRC: Valeur réglementaire contraignante)
France	VME (mg/m ³)	15.1 mg/m ³ (1,2,4-Trichlorobenzène; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
France	VME (ppm)	2 ppm (1,2,4-Trichlorobenzène; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
Italy - Portugal - USA ACGIH	ACGIH Ceiling (ppm)	5 ppm (1,2,4-Trichlorobenzene; USA; Momentary value; TLV - Adopted Value)
Netherlands	Grenswaarde TGG 8H (mg/m ³)	7.55 mg/m ³ (1,2,4-Trichlorobenzene; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 8H (ppm)	1 ppm (1,2,4-Trichlorobenzene; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 15MIN (mg/m ³)	37.8 mg/m ³ (1,2,4-Trichlorobenzene; Netherlands; Short time value; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 15MIN (ppm)	5 ppm (1,2,4-Trichlorobenzene; Netherlands; Short time value; Public occupational exposure limit value)
United Kingdom	WEL TWA (ppm)	1 ppm 1,2,4-Trichlorobenzene; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (ppm)	5 ppm 1,2,4-Trichlorobenzene; United Kingdom; Short time value; Workplace exposure limit (EH40/2005)
2,2,4-trimethylpentane (540-84-1)		
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	300 ppm (Octane, all isomers; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)

8.2. Exposure controls

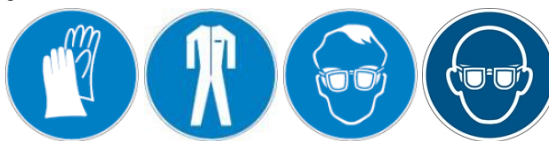
Appropriate engineering controls : Either local exhaust or general room ventilation is usually required.

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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 suitable protective clothing. 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) : 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 : Not classified

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

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carbon tetrachloride (56-23-5)	
ATE CLP (vapors)	3 mg/l/4h
ATE CLP (dust, mist)	0.5 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
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)
1,2,4-trichlorobenzene (120-82-1)	
LD50 oral rat	756 mg/kg (Rat)
LD50 dermal rat	6139 mg/kg (Rat)
LD50 dermal rabbit	> 5000 mg/kg (Rabbit)
LC50 inhalation rat (mg/l)	> 4.1 mg/l/4h (Rat)
ATE CLP (oral)	756 mg/kg body weight
ATE CLP (dermal)	6139 mg/kg body weight
1,1,1-trichloroethane (71-55-6)	
LD50 oral rat	9600 mg/kg (Rat)
LD50 dermal rabbit	> 15800 mg/kg (Rabbit)
LC50 inhalation rat (mg/l)	99 mg/l/4h (Rat)
LC50 inhalation rat (ppm)	18400 ppm/4h (Rat)
ATE CLP (oral)	9600 mg/kg body weight
ATE CLP (gases)	18400 ppmV/4h
ATE CLP (vapors)	11 mg/l/4h
ATE CLP (dust, mist)	1.5 mg/l/4h
2,2,4-trimethylpentane (540-84-1)	
LD50 oral rat	> 5000 mg/kg body weight (Rat; OECD 401: Acute Oral Toxicity; Experimental value)
LD50 dermal rabbit	> 2000 mg/kg body weight (Rabbit; Experimental value; OECD 402: Acute Dermal Toxicity)
LC50 inhalation rat (mg/l)	> 33.52 mg/l/4h (Rat; Experimental value)

Skin corrosion/irritation	: Causes skin irritation.
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	: May cause drowsiness or dizziness.
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	: Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - water	: Very toxic to aquatic life with long lasting effects.
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carbon tetrachloride (56-23-5)	
LC50 fish 1	27 mg/l (LC50; 96 h; <i>Lepomis macrochirus</i>)
EC50 Daphnia 1	29 mg/l (EC50; 48 h)
Threshold limit algae 1	> 600 mg/l (EC0; 168 h)
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)
1,4-dichlorobenzene (106-46-7)	
LC50 fish 2	1.12 mg/l (LC50; 96 h; <i>Salmo gairdneri</i>)
EC50 Daphnia 2	0.7 mg/l (EC50; 48 h)
1,2,4-trichlorobenzene (120-82-1)	
LC50 fish 1	1.32 mg/l (LC50; 96 h)
EC50 Daphnia 1	0.86 mg/l (EC50; 48 h)
1,1,1-trichloroethane (71-55-6)	
LC50 fish 1	40 mg/l (LC50; 96 h; <i>Lepomis macrochirus</i>)
EC50 Daphnia 2	2384 mg/l (EC50; 48 h)
2,2,4-trimethylpentane (540-84-1)	
EC50 Daphnia 1	0.4 mg/l (EC50; Other; 48 h; <i>Daphnia magna</i> ; Static system; Fresh water; Read-across)
Threshold limit algae 1	2.943 mg/l (EC50; Other; 72 h; <i>Pseudokirchneriella subcapitata</i> ; Fresh water)

12.2. Persistence and degradability

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Persistence and degradability	May cause long-term adverse effects in the environment.
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
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
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)
1,2,4-trichlorobenzene (120-82-1)	
Persistence and degradability	Not readily biodegradable in water. Forming sediments in water. Non degradable in the soil. Adsorbs into the soil.
Biochemical oxygen demand (BOD)	0 g O ₂ /g substance
BOD (% of ThOD)	0
1,1,1-trichloroethane (71-55-6)	
Persistence and degradability	Not readily biodegradable in water. Non degradable in the soil.
2,2,4-trimethylpentane (540-84-1)	
Persistence and degradability	Not readily biodegradable in water. Non degradable in the soil.
ThOD	3.5 g O ₂ /g substance

12.3. Bioaccumulative potential

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Bioaccumulative potential	Not established.
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; <i>Chlorella</i> 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).

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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 ($500 \leq \text{BCF} \leq 5000$).

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 ($500 \leq \text{BCF} \leq 5000$).

1,2,4-trichlorobenzene (120-82-1)	
BCF fish 1	1200 - 3700 (BCF)
BCF fish 2	1140 - 4420 (BCF)
BCF other aquatic organisms 1	250 (BCF; 24 h; Chlorella sp.)
BCF other aquatic organisms 2	142 (BCF)
Log Pow	4.02 (Experimental value)
Bioaccumulative potential	Potential for bioaccumulation ($500 \leq \text{BCF} \leq 5000$).

1,1,1-trichloroethane (71-55-6)	
BCF fish 1	9 (BCF; 672 h)
BCF fish 2	0.7 - 4.9 (BCF)
BCF other aquatic organisms 1	0.7 - 34 (BCF)
BCF other aquatic organisms 2	0 - 10 (BCF)
Log Pow	2.46 - 2.49 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation ($\text{BCF} < 500$).

2,2,4-trimethylpentane (540-84-1)	
BCF fish 2	231 (BCF)
Log Pow	4.08 - 5.18 (Calculated; KOWWIN)

12.4. Mobility in soil

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.

1,2-dichlorobenzene (95-50-1)	
Surface tension	0.037 N/m (20 °C)

1,4-dichlorobenzene (106-46-7)	
Surface tension	0.03 N/m (55 °C)

1,2,4-trichlorobenzene (120-82-1)	
Surface tension	0.039 N/m (20 °C)

1,1,1-trichloroethane (71-55-6)	
Surface tension	0.025 N/m
Ecology - soil	Soil contaminant.

2,2,4-trimethylpentane (540-84-1)	
Log Koc	log Koc, SRC PCKOCWIN v2.0; 2.58; Calculated value; Koc; SRC PCKOCWIN v2.0; 240.3; 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.

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SECTION 14: Transport information

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

14.1. UN number

UN-No. (ADR) : 1993
UN-No. (IATA) : 1993
UN-No. (IMDG) : 1993
UN-No. (ADN) : 1993

14.2. UN proper shipping name

Proper Shipping Name (ADR) : FLAMMABLE LIQUID, N.O.S.
Proper Shipping Name (IATA) : Flammable liquid, n.o.s.
Proper Shipping Name (IMDG) : FLAMMABLE LIQUID, N.O.S.
Proper Shipping Name (ADN) : FLAMMABLE LIQUID, N.O.S.
Transport document description (ADR) : UN 1993 FLAMMABLE LIQUID, N.O.S., 3, II, (D/E), ENVIRONMENTALLY HAZARDOUS

14.3. Packing group

Class (ADR) : 3
Classification code (ADR) : F1
Class (IATA) : 3
Class (IMDG) : 3
Class (ADN) : 3
Classification code (ADN) : F1
Hazard labels (ADR) : 3



Hazard labels (IATA) : 3



Hazard labels (IMDG) : 3



Hazard labels (ADN) : 3



14.4. Packing group

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

14.5. Environmental hazards

Dangerous for the environment :



Other information : No supplementary information available.

14.6. Special precautions for user

14.6.1. Overland transport

Hazard identification number (Kemler No.) : 33

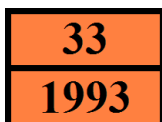
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Classification code (ADR) : F1

Orange plates :



Special provision (ADR) : 274, 601, 640D

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) : 1L

Excepted quantities (IMDG) : E2

Packing instructions (IMDG) : P001

IBC packing instructions (IMDG) : IBC02

Tank instructions (IMDG) : T7

Tank special provisions (IMDG) : TP1, TP8, TP28

EmS-No. (Fire) : F-E

EmS-No. (Spillage) : S-E

Stowage category (IMDG) : B

14.6.3. Air transport

CAO packing instructions (IATA) : 364

CAO max net quantity (IATA) : 60L

PCA packing instructions (IATA) : 353

PCA Limited quantities (IATA) : Y341

PCA limited quantity max net quantity (IATA) : 1L

PCA max net quantity (IATA) : 5L

PCA Excepted quantities (IATA) : E2

Special provision (IATA) : A3

ERG code (IATA) : 3H

14.6.4. Inland waterway transport

Special provision (ADN) : 274, 601, 640D

Limited quantities (ADN) : 1L

Excepted quantities (ADN) : E2

Carriage permitted (ADN) : T

Equipment required (ADN) : PP, EX, A

Ventilation (ADN) : VE01

Number of blue cones/lights (ADN) : 1

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 $\geq 0,1$ % / SCL

Contains no REACH Annex XIV substances \geq to the Annex XIV limit value

15.1.2. National regulations

Germany

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

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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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