

# HVOC Calibration Standard

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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

#### 1.1. Product identifier

Product form : Mixture  
 Product name : HVOC Calibration Standard  
 Product code : AL0-130397

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

Use of the substance/mixture : Certified reference material for laboratory use only

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

Phenova  
 6390 Joyce Dr. Suite 100  
 Golden, CO 80403 - United States  
 T 1-866-942-2978 - F 1-866-283-0269  
[info@phenova.com](mailto:info@phenova.com) - [www.phenova.com](http://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

##### GHS-US classification

Flam. Liq. 2	H225
Muta. 2	H341
Carc. 1A	H350
Ozone 1	H420

Full text of H statements : see section 16

#### 2.2. Label elements

##### GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H225 - Highly flammable liquid and vapour  
 H341 - Suspected of causing genetic defects  
 H350 - May cause cancer  
 H420 - Harms public health and the environment by destroying ozone in the upper atmosphere

Precautionary statements (GHS-US) :

P201 - Obtain special instructions before use.  
 P202 - Do not handle until all safety precautions have been read and understood.  
 P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
 P233 - Keep container tightly closed.  
 P280 - Wear protective gloves/protective clothing/eye protection/face protection.  
 P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower  
 P308+P313 - If exposed or concerned: Get medical advice/attention.  
 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  
 P502 - Refer to manufacturer/supplier for information on recovery/recycling.

#### 2.3. Other hazards

No additional information available

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### 2.4. Unknown acute toxicity (GHS US)

No data available

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	%	GHS-US classification
2,2,4-trimethylpentane (Component)	(CAS-No.) 540-84-1	84.5	Flam. Liq. 2, H225
Methylene Chloride (Component)	(CAS-No.) 75-09-2	2.5	Carc. 1B, H350
1,2-dichlorobenzene (Component)	(CAS-No.) 95-50-1	1	Flam. Liq. 4, H227 Acute Tox. 4 (Oral), H302
1,3-dichlorobenzene (Component)	(CAS-No.) 541-73-1	1	Flam. Liq. 4, H227 Acute Tox. 4 (Oral), H302
1,4-dichlorobenzene (Component)	(CAS-No.) 106-46-7	1	Acute Tox. 4 (Oral), H302 Eye Irrit. 2A, H319 Carc. 1B, H350 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
1,2,4-trichlorobenzene (Component)	(CAS-No.) 120-82-1	1	Acute Tox. 4 (Oral), H302
1,2,3-trichlorobenzene (Component)	(CAS-No.) 87-61-6	1	Acute Tox. 4 (Oral), H302
1,1,1-trichloroethane (Component)	(CAS-No.) 71-55-6	1	Acute Tox. 4 (Inhalation:gas), H332
1,1,2-trichloroethane (Component)	(CAS-No.) 79-00-5	1	Acute Tox. 4 (Oral), H302
tetrachloroethylene (Component)	(CAS-No.) 127-18-4	1	Carc. 1B, H350 Aquatic Chronic 2, H411
trichloroethylene (Component)	(CAS-No.) 79-01-6	1	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Muta. 2, H341 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 3, H412
1,3,5-trichlorobenzene (Component)	(CAS-No.) 108-70-3	1	Acute Tox. 4 (Oral), H302
1,1,2-trichloro-1,2,2-trifluoroethane (Component)	(CAS-No.) 76-13-1	1	Not classified
carbon tetrachloride (Component)	(CAS-No.) 56-23-5	0.5	Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation), H331 Carc. 1B, H350 STOT RE 1, H372 Aquatic Chronic 3, H412 Ozone 1, H420

## 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.
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.

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### 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 vapour.  
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. 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.

### 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

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

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USA ACGIH	ACGIH TWA (ppm)	1000 ppm
USA ACGIH	ACGIH STEL (ppm)	1250 ppm

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<b>HVOC Calibration Standard</b>		
USA ACGIH	ACGIH Ceiling (ppm)	1000 ppm
USA ACGIH	Remark (ACGIH)	Card sens
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	5600 mg/m <sup>3</sup>
USA OSHA	OSHA PEL (TWA) (ppm)	1000 ppm
USA OSHA	OSHA PEL (Ceiling) (mg/m <sup>3</sup> )	300 mg/m <sup>3</sup>
USA OSHA	OSHA PEL (Ceiling) (ppm)	50 ppm
USA OSHA	Remark (OSHA)	(2) See Table Z-2.
<b>carbon tetrachloride (56-23-5)</b>		
USA ACGIH	ACGIH TWA (ppm)	5 ppm (Carbon tetrachloride; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
USA ACGIH	ACGIH STEL (ppm)	10 ppm (Carbon tetrachloride; USA; Short time value; TLV - Adopted Value)
USA ACGIH	Remark (ACGIH)	Liver dam
USA OSHA	Remark (OSHA)	(2) See Table Z-2.
<b>1,2-dichlorobenzene (95-50-1)</b>		
USA ACGIH	ACGIH TWA (ppm)	25 ppm (o-Dichlorobenzene; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
USA ACGIH	ACGIH STEL (ppm)	50 ppm (o-Dichlorobenzene; USA; Short time value; TLV - Adopted Value)
USA ACGIH	Remark (ACGIH)	URT & eye irr; liver dam
USA OSHA	OSHA PEL (Ceiling) (mg/m <sup>3</sup> )	300 mg/m <sup>3</sup>
USA OSHA	OSHA PEL (Ceiling) (ppm)	50 ppm
<b>1,4-dichlorobenzene (106-46-7)</b>		
USA ACGIH	ACGIH TWA (ppm)	10 ppm (p-Dichlorobenzene; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
USA ACGIH	Remark (ACGIH)	Eye irr; kidney dam
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	450 mg/m <sup>3</sup>
USA OSHA	OSHA PEL (TWA) (ppm)	75 ppm
USA OSHA	OSHA PEL (STEL) (mg/m <sup>3</sup> )	675 mg/m <sup>3</sup>
USA OSHA	OSHA PEL (STEL) (ppm)	110 ppm
<b>Methylene Chloride (75-09-2)</b>		
USA ACGIH	ACGIH TWA (ppm)	50 ppm (Dichloromethane (Methylene chloride); USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
USA ACGIH	Remark (ACGIH)	COHb-emia; CNS impair
USA OSHA	Remark (OSHA)	(2) See Table Z-2.
<b>tetrachloroethylene (127-18-4)</b>		
USA ACGIH	ACGIH TWA (ppm)	25 ppm (Tetrachloroethylene (Perchloroethylene); USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
USA ACGIH	ACGIH STEL (ppm)	100 ppm (Tetrachloroethylene (Perchloroethylene); USA; Short time value; TLV - Adopted Value)
USA ACGIH	Remark (ACGIH)	CNS impair
USA OSHA	Remark (OSHA)	(2) See Table Z-2.
<b>1,2,4-trichlorobenzene (120-82-1)</b>		
USA ACGIH	ACGIH Ceiling (ppm)	5 ppm (1,2,4-Trichlorobenzene; USA; Momentary value; TLV - Adopted Value)
USA ACGIH	Remark (ACGIH)	Eye & URT irr

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1,1,1-trichloroethane (71-55-6)		
USA ACGIH	ACGIH TWA (ppm)	350 ppm
USA ACGIH	ACGIH STEL (ppm)	450 ppm
USA ACGIH	Remark (ACGIH)	CNS impair; liver dam
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	1900 mg/m <sup>3</sup>
USA OSHA	OSHA PEL (TWA) (ppm)	350 ppm


1,1,2-trichloroethane (79-00-5)		
USA ACGIH	ACGIH TWA (ppm)	10 ppm (1,1,2-Trichloroethane; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
USA ACGIH	Remark (ACGIH)	CNS impair; liver dam
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	45 mg/m <sup>3</sup>
USA OSHA	OSHA PEL (TWA) (ppm)	10 ppm

trichloroethylene (79-01-6)		
USA ACGIH	ACGIH TWA (ppm)	10 ppm (Trichloroethylene; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
USA ACGIH	ACGIH STEL (ppm)	25 ppm (Trichloroethylene; USA; Short time value; TLV - Adopted Value)
USA ACGIH	Remark (ACGIH)	CNS impair; cognitive decrements
USA OSHA	Remark (OSHA)	(2) See Table Z-2.

1,1,2-trichloro-1,2,2-trifluoroethane (76-13-1)		
USA ACGIH	ACGIH TWA (ppm)	1000 ppm (1,1,2-Trichloro-1,2,2-trifluoroethane; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
USA ACGIH	ACGIH STEL (ppm)	1250 ppm (1,1,2-Trichloro-1,2,2-trifluoroethane; USA; Short time value; TLV - Adopted Value)
USA ACGIH	Remark (ACGIH)	CNS impair
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	7600 mg/m <sup>3</sup>
USA OSHA	OSHA PEL (TWA) (ppm)	1000 ppm

2,2,4-trimethylpentane (540-84-1)		
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.
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
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Color	: Colorless.
Odor	: characteristic.
Odor threshold	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: 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)	: No data available
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: 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 vapour. 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
ATE CLP (vapors)	3 mg/l/4h
ATE CLP (dust, mist)	0.5 mg/l/4h

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<b>1,2-dichlorobenzene (95-50-1)</b>	
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
<b>1,3-dichlorobenzene (541-73-1)</b>	
LD50 oral rat	580 mg/kg (Rat; Equivalent or similar to OECD 401; Experimental value)
LC50 inhalation rat (mg/l)	> 17.6 mg/l/4h (Rat; Literature study)
ATE CLP (oral)	580 mg/kg body weight
<b>1,4-dichlorobenzene (106-46-7)</b>	
LD50 dermal rat	> 6000 mg/kg (Rat)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit)
LC50 inhalation rat (mg/l)	> 5 mg/l/4h (Rat)
<b>Methylene Chloride (75-09-2)</b>	
LD50 oral rat	> 2000 mg/kg (Rat; Literature study)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit; Literature study)
<b>tetrachloroethylene (127-18-4)</b>	
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
<b>1,2,3-trichlorobenzene (87-61-6)</b>	
LD50 oral rat	1800 mg/kg (Rat)
ATE CLP (oral)	1800 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
<b>1,2,4-trichlorobenzene (120-82-1)</b>	
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
<b>1,3,5-trichlorobenzene (108-70-3)</b>	
LD50 oral rat	800 mg/kg (Rat)
ATE CLP (oral)	800 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
<b>1,1,1-trichloroethane (71-55-6)</b>	
LD50 oral rat	9600 mg/kg (Rat)
LD50 dermal rabbit	> 15800 mg/kg (Rabbit)

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<b>1,1,1-trichloroethane (71-55-6)</b>	
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

<b>1,1,2-trichloroethane (79-00-5)</b>	
LD50 oral rat	836 mg/kg (Rat; Literature study)
LD50 dermal rabbit	5377 mg/kg (Rabbit; Literature study; OECD 402: Acute Dermal Toxicity; 5380 mg/kg bodyweight; Rabbit; Experimental value)
LC50 inhalation rat (mg/l)	7.8 mg/l/4h (Rat; Literature study)
LC50 inhalation rat (ppm)	1413 ppm/4h (Rat; Literature study)
ATE CLP (oral)	836 mg/kg body weight
ATE CLP (dermal)	1100 mg/kg body weight
ATE CLP (gases)	1413 ppmV/4h
ATE CLP (vapors)	7.8 mg/l/4h
ATE CLP (dust, mist)	1.5 mg/l/4h

<b>trichloroethylene (79-01-6)</b>	
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

<b>1,1,2-trichloro-1,2,2-trifluoroethane (76-13-1)</b>	
LD50 oral rat	43000 mg/kg (Rat)
LD50 dermal rabbit	> 11000 mg/kg (Rabbit)
LC50 inhalation rat (mg/l)	300 mg/l/4h (Rat)
LC50 inhalation rat (ppm)	38500 ppm/4h (Rat)
ATE CLP (oral)	43000 mg/kg body weight
ATE CLP (gases)	38500 ppmV/4h
ATE CLP (vapors)	300 mg/l/4h
ATE CLP (dust, mist)	300 mg/l/4h

<b>2,2,4-trimethylpentane (540-84-1)</b>	
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	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Suspected of causing genetic defects. Based on available data, the classification criteria are not met
Carcinogenicity	: May cause cancer.

<b>carbon tetrachloride (56-23-5)</b>	
IARC group	2B - Possibly carcinogenic to humans
National Toxicology Program (NTP) Status	3 - Reasonably anticipated to be Human Carcinogen

<b>1,2-dichlorobenzene (95-50-1)</b>	
IARC group	3 - Not classifiable



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<b>1,3-dichlorobenzene (541-73-1)</b>	
IARC group	3 - Not classifiable
<b>1,4-dichlorobenzene (106-46-7)</b>	
IARC group	2B - Possibly carcinogenic to humans
National Toxicology Program (NTP) Status	3 - Reasonably anticipated to be Human Carcinogen
<b>Methylene Chloride (75-09-2)</b>	
IARC group	2A - Probably carcinogenic to humans
National Toxicology Program (NTP) Status	3 - Reasonably anticipated to be Human Carcinogen
<b>tetrachloroethylene (127-18-4)</b>	
IARC group	2A - Probably carcinogenic to humans
National Toxicology Program (NTP) Status	3 - Reasonably anticipated to be Human Carcinogen
<b>1,1,1-trichloroethane (71-55-6)</b>	
IARC group	3 - Not classifiable
<b>1,1,2-trichloroethane (79-00-5)</b>	
IARC group	3 - Not classifiable
<b>trichloroethylene (79-01-6)</b>	
IARC group	1 - Carcinogenic to humans
National Toxicology Program (NTP) Status	3 - Reasonably anticipated to be Human Carcinogen

Reproductive toxicity	: Not classified Based on available data, the classification criteria are not met
Specific target organ toxicity – single exposure	: Not classified
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.
Symptoms/effects after inhalation	: May cause drowsiness or dizziness.
Symptoms/effects after skin contact	: Causes skin irritation.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - water : Very toxic to aquatic life with long lasting effects.

<b>carbon tetrachloride (56-23-5)</b>	
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)
<b>1,2-dichlorobenzene (95-50-1)</b>	
LC50 fish 1	1.58 mg/l (LC50; 96 h)
EC50 Daphnia 2	0.74 mg/l (EC50; 48 h)
<b>1,3-dichlorobenzene (541-73-1)</b>	
LC50 fish 1	1.61 mg/l (LC50; 96 h)
EC50 Daphnia 1	1.2 mg/l (EC50; Equivalent or similar to OECD 202; 48 h; Daphnia magna; Static system; Fresh water; Experimental value)
<b>1,4-dichlorobenzene (106-46-7)</b>	
LC50 fish 2	1.12 mg/l (LC50; 96 h; Salmo gairdneri)
EC50 Daphnia 2	0.7 mg/l (EC50; 48 h)
<b>Methylene Chloride (75-09-2)</b>	
LC50 fish 1	193 mg/l (LC50; 96 h; Pimephales promelas)
EC50 Daphnia 1	168.2 mg/l (EC50; 48 h)

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<b>tetrachloroethylene (127-18-4)</b>	
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)
<b>1,2,3-trichlorobenzene (87-61-6)</b>	
LC50 fish 1	7.05 mg/l (LC50; 96 h)
EC50 Daphnia 2	2.72 mg/l (EC50; 48 h)
<b>1,2,4-trichlorobenzene (120-82-1)</b>	
LC50 fish 1	1.32 mg/l (LC50; 96 h)
EC50 Daphnia 1	0.86 mg/l (EC50; 48 h)
<b>1,3,5-trichlorobenzene (108-70-3)</b>	
LC50 fish 2	5.5 mg/l (LC50; 96 h)
<b>1,1,1-trichloroethane (71-55-6)</b>	
LC50 fish 1	40 mg/l (LC50; 96 h; Lepomis macrochirus)
EC50 Daphnia 2	2384 mg/l (EC50; 48 h)
<b>1,1,2-trichloroethane (79-00-5)</b>	
LC50 fish 2	40 mg/l (LC50; EPA 660/3 - 75/009; 96 h; Lepomis macrochirus; Static system; Fresh water; Experimental value)
EC50 Daphnia 2	77.8 mg/l (EC50; 48 h; Daphnia magna)
Threshold limit algae 1	200 mg/l (ErC50; OECD 201: Alga, Growth Inhibition Test; 72 h; Desmodesmus subspicatus; Static system; Fresh water; Experimental value)
<b>trichloroethylene (79-01-6)</b>	
LC50 fish 1	40.7 mg/l (LC50; 96 h; Pimephales promelas)
EC50 Daphnia 2	20.8 mg/l (EC50; 48 h)
<b>1,1,2-trichloro-1,2,2-trifluoroethane (76-13-1)</b>	
EC50 Daphnia 1	71 mg/l (EC50; 48 h)
LC50 fish 2	7.4 mg/l (LC50; 96 h; Salmo gairdneri)
<b>2,2,4-trimethylpentane (540-84-1)</b>	
LC50 fish 1	18.4 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Oncorhynchus mykiss, Semi-static system; Fresh water, Read-across, GLP)
EC50 Daphnia 1	0.4 mg/l (EC50; Other; 48 h; Daphnia magna; Static system; Fresh water; Read-across)
Threshold limit algae 1	2.943 mg/l (EC50; Other; 72 h; Pseudokirchneriella subcapitata; Fresh water)

### 12.2. Persistence and degradability

<b>HVOC Calibration Standard</b>	
Persistence and degradability	May cause long-term adverse effects in the environment.
<b>carbon tetrachloride (56-23-5)</b>	
Persistence and degradability	Not readily biodegradable in water. No (test)data on mobility of the substance available.
Biochemical oxygen demand (BOD)	0 g O <sub>2</sub> /g substance
Chemical oxygen demand (COD)	0.001 g O <sub>2</sub> /g substance
ThOD	0.21 g O <sub>2</sub> /g substance
BOD (% of ThOD)	0
<b>1,2-dichlorobenzene (95-50-1)</b>	
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
<b>1,3-dichlorobenzene (541-73-1)</b>	
Persistence and degradability	Not readily biodegradable in water. Forming sediments in water. Non degradable in the soil. Low potential for adsorption in soil.
<b>1,4-dichlorobenzene (106-46-7)</b>	
Persistence and degradability	Readily biodegradable in water. Non degradable in the soil. Adsorbs into the soil.
ThOD	1.52 g O <sub>2</sub> /g substance
BOD (% of ThOD)	0.65 (Calculated value)

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<b>Methylene Chloride (75-09-2)</b>	
Persistence and degradability	Not readily biodegradable in water. Biodegradable in the soil.
<b>tetrachloroethylene (127-18-4)</b>	
Persistence and degradability	Not readily biodegradable in water. Low potential for adsorption in soil.
Biochemical oxygen demand (BOD)	0.06 g O <sub>2</sub> /g substance
ThOD	0.39 g O <sub>2</sub> /g substance
BOD (% of ThOD)	0.15
<b>1,2,3-trichlorobenzene (87-61-6)</b>	
Persistence and degradability	Not readily biodegradable in water.
<b>1,2,4-trichlorobenzene (120-82-1)</b>	
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 <sub>2</sub> /g substance
BOD (% of ThOD)	0
<b>1,3,5-trichlorobenzene (108-70-3)</b>	
Persistence and degradability	Not readily biodegradable in water.
Biochemical oxygen demand (BOD)	0 g O <sub>2</sub> /g substance
BOD (% of ThOD)	0
<b>1,1,1-trichloroethane (71-55-6)</b>	
Persistence and degradability	Not readily biodegradable in water. Non degradable in the soil.
<b>1,1,2-trichloroethane (79-00-5)</b>	
Persistence and degradability	Not readily biodegradable in water. Non degradable in the soil. Highly mobile in soil.
<b>trichloroethylene (79-01-6)</b>	
Persistence and degradability	Not readily biodegradable in water. Non degradable in the soil. Biodegradable in the soil under anaerobic conditions.
<b>1,1,2-trichloro-1,2,2-trifluoroethane (76-13-1)</b>	
Persistence and degradability	Not readily biodegradable in water. Biodegradable in the soil under anaerobic conditions.
<b>2,2,4-trimethylpentane (540-84-1)</b>	
Persistence and degradability	Not readily biodegradable in water. Non degradable in the soil.
ThOD	3.5 g O <sub>2</sub> /g substance

### 12.3. Bioaccumulative potential

<b>HVOC Calibration Standard</b>	
Bioaccumulative potential	Not established.
<b>carbon tetrachloride (56-23-5)</b>	
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).
<b>1,2-dichlorobenzene (95-50-1)</b>	
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).
<b>1,3-dichlorobenzene (541-73-1)</b>	
BCF fish 1	420 - 740 (BCF)
BCF fish 2	57 - 370 (BCF; OECD 305: Bioconcentration: Flow-Through Fish Test; 8 weeks; Cyprinus carpio; Flow-through system; Fresh water; Experimental value)
Log Pow	3.4 - 4.6

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<b>1,3-dichlorobenzene (541-73-1)</b>	
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
<b>1,4-dichlorobenzene (106-46-7)</b>	
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 ( $500 \leq \text{BCF} \leq 5000$ ).
<b>Methylene Chloride (75-09-2)</b>	
BCF fish 1	2 - 40 (BCF)
Log Pow	1.25 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
<b>tetrachloroethylene (127-18-4)</b>	
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).
<b>1,2,3-trichlorobenzene (87-61-6)</b>	
BCF fish 1	2600 (BCF)
BCF fish 2	130 - 1200 (BCF)
BCF other aquatic organisms 1	200 (BCF)
Log Pow	4.05 - 4.26
Bioaccumulative potential	Potential for bioaccumulation ( $500 \leq \text{BCF} \leq 5000$ ).
<b>1,2,4-trichlorobenzene (120-82-1)</b>	
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 ( $500 \leq \text{BCF} \leq 5000$ ).
<b>1,3,5-trichlorobenzene (108-70-3)</b>	
BCF fish 1	150 - 1700 (BCF)
BCF fish 2	1800 (BCF)
BCF other aquatic organisms 1	0.00012 (BCF)
BCF other aquatic organisms 2	250 (BCF)
Log Pow	4.2
Bioaccumulative potential	Potential for bioaccumulation ( $500 \leq \text{BCF} \leq 5000$ ).
<b>1,1,1-trichloroethane (71-55-6)</b>	
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 (BCF < 500).
<b>1,1,2-trichloroethane (79-00-5)</b>	
BCF fish 1	>> 0.7 - < 6.7,BCF; OECD 305: Bioconcentration: Flow-Through Fish Test; 6 weeks; Cyprinus carpio; Flow-through system; Experimental value
Log Pow	1.89 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
<b>trichloroethylene (79-01-6)</b>	
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)

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<b>trichloroethylene (79-01-6)</b>	
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).
<b>1,1,2-trichloro-1,2,2-trifluoroethane (76-13-1)</b>	
BCF fish 1	11 - 86 (BCF)
Log Pow	1.66 - 3.3 (Calculated)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
<b>2,2,4-trimethylpentane (540-84-1)</b>	
BCF fish 1	231 (BCFBAF v3.00, Pisces, Calculated value)
BCF fish 2	231 (BCF)
Log Pow	4.08 - 5.18 (Calculated; KOWWIN)
Bioaccumulative potential	High potential for bioaccumulation (Log Kow > 5).
<b>12.4. Mobility in soil</b>	
<b>carbon tetrachloride (56-23-5)</b>	
Surface tension	0.027 N/m (20 °C)
Ecology - soil	Soil contaminant. May be harmful to plant growth, blooming and fruit formation.
<b>1,2-dichlorobenzene (95-50-1)</b>	
Surface tension	0.037 N/m (20 °C)
<b>1,3-dichlorobenzene (541-73-1)</b>	
Surface tension	0.036 N/m (20 °C)
Log Koc	log Koc,Other; 2.56; Experimental value
<b>1,4-dichlorobenzene (106-46-7)</b>	
Surface tension	0.03 N/m (55 °C)
<b>Methylene Chloride (75-09-2)</b>	
Surface tension	0.028 N/m (20 °C)
Ecology - soil	May be harmful to plant growth, blooming and fruit formation.
<b>tetrachloroethylene (127-18-4)</b>	
Surface tension	0.0313 N/m (20 °C)
Log Koc	Koc,141; Experimental value; log Koc; 2.15; Experimental value
<b>1,2,4-trichlorobenzene (120-82-1)</b>	
Surface tension	0.039 N/m (20 °C)
<b>1,1,1-trichloroethane (71-55-6)</b>	
Surface tension	0.025 N/m
Ecology - soil	Soil contaminant.
<b>1,1,2-trichloroethane (79-00-5)</b>	
Surface tension	0.033 N/m (20 °C)
Log Koc	log Koc,SRC PCKOCWIN v2.0; 1.64 - 1.783; Estimated value
<b>trichloroethylene (79-01-6)</b>	
Surface tension	0.03 N/m
<b>1,1,2-trichloro-1,2,2-trifluoroethane (76-13-1)</b>	
Surface tension	0.023 N/m
<b>2,2,4-trimethylpentane (540-84-1)</b>	
Log Koc	log Koc,SRC PCKOCWIN v2.0; 2.58; Calculated value; Koc; SRC PCKOCWIN v2.0; 240.3; Calculated value

### 12.5. Other adverse effects

Other information : Avoid release to the environment.

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### 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.

### SECTION 14: Transport information

In accordance with DOT

- Transport document description : UN1993 Flammable liquids, n.o.s. (trichloroethylene trichloroethylene trichloroethylene), 3, II
- UN-No.(DOT) : 1993
- DOT NA no. : UN1993
- Proper Shipping Name (DOT) : Flammable liquids, n.o.s.  
trichloroethylene trichloroethylene trichloroethylene
- Class (DOT) : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
- Hazard labels (DOT) : 3 - Flammable liquid



- DOT Symbols : G - Identifies PSN requiring a technical name
- Packing group (DOT) : II - Medium Danger
- DOT Special Provisions (49 CFR 172.102) : IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized.  
T7 - 4 178.274(d)(2) Normal..... 178.275(d)(3)  
TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling =  $97 / 1 + a (tr - tf)$  Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.  
TP8 - A portable tank having a minimum test pressure of 1.5 bar (150 kPa) may be used when the flash point of the hazardous material transported is greater than 0 C (32 F).  
TP28 - A portable tank having a minimum test pressure of 2.65 bar (265 kPa) may be used provided the calculated test pressure is 2.65 bar or less based on the MAWP of the hazardous material, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.
- DOT Packaging Exceptions (49 CFR 173.xxx) : 150
- DOT Packaging Non Bulk (49 CFR 173.xxx) : 202
- DOT Packaging Bulk (49 CFR 173.xxx) : 242
- DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 5 L
- DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 60 L
- DOT Vessel Stowage Location : B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.

#### Additional information

- Emergency Response Guide (ERG) Number : 128
- Other information : No supplementary information available.

#### ADR

- Transport document description : UN 1993 FLAMMABLE LIQUID, N.O.S., 3, II, (D/E)
- Packing group (ADR) : II
- Class (ADR) : 3 - Flammable liquid
- Hazard identification number (Kemler No.) : 33

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Classification code (ADR) : F1  
Hazard labels (ADR) : 3 - Flammable liquids



Orange plates :

Tunnel restriction code (ADR) : D/E  
LQ : 11  
Excepted quantities (ADR) : E2

### Transport by sea

UN-No. (IMDG) : 1993  
Proper Shipping Name (IMDG) : FLAMMABLE LIQUID, N.O.S.  
Class (IMDG) : 3 - Flammable liquids  
Packing group (IMDG) : II - substances presenting medium danger

### Air transport

UN-No. (IATA) : 1993  
Proper Shipping Name (IATA) : Flammable liquid, n.o.s.  
Class (IATA) : 3 - Flammable Liquids  
Packing group (IATA) : II - Medium Danger

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

#### carbon tetrachloride (56-23-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Subject to reporting requirements of United States SARA Section 313

CERCLA RQ : 10 lb

SARA Section 313 - Emission Reporting : 1 %

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

Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Subject to reporting requirements of United States SARA Section 313

CERCLA RQ : 100 lb

SARA Section 313 - Emission Reporting : 1 %

#### 1,3-dichlorobenzene (541-73-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Subject to reporting requirements of United States SARA Section 313

CERCLA RQ : 100 lb

SARA Section 313 - Emission Reporting : 1 %

#### 1,4-dichlorobenzene (106-46-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Subject to reporting requirements of United States SARA Section 313

CERCLA RQ : 100 lb

SARA Section 311/312 Hazard Classes : Immediate (acute) health hazard  
Delayed (chronic) health hazard

SARA Section 313 - Emission Reporting : 1 %

#### dichloromethane (75-09-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Subject to reporting requirements of United States SARA Section 313

EPA TSCA Regulatory Flag : R - R - indicates a substance that is the subject of a TSCA section 6 risk management rule.

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<b>dichloromethane (75-09-2)</b>	
CERCLA RQ	1000 lb
SARA Section 313 - Emission Reporting	1 %
<b>tetrachloroethylene (127-18-4)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	100 lb
SARA Section 313 - Emission Reporting	1 %
<b>1,2,3-trichlorobenzene (87-61-6)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>1,2,4-trichlorobenzene (120-82-1)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	100 lb
SARA Section 313 - Emission Reporting	1 %
<b>1,3,5-trichlorobenzene (108-70-3)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>1,1,1-trichloroethane (71-55-6)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	1000 lb
SARA Section 313 - Emission Reporting	1 %
<b>1,1,2-trichloroethane (79-00-5)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	100 lb
SARA Section 313 - Emission Reporting	1 %
<b>trichloroethylene (79-01-6)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
EPA TSCA Regulatory Flag	R - R - indicates a substance that is the subject of a TSCA section 6 risk management rule.
CERCLA RQ	100 lb
SARA Section 313 - Emission Reporting	1 %
<b>1,1,2-trichloro-1,2,2-trifluoroethane (76-13-1)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
SARA Section 313 - Emission Reporting	1 %
<b>2,2,4-trimethylpentane (540-84-1)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
CERCLA RQ	1000 lb

### 15.2. International regulations

#### CANADA

<b>carbon tetrachloride (56-23-5)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
<b>1,2-dichlorobenzene (95-50-1)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
<b>1,3-dichlorobenzene (541-73-1)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
<b>1,4-dichlorobenzene (106-46-7)</b>	
Listed on the Canadian DSL (Domestic Substances List)	



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### dichloromethane (75-09-2)

Listed on the Canadian DSL (Domestic Substances List)

### tetrachloroethylene (127-18-4)

Listed on the Canadian DSL (Domestic Substances List)

### 1,2,3-trichlorobenzene (87-61-6)

Listed on the Canadian DSL (Domestic Substances List)

### 1,2,4-trichlorobenzene (120-82-1)

Listed on the Canadian DSL (Domestic Substances List)

### 1,3,5-trichlorobenzene (108-70-3)

Listed on the Canadian DSL (Domestic Substances List)

### 1,1,1-trichloroethane (71-55-6)

Listed on the Canadian DSL (Domestic Substances List)

### 1,1,2-trichloroethane (79-00-5)

Listed on the Canadian DSL (Domestic Substances List)

### trichloroethylene (79-01-6)

Listed on the Canadian DSL (Domestic Substances List)

### 1,1,2-trichloro-1,2,2-trifluoroethane (76-13-1)

Listed on the Canadian DSL (Domestic Substances List)

### 2,2,4-trimethylpentane (540-84-1)

Listed on the Canadian DSL (Domestic Substances List)

## EU-Regulations

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

### 1,3-dichlorobenzene (541-73-1)

### 1,4-dichlorobenzene (106-46-7)

### dichloromethane (75-09-2)

### tetrachloroethylene (127-18-4)

### 1,2,3-trichlorobenzene (87-61-6)

### 1,2,4-trichlorobenzene (120-82-1)

### 1,3,5-trichlorobenzene (108-70-3)

### 1,1,1-trichloroethane (71-55-6)

### 1,1,2-trichloroethane (79-00-5)

### trichloroethylene (79-01-6)

### 1,1,2-trichloro-1,2,2-trifluoroethane (76-13-1)

### 2,2,4-trimethylpentane (540-84-1)

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

Flam. Liq. 2	H225
Skin Irrit. 2	H315
Muta. 2	H341
Carc. 1B	H350
STOT SE 3	H336
STOT RE 2	H373
Aquatic Acute 1	H400
Aquatic Chronic 1	H410
Ozone 1	H420

Full text of H statements : see section 16

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### 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

### 15.2.2. National regulations

<b>carbon tetrachloride (56-23-5)</b>
Listed on IARC (International Agency for Research on Cancer) Listed as carcinogen on NTP (National Toxicology Program) Listed on EPA Hazardous Air Pollutant (HAPS)
<b>1,2-dichlorobenzene (95-50-1)</b>
<b>1,3-dichlorobenzene (541-73-1)</b>
<b>1,4-dichlorobenzene (106-46-7)</b>
Listed on IARC (International Agency for Research on Cancer) Listed as carcinogen on NTP (National Toxicology Program) Listed on EPA Hazardous Air Pollutant (HAPS)
<b>dichloromethane (75-09-2)</b>
Listed on IARC (International Agency for Research on Cancer) Listed as carcinogen on NTP (National Toxicology Program) Listed on EPA Hazardous Air Pollutant (HAPS)
<b>tetrachloroethylene (127-18-4)</b>
Listed on IARC (International Agency for Research on Cancer) Listed as carcinogen on NTP (National Toxicology Program) Listed on EPA Hazardous Air Pollutant (HAPS)
<b>1,2,3-trichlorobenzene (87-61-6)</b>
<b>1,2,4-trichlorobenzene (120-82-1)</b>
Listed on EPA Hazardous Air Pollutant (HAPS)
<b>1,3,5-trichlorobenzene (108-70-3)</b>
<b>1,1,1-trichloroethane (71-55-6)</b>
Listed on EPA Hazardous Air Pollutant (HAPS)
<b>1,1,2-trichloroethane (79-00-5)</b>
Listed on EPA Hazardous Air Pollutant (HAPS)
<b>trichloroethylene (79-01-6)</b>
Listed on IARC (International Agency for Research on Cancer) Listed as carcinogen on NTP (National Toxicology Program) Listed on EPA Hazardous Air Pollutant (HAPS)
<b>1,1,2-trichloro-1,2,2-trifluoroethane (76-13-1)</b>
<b>2,2,4-trimethylpentane (540-84-1)</b>
Listed on EPA Hazardous Air Pollutant (HAPS)

### 15.3. US State regulations

HVOC Calibration Standard()				
U.S. - California - Proposition 65 - Carcinogens List	No			
U.S. - California - Proposition 65 - Developmental Toxicity	No			
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No			
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No			
carbon tetrachloride (56-23-5)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity -	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)

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<b>carbon tetrachloride (56-23-5)</b>				
		Female		
Yes	No	No	No	
<b>1,2-dichlorobenzene (95-50-1)</b>				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	
<b>1,3-dichlorobenzene (541-73-1)</b>				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	
<b>1,4-dichlorobenzene (106-46-7)</b>				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
Yes	No	No	No	
<b>dichloromethane (75-09-2)</b>				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
Yes	No	No	No	
<b>tetrachloroethylene (127-18-4)</b>				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
Yes	No	No	No	
<b>1,2,3-trichlorobenzene (87-61-6)</b>				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	
<b>1,2,4-trichlorobenzene (120-82-1)</b>				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	
<b>1,3,5-trichlorobenzene (108-70-3)</b>				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	
<b>1,1,1-trichloroethane (71-55-6)</b>				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)

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<b>1,1,1-trichloroethane (71-55-6)</b>				
		Female		
No	No	No	No	
<b>1,1,2-trichloroethane (79-00-5)</b>				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
Yes	No	No	No	
<b>trichloroethylene (79-01-6)</b>				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
Yes	Yes	No	Yes	
<b>1,1,2-trichloro-1,2,2-trifluoroethane (76-13-1)</b>				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	
<b>2,2,4-trimethylpentane (540-84-1)</b>				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	

### 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.

### Hazard Rating

PHV SDS US

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