Custom VOA Cal Mix

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

1.1. Identification

Product form : Mixture

Product name : Custom VOA Cal Mix

Product code : AL0-180001; AL0-180024

1.2. Recommended use and restrictions on use

No additional information available

1.3. Supplier

Phenova
6390 Joyce Dr. Suite 100
Golden, CO 80403 - 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: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Flammable liquids Category 1	H224	Extremely flammable liquid and vapour
Acute toxicity (oral) Category 3	H301	Toxic if swallowed
Acute toxicity (dermal) Category 3	H311	Toxic in contact with skin
Skin sensitization, Category 1	H317	May cause an allergic skin reaction
Germ cell mutagenicity Category 1B	H340	May cause genetic defects
Carcinogenicity Category 1A	H350	May cause cancer
Specific target organ toxicity (single exposure) Category 1	H370	Causes damage to organs
Hazardous to the ozone layer Category 1	H420	Harms public health and the environment by destroying ozone in the upper atmosphere

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :

Signal word (GHS US) : Danger

Hazard statements (GHS US) : H224 - Extremely flammable liquid and vapour
H301+H311 - Toxic if swallowed or in contact with skin
H317 - May cause an allergic skin reaction
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 (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, 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.
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.
P264 - Wash hands, forearms and face thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P272 - Contaminated work clothing must not be allowed out of the workplace
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310 - If swallowed: Immediately call a poison center or doctor
P302+P352 - If on skin: Wash with plenty of water
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
P307+P311 - If exposed: Call a poison center/doctor
P308+P313 - If exposed or concerned: Get medical advice/attention.
P312 - Call a poison center or doctor if you feel unwell
P321 - Specific treatment (see supplemental first aid instruction on this label)
P322 - Specific treatment (see supplemental first aid instruction on this label)
P330 - Rinse mouth.
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P361+P364 - Take off immediately all contaminated clothing and wash it before reuse.
P363 - Wash contaminated clothing 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
P502 - Refer to manufacturer/supplier for information on recovery/recycling.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	Conc.
methanol (Component)	(CAS-No.) 67-56-1	85
allyl chloride (Component)	(CAS-No.) 107-05-1	0.2
benzene (Component)	(CAS-No.) 71-43-2	0.2
bromodichloromethane (Component)	(CAS-No.) 75-27-4	0.2
carbon tetrachloride (Component)	(CAS-No.) 56-23-5	0.2
chloroform (Component)	(CAS-No.) 67-66-3	0.2
2-chloro-1,3-butadiene, inhibited (Component)	(CAS-No.) 126-99-8	0.2
1,2-dibromo-3-chloropropane (Component)	(CAS-No.) 96-12-8	0.2
1,2-Dibromoethane (Component)	(CAS-No.) 106-93-4	0.2
1,4-dichlorobenzene (Component)	(CAS-No.) 106-46-7	0.2
1,4-dichloro-2-butene, (Z)- (Component)	(CAS-No.) 1476-11-5	0.2
1,4-dichloro-2-butene, trans- (Component)	(CAS-No.) 110-57-6	0.2
1,2-dichloroethane (Component)	(CAS-No.) 107-06-2	0.2
1,1-dichloroethene (Component)	(CAS-No.) 75-35-4	0.2
1,2-dichloropropane (Component)	(CAS-No.) 78-87-5	0.2
cis-1,3-Dichloropropene (Component)	(CAS-No.) 10061-01-5	0.2

Name	Product identifier	Conc.
1,3-dichloropropene, trans- (Component)	(CAS-No.) 10061-02-6	0.2
ethylbenzene (Component)	(CAS-No.) 100-41-4	0.2
ethyl methacrylate (Component)	(CAS-No.) 97-63-2	0.2
hexachlorobuta-1,3-diene (Component)	(CAS-No.) 87-68-3	0.2
iodomethane (Component)	(CAS-No.) 74-88-4	0.2
Isopropylbenzene (Component)	(CAS-No.) 98-82-8	0.2
Methylene Chloride (Component)	(CAS-No.) 75-09-2	0.2
naphthalene (Component)	(CAS-No.) 91-20-3	0.2
2-nitropropane (Component)	(CAS-No.) 79-46-9	0.2
styrene (Component)	(CAS-No.) 100-42-5	0.2
1,1,1,2-tetrachloroethane (Component)	(CAS-No.) 630-20-6	0.2
1,1,2,2-tetrachloroethane (Component)	(CAS-No.) 79-34-5	0.2
tetrachloroethylene (Component)	(CAS-No.) 127-18-4	0.2
toluene (Component)	(CAS-No.) 108-88-3	0.2
1,1,2-trichloroethane (Component)	(CAS-No.) 79-00-5	0.2
trichloroethylene (Component)	(CAS-No.) 79-01-6	0.2
1,2,3-trichloropropane (Component)	(CAS-No.) 96-18-4	0.2

Full text of hazard classes and H-statements : see section 16

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 : Allow affected person to breathe fresh air. Allow the victim to rest.

First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.

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 (acute and delayed)

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

Symptoms/effects : Not expected to present a significant hazard under anticipated conditions of normal use.

4.3. Immediate medical attention and special treatment, if necessary

No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

No additional information available

5.3. Special protective equipment and precautions for fire-fighters

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.

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

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.

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

Storage conditions : Keep container closed when not in use. Keep container tightly closed and in a well-ventilated place. Keep away from any flames or sparking source.

Incompatible materials : Direct sunlight.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Custom VOA Cal Mix		
ACGIH	Local name	Methanol
ACGIH	ACGIH TWA (ppm)	200 ppm
ACGIH	ACGIH STEL (ppm)	250 ppm
ACGIH	Remark (ACGIH)	Headache; eye dam; dizziness; nausea
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m³)	260 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	200 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA

allyl chloride (107-05-1)		
ACGIH	Local name	Allyl chloride
ACGIH	ACGIH TWA (ppm)	1 ppm
ACGIH	ACGIH STEL (ppm)	2 ppm
ACGIH	Remark (ACGIH)	Eye & URT irr; liver & kidney dam
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m³)	3 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	1 ppm

allyl chloride (107-05-1)		
OSHA	Regulatory reference (US-OSHA)	OSHA

benzene (71-43-2)		
ACGIH	Local name	Benzene
ACGIH	ACGIH TWA (ppm)	0.5 ppm
ACGIH	ACGIH STEL (ppm)	2.5 ppm
ACGIH	Remark (ACGIH)	Leukemia
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (ppm)	10 ppm
OSHA	OSHA PEL (Ceiling) (ppm)	25 ppm
OSHA	Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift	50 ppm 10 mins.
OSHA	Regulatory reference (US-OSHA)	OSHA
NIOSH	NIOSH REL (TWA) (ppm)	0.1 ppm
NIOSH	NIOSH REL (STEL) (ppm)	1 ppm

bromodichloromethane (75-27-4)
Not applicable

carbon tetrachloride (56-23-5)		
ACGIH	Local name	Carbon tetrachloride
ACGIH	ACGIH TWA (ppm)	5 ppm
ACGIH	ACGIH STEL (ppm)	10 ppm
ACGIH	Remark (ACGIH)	Liver dam
ACGIH	Regulatory reference	ACGIH 2018
OSHA	Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift	200 ppm 5 min. in any 4 hrs.
OSHA	Remark (OSHA)	(2) See Table Z-2.
OSHA	Regulatory reference (US-OSHA)	OSHA

chloroform (67-66-3)		
ACGIH	Local name	Chloroform
ACGIH	ACGIH TWA (ppm)	10 ppm (Chloroform; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
ACGIH	Remark (ACGIH)	Liver dam; embryo/fetal dam
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (Ceiling) (mg/m³)	240 mg/m³
OSHA	OSHA PEL (Ceiling) (ppm)	50 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA

2-chloro-1,3-butadiene, inhibited (126-99-8)		
ACGIH	Local name	β-Chloroprene
ACGIH	ACGIH TWA (ppm)	1 ppm
ACGIH	Remark (ACGIH)	Lung cancer; URT & eye irr; Skin; A2 (Suspected Human Carcinogen: Human data are accepted as adequate in quality but are conflicting or insufficient to classify the agent as a confirmed human carcinogen; OR, the agent is carcinogenic in experimental animals at dose(s), by route(s) of exposure, at site(s), of histologic type(s), or by mechanism(s) considered relevant to worker exposure. The A2 is used primarily when there is limited evidence or carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals with relevance to humans)

2-chloro-1,3-butadiene, inhibited (126-99-8)		
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m³)	90 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	25 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA

1,2-dibromo-3-chloropropane (96-12-8)
Not applicable

1,2-Dibromoethane (106-93-4)		
OSHA	Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift	50 ppm 5 mins.
OSHA	Remark (OSHA)	(2) See Table Z-2.
OSHA	Regulatory reference (US-OSHA)	OSHA

1,4-dichlorobenzene (106-46-7)		
ACGIH	Local name	p-Dichlorobenzene
ACGIH	ACGIH TWA (ppm)	10 ppm
ACGIH	Remark (ACGIH)	Eye irr; kidney dam
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m³)	450 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	75 ppm
OSHA	OSHA PEL (STEL) (mg/m³)	675 mg/m³
OSHA	OSHA PEL (STEL) (ppm)	110 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA

1,4-dichloro-2-butene, (Z)- (1476-11-5)		
ACGIH	ACGIH TWA (ppm)	0.005 ppm

1,4-dichloro-2-butene, trans- (110-57-6)		
ACGIH	ACGIH TWA (ppm)	0.005 ppm

1,2-dichloroethane (107-06-2)		
ACGIH	Local name	Ethylene dichloride
ACGIH	ACGIH TWA (ppm)	10 ppm
ACGIH	Remark (ACGIH)	Liver dam; nausea
ACGIH	Regulatory reference	ACGIH 2018
OSHA	Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift	200 ppm 5 mins. in any 3 hrs.
OSHA	Remark (OSHA)	(2) See Table Z-2.
OSHA	Regulatory reference (US-OSHA)	OSHA

1,1-dichloroethene (75-35-4)		
ACGIH	Local name	Vinylidene chloride
ACGIH	ACGIH TWA (ppm)	5 ppm
ACGIH	Remark (ACGIH)	Liver & kidney dam
ACGIH	Regulatory reference	ACGIH 2018

1,2-dichloropropane (78-87-5)		
ACGIH	Local name	Propylene dichloride
ACGIH	ACGIH TWA (ppm)	10 ppm (Propylene dichloride; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)

1,2-dichloropropane (78-87-5)		
ACGIH	Remark (ACGIH)	URT irr; body weight eff; DSEN; A4 (Not classifiable as a Human Carcinogen: Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of a lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories)
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m³)	350 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	75 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA

cis-1,3-Dichloropropene (10061-01-5)		
ACGIH	ACGIH TWA (ppm)	1 ppm

1,3-dichloropropene, trans- (10061-02-6)		
ACGIH	ACGIH TWA (ppm)	1 ppm

ethylbenzene (100-41-4)		
ACGIH	Local name	Ethyl benzene
ACGIH	ACGIH TWA (ppm)	20 ppm (Ethyl benzene; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
ACGIH	Remark (ACGIH)	URT irr; kidney dam (nephropathy)
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m³)	435 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	100 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA

ethyl methacrylate (97-63-2)
Not applicable

hexachlorobuta-1,3-diene (87-68-3)		
ACGIH	Local name	Hexachlorobutadiene
ACGIH	ACGIH TWA (ppm)	0.02 ppm
ACGIH	Remark (ACGIH)	Kidney dam
ACGIH	Regulatory reference	ACGIH 2018

iodomethane (74-88-4)		
ACGIH	Local name	Methyl iodide
ACGIH	ACGIH TWA (ppm)	2 ppm
ACGIH	Remark (ACGIH)	Eye dam; CNS impair
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m³)	28 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	5 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA

Isopropylbenzene (98-82-8)		
ACGIH	Local name	Cumene
ACGIH	ACGIH TWA (ppm)	50 ppm
ACGIH	Remark (ACGIH)	Eye, skin, & URT irr; CNS impair
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m³)	245 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	50 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA

Methylene Chloride (75-09-2)		
ACGIH	Local name	Dichloromethane
ACGIH	ACGIH TWA (ppm)	50 ppm
ACGIH	Remark (ACGIH)	COHb-emia; CNS impair
ACGIH	Regulatory reference	ACGIH 2018
OSHA	Remark (OSHA)	(2) See Table Z-2.
OSHA	Regulatory reference (US-OSHA)	OSHA

naphthalene (91-20-3)		
ACGIH	Local name	Naphthalene
ACGIH	ACGIH TWA (ppm)	10 ppm (Naphthalene; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
ACGIH	Remark (ACGIH)	Hematologic eff; URT & eye irr; Skin; A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans: The agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) that may not be relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence does not suggest that the agent is likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure)
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m³)	50 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	10 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA

2-nitropropane (79-46-9)		
ACGIH	Local name	2-Nitropropane
ACGIH	ACGIH TWA (ppm)	10 ppm
ACGIH	Remark (ACGIH)	Liver dam; liver cancer
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m³)	90 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	25 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA

styrene (100-42-5)		
ACGIH	Local name	Styrene, monomer
ACGIH	ACGIH TWA (ppm)	20 ppm (Styrene, monomer; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
ACGIH	ACGIH STEL (ppm)	40 ppm (Styrene, monomer; USA; Short time value; TLV - Adopted Value)
ACGIH	Remark (ACGIH)	CNS impair; URT irr; peripheral
ACGIH	Regulatory reference	ACGIH 2018
OSHA	Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift	600 ppm 5 mins. in any 3 hrs.
OSHA	Remark (OSHA)	(2) See Table Z-2.
OSHA	Regulatory reference (US-OSHA)	OSHA

1,1,1,2-tetrachloroethane (630-20-6)
Not applicable

1,1,2,2-tetrachloroethane (79-34-5)		
ACGIH	Local name	1,1,2,2-Tetrachloroethane

1,1,2,2-tetrachloroethane (79-34-5)		
ACGIH	ACGIH TWA (ppm)	1 ppm
ACGIH	Remark (ACGIH)	Liver dam
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m³)	35 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	5 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA

tetrachloroethylene (127-18-4)		
ACGIH	Local name	Tetrachloroethylene
ACGIH	ACGIH TWA (ppm)	25 ppm (Tetrachloroethylene (Perchloroethylene); USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
ACGIH	ACGIH STEL (ppm)	100 ppm (Tetrachloroethylene (Perchloroethylene); USA; Short time value; TLV - Adopted Value)
ACGIH	Remark (ACGIH)	CNS impair
ACGIH	Regulatory reference	ACGIH 2018
OSHA	Remark (OSHA)	(2) See Table Z-2.
OSHA	Regulatory reference (US-OSHA)	OSHA

toluene (108-88-3)		
ACGIH	Local name	Toluene
ACGIH	ACGIH TWA (ppm)	20 ppm (Toluene; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
ACGIH	Remark (ACGIH)	Visual impair; female repro;
ACGIH	Regulatory reference	ACGIH 2018
OSHA	Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift	500 ppm 10 mins.
OSHA	Remark (OSHA)	(2) See Table Z-2.
OSHA	Regulatory reference (US-OSHA)	OSHA

1,1,2-trichloroethane (79-00-5)		
ACGIH	Local name	1,1,2-Trichloroethane
ACGIH	ACGIH TWA (ppm)	10 ppm
ACGIH	Remark (ACGIH)	CNS impair; liver dam
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m³)	45 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	10 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA

trichloroethylene (79-01-6)		
ACGIH	Local name	Trichloroethylene
ACGIH	ACGIH TWA (ppm)	10 ppm (Trichloroethylene; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
ACGIH	ACGIH STEL (ppm)	25 ppm (Trichloroethylene; USA; Short time value; TLV - Adopted Value)
ACGIH	Remark (ACGIH)	CNS impair; cognitive decrements
ACGIH	Regulatory reference	ACGIH 2018
OSHA	Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift	300 ppm 5 mins. in any 2 hrs.
OSHA	Remark (OSHA)	(2) See Table Z-2.
OSHA	Regulatory reference (US-OSHA)	OSHA

1,2,3-trichloropropane (96-18-4)		
ACGIH	Local name	1,2,3-Trichloropropane
ACGIH	ACGIH TWA (ppm)	0.005 ppm
ACGIH	Remark (ACGIH)	Cancer; eye & URT irr; liver dam; A2 (Suspected Human Carcinogen: Human data are accepted as adequate in quality but are conflicting or insufficient to classify the agent as a confirmed human carcinogen; OR, the agent is carcinogenic in experimental animals at dose(s), by route(s) of exposure, at site(s), of histologic type(s), or by mechanism(s) considered relevant to worker exposure. The A2 is used primarily when there is limited evidence or carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals with relevance to humans)
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m³)	300 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	50 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA

methanol (67-56-1)		
ACGIH	Local name	Methanol
ACGIH	ACGIH TWA (ppm)	200 ppm (Methanol; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
ACGIH	ACGIH STEL (ppm)	250 ppm (Methanol; USA; Short time value; TLV - Adopted Value)
ACGIH	Remark (ACGIH)	Headache; eye dam; dizziness; nausea
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m³)	260 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	200 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA

8.2. Appropriate engineering controls

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

8.3. Individual protection measures/Personal protective equipment

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:

Wear appropriate mask

Personal protective equipment symbol(s):

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
	:	Colorless
	:	characteristic
Odor threshold	:	No data available
pH	:	No data available
Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	No data available
Flash point	:	No data available
Relative evaporation rate (butyl acetate=1)	:	No data available
Flammability (solid, gas)	:	Non flammable.
Vapor pressure	:	No data available
Relative vapor density at 20 °C	:	No data available
Relative density	:	No data available
Solubility	:	No data available
Partition coefficient n-octanol/water (Log Pow)	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosion limits	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	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

Not established.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Custom VOA Cal Mix	
ATE US (oral)	117.647 mg/kg body weight
ATE US (dermal)	352.941 mg/kg body weight

allyl chloride (107-05-1)	
LD50 oral rat	275 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Female, Experimental value, Oral, 14 day(s))
LD50 dermal rabbit	398 mg/kg body weight (24 h, Rabbit, Male / female, Experimental value, Dermal, 14 day(s))
LC50 inhalation rat (mg/l)	5.6 mg/l (4 h, Rat, Experimental value, Inhalation (vapours), 28 day(s))
ATE US (oral)	275 mg/kg body weight
ATE US (dermal)	398 mg/kg body weight
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	5.6 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h

benzene (71-43-2)	
LD50 oral rat	> 2000 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Male, Experimental value, Oral)
LC50 inhalation rat (mg/l)	43.767 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Female, Experimental value, Inhalation (vapours))
LC50 inhalation rat (ppm)	13700 ppm (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Female, Experimental value, Inhalation (vapours))
ATE US (vapors)	43.767 mg/l/4h
ATE US (dust, mist)	43.767 mg/l/4h

bromodichloromethane (75-27-4)	
LD50 oral rat	916 mg/kg (Rat, Oral)
ATE US (oral)	916 mg/kg body weight

carbon tetrachloride (56-23-5)	
LD50 oral rat	2500 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Male, Experimental value, Oral, ≥ 14 day(s))
LD50 dermal rabbit	> 14900 mg/kg body weight (24 h, Rabbit, Male / female, Experimental value, Dermal)
LC50 inhalation rat (mg/l)	46.26 mg/l (Equivalent or similar to OECD 403, 6 h, Rat, Male, Experimental value, Inhalation (vapours))
ATE US (oral)	100 mg/kg body weight
ATE US (dermal)	300 mg/kg body weight
ATE US (gases)	700 ppmV/4h
ATE US (vapors)	3 mg/l/4h
ATE US (dust, mist)	0.5 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 US (oral)	695 mg/kg body weight
ATE US (gases)	700 ppmV/4h
ATE US (vapors)	3 mg/l/4h
ATE US (dust, mist)	0.5 mg/l/4h

2-chloro-1,3-butadiene, inhibited (126-99-8)	
LD50 oral rat	251 mg/kg body weight (Rat, Experimental value, Oral)
LD50 dermal rabbit	> 200 mg/kg body weight (24 h, Rabbit, Male, Experimental value, Dermal, 2 day(s))
LC50 inhalation rat (mg/l)	≥ 8.42 mg/l (4 h, Rat, Male, Experimental value, Inhalation (vapours), 14 day(s))
ATE US (oral)	251 mg/kg body weight
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h

1,2-dibromo-3-chloropropane (96-12-8)	
LD50 oral rat	170 mg/kg (Rat, Literature study, Oral)
ATE US (oral)	170 mg/kg body weight

1,2-Dibromoethane (106-93-4)	
LD50 oral rat	140 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral)
LD50 dermal rat	300 mg/kg (Rat, Literature study, Dermal)

1,2-Dibromoethane (106-93-4)	
LC50 inhalation rat (ppm)	> 200 ppm (Other, 4 h, Rat, Male / female, Experimental value, Inhalation (vapours))
ATE US (oral)	140 mg/kg body weight
ATE US (dermal)	300 mg/kg body weight
ATE US (gases)	700 ppmV/4h
ATE US (vapors)	3 mg/l/4h
ATE US (dust, mist)	0.5 mg/l/4h

1,4-dichlorobenzene (106-46-7)	
LD50 dermal rat	> 6000 mg/kg (Rat, Dermal)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit, Dermal)
LC50 inhalation rat (mg/l)	> 5 mg/l (4 h, Rat, Inhalation)
ATE US (oral)	500 mg/kg body weight

1,4-dichloro-2-butene, (Z)- (1476-11-5)	
ATE US (oral)	100 mg/kg body weight
ATE US (dermal)	300 mg/kg body weight
ATE US (gases)	100 ppmV/4h
ATE US (vapors)	0.5 mg/l/4h
ATE US (dust, mist)	0.05 mg/l/4h

1,4-dichloro-2-butene, trans- (110-57-6)	
ATE US (oral)	100 mg/kg body weight
ATE US (dermal)	300 mg/kg body weight
ATE US (gases)	100 ppmV/4h
ATE US (vapors)	0.5 mg/l/4h
ATE US (dust, mist)	0.05 mg/l/4h

1,2-dichloroethane (107-06-2)	
LD50 oral rat	770 mg/kg (OECD 401: Acute Oral Toxicity, Rat, Male, Experimental value, Oral)
LD50 dermal rabbit	2800 mg/kg (Rabbit, Literature study, Dermal)
LC50 inhalation rat (mg/l)	7.758 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Experimental value, Inhalation (vapours))
LC50 inhalation rat (ppm)	1886 ppm (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Experimental value, Inhalation (vapours))
ATE US (oral)	770 mg/kg body weight
ATE US (dermal)	2800 mg/kg body weight
ATE US (vapors)	7.758 mg/l/4h
ATE US (dust, mist)	7.758 mg/l/4h

1,1-dichloroethene (75-35-4)	
LD50 oral rat	> 1000 mg/kg (Rat, Male / female, Experimental value, Oral)
LC50 inhalation rat (mg/l)	34.1 mg/l air (Equivalent or similar to OECD 403, 4 h, Rat, Male / female, Experimental value, Inhalation (vapours), 14 day(s))
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h

1,2-dichloropropane (78-87-5)	
LD50 oral rat	1900 mg/kg (Rat; Experimental value; 2200 mg/kg bodyweight; Rat)
LD50 dermal rat	10404 mg/kg (Rat)
LD50 dermal rabbit	8750 mg/kg (Rabbit; Experimental value; 10100 mg/kg bodyweight; Rabbit)
LC50 inhalation rat (mg/l)	9.4 mg/l air (4 h, Rat, Male / female, Experimental value, Inhalation (vapours), 14 day(s))
LC50 inhalation rat (ppm)	2000 ppm/4h (Rat; Experimental value)
ATE US (oral)	1900 mg/kg body weight
ATE US (dermal)	8750 mg/kg body weight
ATE US (gases)	2000 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h

cis-1,3-Dichloropropene (10061-01-5)	
ATE US (oral)	100 mg/kg body weight
ATE US (dermal)	300 mg/kg body weight
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h

1,3-dichloropropene, trans- (10061-02-6)	
ATE US (oral)	100 mg/kg body weight
ATE US (dermal)	1100 mg/kg body weight
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h

ethylbenzene (100-41-4)	
LD50 oral rat	3500 mg/kg (Rat; Other; Experimental value)
LD50 dermal rabbit	15415 mg/kg (Rabbit; Literature study; Other; 15432 mg/kg; Rabbit; Experimental value)
LC50 inhalation rat (mg/l)	17.8 mg/l/4h (Rat; Literature study)
LC50 inhalation rat (ppm)	4000 ppm/4h (Rat; Literature study)
ATE US (oral)	3500 mg/kg body weight
ATE US (dermal)	15415 mg/kg body weight
ATE US (gases)	4000 ppmV/4h
ATE US (vapors)	17.8 mg/l/4h
ATE US (dust, mist)	17.8 mg/l/4h

ethyl methacrylate (97-63-2)	
LD50 oral rat	13424 mg/kg body weight (Rat, Experimental value, Oral)
LD50 dermal rabbit	> 9100 mg/kg body weight (Rabbit, Experimental value, Dermal)
LC50 inhalation rat (mg/l)	55 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Experimental value, Inhalation, 14 day(s))
ATE US (oral)	13424 mg/kg body weight
ATE US (vapors)	55 mg/l/4h
ATE US (dust, mist)	55 mg/l/4h

hexachlorobuta-1,3-diene (87-68-3)	
LD50 oral rat	90 mg/kg (Rat, Oral)
LD50 dermal rabbit	1211 mg/kg (Rabbit, Dermal)
ATE US (oral)	90 mg/kg body weight
ATE US (dermal)	1211 mg/kg body weight

iodomethane (74-88-4)	
LD50 oral rat	80 – 132 mg/kg (OECD 401: Acute Oral Toxicity, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 dermal rabbit	> 2000 mg/kg body weight (OECD 402: Acute Dermal Toxicity, 24 h, Rabbit, Male / female, Experimental value, Dermal, 14 day(s))
LC50 inhalation rat (mg/l)	4.07 mg/l (EPA OPPTS 870.1300: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Experimental value, Inhalation (vapours), 14 day(s))
ATE US (oral)	80 mg/kg body weight
ATE US (dermal)	1100 mg/kg body weight
ATE US (gases)	700 ppmV/4h
ATE US (vapors)	4.07 mg/l/4h
ATE US (dust, mist)	4.07 mg/l/4h

Isopropylbenzene (98-82-8)	
LD50 oral rat	> 2000 mg/kg (Other, Rat, Literature study, Oral)
LD50 dermal rabbit	10578 mg/kg (Other, Rabbit, Literature study, Dermal)
LC50 inhalation rat (mg/l)	40 mg/l (Other, 4 h, Rat, Literature study, Inhalation)
ATE US (dermal)	10578 mg/kg body weight
ATE US (vapors)	40 mg/l/4h
ATE US (dust, mist)	40 mg/l/4h

Methylene Chloride (75-09-2)	
LD50 oral rat	> 2000 mg/kg body weight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Experimental value, Oral)
LD50 dermal rat	> 2000 mg/kg body weight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal)

naphthalene (91-20-3)	
LD50 oral rat	> 1100 mg/kg (Rat)
LD50 dermal rat	> 2500 mg/kg (Rat)
LD50 dermal rabbit	> 20000 mg/kg (Rabbit)
ATE US (oral)	500 mg/kg body weight

2-nitropropane (79-46-9)	
LD50 oral rat	565 – 885 mg/kg body weight (Rat, Experimental value)
LD50 dermal rabbit	> 2000 mg/kg (24 h, Rabbit, Male / female, Experimental value, Dermal)
LC50 inhalation rat (ppm)	400 ppm (6 h, Rat, Male, Experimental value, Inhalation (vapours))
ATE US (oral)	565 mg/kg body weight
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h

styrene (100-42-5)	
LD50 oral rat	5000 mg/kg (Rat; Literature study; >6000 mg/kg bodyweight; Rat; Weight of evidence)
LD50 dermal rat	2820 mg/kg (Rat; Literature study; OECD 402: Acute Dermal Toxicity; >2000 mg/kg bodyweight; Rat; Experimental value)
LD50 dermal rabbit	5010 mg/kg (Rabbit; Literature study)
LC50 inhalation rat (mg/l)	12 mg/l/4h (Rat; Literature study)
LC50 inhalation rat (ppm)	2770 ppm/4h (Rat; Literature study)
ATE US (oral)	5000 mg/kg body weight
ATE US (dermal)	2820 mg/kg body weight
ATE US (gases)	2770 ppmV/4h
ATE US (vapors)	12 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h

1,1,1,2-tetrachloroethane (630-20-6)	
LD50 oral rat	670 mg/kg (Rat, Literature study, Oral)
LD50 dermal rabbit	20000 mg/kg (Rabbit, Literature study, Dermal)
LC50 inhalation rat (mg/l)	14.4 mg/l (4 h, Rat, Converted value, Inhalation (vapours))
ATE US (oral)	670 mg/kg body weight
ATE US (dermal)	20000 mg/kg body weight
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	14.4 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h

1,1,2,2-tetrachloroethane (79-34-5)	
LD50 oral rat	250 mg/kg (Rat, Literature study, Oral)
LD50 dermal rabbit	3990 mg/kg (Rabbit, Literature study, Dermal)
LC50 inhalation rat (mg/l)	8.6 mg/l (4 h, Rat, Literature study, Inhalation)
ATE US (oral)	250 mg/kg body weight
ATE US (dermal)	5 mg/kg body weight
ATE US (gases)	100 ppmV/4h
ATE US (vapors)	8.6 mg/l/4h
ATE US (dust, mist)	0.05 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)

tetrachloroethylene (127-18-4)	
LC50 inhalation rat (ppm)	3786 ppm/4h (Rat; Experimental value)
ATE US (gases)	3786 ppmV/4h
ATE US (vapors)	27.58 mg/l/4h
ATE US (dust, mist)	27.58 mg/l/4h

toluene (108-88-3)	
LD50 oral rat	> 2000 mg/kg (Rat; Equivalent or similar to OECD 401; Literature study; 5580 mg/kg bodyweight; Rat; Experimental value)
LD50 dermal rabbit	12223 mg/kg (Rabbit; Literature study; Other; >5000 mg/kg bodyweight; Rabbit; Experimental value)
LC50 inhalation rat (mg/l)	> 20 mg/l/4h (Rat; Literature study)
ATE US (dermal)	12223 mg/kg body weight

1,1,2-trichloroethane (79-00-5)	
LD50 oral rat	837 mg/kg body weight (Rat, Male, Experimental value, Oral)
LD50 dermal rabbit	5380 mg/kg body weight (OECD 402: Acute Dermal Toxicity, 24 h, Rabbit, Male, Experimental value, Dermal)
LC50 inhalation rat (mg/l)	9000 mg/m³ air (OECD 403: Acute Inhalation Toxicity, 6 h, Rat, Male, Experimental value, Inhalation (vapours))
ATE US (oral)	837 mg/kg body weight
ATE US (dermal)	1100 mg/kg body weight
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 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 US (oral)	4920 mg/kg body weight
ATE US (gases)	12000 ppmV/4h
ATE US (vapors)	66 mg/l/4h
ATE US (dust, mist)	66 mg/l/4h

1,2,3-trichloropropane (96-18-4)	
LD50 oral rat	442 mg/kg (Rat, Oral)
LD50 dermal rabbit	850 mg/kg (Rabbit, Dermal)
ATE US (oral)	442 mg/kg body weight
ATE US (dermal)	850 mg/kg body weight
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h

methanol (67-56-1)	
LD50 oral rat	> 5000 mg/kg (Rat; BASF test; Literature study; 1187-2769 mg/kg bodyweight; Rat; Weight of evidence)
LD50 dermal rabbit	15800 mg/kg (Rabbit; Literature study)
LC50 inhalation rat (mg/l)	85 mg/l/4h (Rat; Literature study)
LC50 inhalation rat (ppm)	64000 ppm/4h (Rat; Literature study)
ATE US (oral)	100 mg/kg body weight
ATE US (dermal)	300 mg/kg body weight
ATE US (gases)	700 ppmV/4h
ATE US (vapors)	3 mg/l/4h
ATE US (dust, mist)	0.5 mg/l/4h

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Not classified

Respiratory or skin sensitization : May cause an allergic skin reaction.

Germ cell mutagenicity : May cause genetic defects.
Based on available data, the classification criteria are not met

Carcinogenicity : May cause cancer.

benzene (71-43-2)	
National Toxicology Program (NTP) Status	Known Human Carcinogens

bromodichloromethane (75-27-4)	
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen

carbon tetrachloride (56-23-5)	
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen

chloroform (67-66-3)	
IARC group	2B - Possibly carcinogenic to humans
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen

2-chloro-1,3-butadiene, inhibited (126-99-8)	
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen

1,2-dibromo-3-chloropropane (96-12-8)	
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen

1,2-Dibromoethane (106-93-4)	
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen

1,4-dichlorobenzene (106-46-7)	
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen

1,2-dichloroethane (107-06-2)	
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen

1,2-dichloropropane (78-87-5)	
IARC group	1 - Carcinogenic to humans

ethylbenzene (100-41-4)	
IARC group	2B - Possibly carcinogenic to humans

Isopropylbenzene (98-82-8)	
IARC group	2B - Possibly carcinogenic to humans
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen

Methylene Chloride (75-09-2)	
IARC group	2A - Probably carcinogenic to humans
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen

naphthalene (91-20-3)	
IARC group	2B - Possibly carcinogenic to humans
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen

2-nitropropane (79-46-9)	
IARC group	2B - Possibly carcinogenic to humans
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen

styrene (100-42-5)	
IARC group	2B - Possibly carcinogenic to humans
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen

1,1,1,2-tetrachloroethane (630-20-6)	
IARC group	2B - Possibly carcinogenic to humans

1,1,2,2-tetrachloroethane (79-34-5)	
IARC group	2B - Possibly carcinogenic to humans

tetrachloroethylene (127-18-4)	
IARC group	2A - Probably carcinogenic to humans
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen

toluene (108-88-3)	
IARC group	3 - Not classifiable

trichloroethylene (79-01-6)	
IARC group	1 - Carcinogenic to humans
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen

1,2,3-trichloropropane (96-18-4)	
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen

Reproductive toxicity : Not classified
Based on available data, the classification criteria are not met

STOT-single exposure : Causes damage to organs.

STOT-repeated exposure : Not classified

Aspiration hazard : Not classified

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

Symptoms/effects : Not expected to present a significant hazard under anticipated conditions of normal use.

SECTION 12: Ecological information

12.1. Toxicity

allyl chloride (107-05-1)	
LC50 fish 1	0.32 mg/l (96 h, Pimephales promelas, Static system, Literature study, Nominal concentration)

benzene (71-43-2)	
LC50 fish 1	5.3 mg/l (Equivalent or similar to OECD 203, 96 h, Oncorhynchus mykiss, Flow-through system, Fresh water, Experimental value)
EC50 Daphnia 1	10 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value)
ErC50 (algae)	100 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, GLP)

carbon tetrachloride (56-23-5)	
LC50 fish 1	24.3 mg/l (OECD 203: Fish, Acute Toxicity Test, 4 day(s), Danio rerio, Flow-through system, Fresh water, Experimental value)
EC50 other aquatic organisms 1	180 mg/l (Plankton, Literature)
ErC50 (algae)	20 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, Nominal concentration)

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)
ErC50 (algae)	13.3 mg/l (Other, 72 h, Chlamydomonas reinhardtii, Static system, Fresh water, Experimental value)

2-chloro-1,3-butadiene, inhibited (126-99-8)	
LC50 fish 1	> 5.25 mg/l (EU Method C.1, 96 h, Danio rerio, Semi-static system, Fresh water, Experimental value, GLP)
EC50 Daphnia 1	11.31 mg/l (EU Method C.2, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Locomotor effect)
ErC50 (algae)	19.9 mg/l (EU Method C.3, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Experimental value, GLP)

1,2-dibromo-3-chloropropane (96-12-8)	
LC50 fish 1	20 mg/l (48 h, Lepomis macrochirus)

1,2-Dibromoethane (106-93-4)	
LC50 fish 1	1.13 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Oncorhynchus mykiss, Static system, Fresh water, Experimental value, GLP)
EC50 Daphnia 1	11.61 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, GLP)

1,4-dichlorobenzene (106-46-7)	
LC50 fish 1	1.12 mg/l (96 h, Salmo gairdneri, Flow-through system)
EC50 Daphnia 1	0.7 mg/l (48 h, Daphnia magna, Measured concentration)

1,2-dichloroethane (107-06-2)	
LC50 fish 1	225 mg/l (96 h, Salmo gairdneri, Static system, Literature study)
EC50 Daphnia 1	155 – 220 mg/l (48 h, Daphnia magna, Static system, Literature study)

1,1-dichloroethene (75-35-4)	
LC50 fish 1	107.9 mg/l (Other, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value)
EC50 Daphnia 1	37 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, GLP)
ErC50 (algae)	410 mg/l (Other, 96 h, Desmodesmus subspicatus, Static system, Fresh water, Experimental value, Nominal concentration)

1,2-dichloropropane (78-87-5)	
LC50 fish 1	140 mg/l (EPA 660/3 - 75/009, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value)
EC50 Daphnia 1	2.7 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Semi-static system, Experimental value, GLP)

ethylbenzene (100-41-4)	
LC50 fish 1	4.2 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Salmo gairdneri, Semi-static system, Fresh water, Experimental value)
EC50 Daphnia 1	1.8 – 2.4 mg/l (US EPA, 48 h, Daphnia magna, Static system, Fresh water, Experimental value)
LC50 fish 2	4.2 mg/l (LC50; OECD 203: Fish, Acute Toxicity Test; 96 h; Salmo gairdneri; Semi-static system; Fresh water; Experimental value)

ethyl methacrylate (97-63-2)	
LC50 fish 1	100 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Oncorhynchus mykiss, Flow-through system, Experimental value, GLP)
EC50 Daphnia 1	> 66 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Flow-through system, Fresh water, Experimental value, Locomotor effect)
ErC50 (algae)	> 110 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Fresh water, Experimental value)

hexachlorobuta-1,3-diene (87-68-3)	
LC50 fish 1	0.25 mg/l (96 h, Salmo gairdneri)
EC50 other aquatic organisms 1	0.21 mg/l (96 h, Lymnaea sp.)

iodomethane (74-88-4)	
LC50 fish 1	1.4 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Oncorhynchus mykiss, Static system, Fresh water, Experimental value, GLP)
ErC50 (algae)	2.55 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, GLP)

Isopropylbenzene (98-82-8)	
LC50 fish 1	4.8 mg/l (EPA OTS 797.1400, 96 h, Oncorhynchus mykiss, Flow-through system, Fresh water, Experimental value, GLP)
EC50 Daphnia 1	2.14 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, GLP)

Methylene Chloride (75-09-2)	
LC50 fish 1	193 mg/l (96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value)
EC50 Daphnia 1	168.2 mg/l (48 h, Daphnia magna)

naphthalene (91-20-3)	
EC50 Daphnia 1	2.16 mg/l (EC50; 48 h; Daphnia magna)
LC50 fish 2	0.11 mg/l (LC50; 96 h; Oncorhynchus mykiss)
Threshold limit algae 1	0.4 mg/l (EC50; 72 h; Skeletonema costatum)

2-nitropropane (79-46-9)	
LC50 fish 1	> 612.5 mg/l (EPA 660/3 - 75/009, 96 h, Pimephales promelas, Static system, Fresh water, Experimental value, Nominal concentration)
EC50 Daphnia 1	19 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Flow-through system, Fresh water, Experimental value, GLP)
ErC50 (algae)	> 887 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, GLP)

styrene (100-42-5)	
LC50 fish 1	10 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value, GLP)
EC50 Daphnia 1	4.7 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Flow-through system, Fresh water, Experimental value, GLP)
ErC50 (algae)	4.9 mg/l (EPA OTS 797.1050, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, GLP)

1,1,1,2-tetrachloroethane (630-20-6)	
LC50 fish 1	16 – 24 mg/l (96 h, Lepomis macrochirus, Static system, Literature study)
EC50 Daphnia 1	17 – 30 mg/l (48 h, Daphnia magna, Literature study)

1,1,2,2-tetrachloroethane (79-34-5)	
LC50 fish 1	20.3 ppm (96 h, Pimephales promelas, Flow-through system, Literature study)
EC50 Daphnia 1	9.32 mg/l (48 h, Daphnia magna, Static system, Literature study)

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)

1,1,2-trichloroethane (79-00-5)	
LC50 fish 1	40 mg/l (EPA 660/3 - 75/009, 96 h, Lepomis macrochirus, Static system, Fresh water, Experimental value, Nominal concentration)
ErC50 (algae)	200 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Experimental value, Nominal concentration)

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)

1,2,3-trichloropropane (96-18-4)	
LC50 fish 1	75 mg/l (96 h, Lepomis macrochirus, Static system)
EC50 Daphnia 1	35.4 mg/l (48 h, Daphnia magna, Static system)

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

Custom VOA Cal Mix	
Persistence and degradability	Not established.

allyl chloride (107-05-1)	
Persistence and degradability	Biodegradable in the soil. Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.23 g O_2/g substance
Chemical oxygen demand (COD)	0.86 g O_2/g substance
ThOD	1.7 g O_2/g substance
BOD (% of ThOD)	0.14 (5 day(s), Calculated value)

benzene (71-43-2)	
Persistence and degradability	Biodegradable in the soil. Readily biodegradable in water.
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

bromodichloromethane (75-27-4)	
Persistence and degradability	Not readily biodegradable in water.

carbon tetrachloride (56-23-5)	
Persistence and degradability	Readily biodegradable in water. Readily biodegradable in water in anaerobic conditions.
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

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

2-chloro-1,3-butadiene, inhibited (126-99-8)	
Persistence and degradability	Not readily biodegradable in water.

1,2-dibromo-3-chloropropane (96-12-8)	
Persistence and degradability	Non degradable in the soil. Not readily biodegradable in water.

1,2-Dibromoethane (106-93-4)	
Persistence and degradability	Non degradable in the soil. Not readily biodegradable in water.

1,4-dichlorobenzene (106-46-7)	
Persistence and degradability	Non degradable in the soil. Readily biodegradable in water.
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 the soil. Not readily biodegradable in water.
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.

1,2-dichloropropane (78-87-5)	
Persistence and degradability	Inherently biodegradable. Not readily biodegradable in water. Non degradable in the soil. Highly mobile in soil.
Biochemical oxygen demand (BOD)	0.19 g O_2/g substance
Chemical oxygen demand (COD)	0.84 g O_2/g substance
ThOD	1.13 g O_2/g substance

cis-1,3-Dichloropropene (10061-01-5)	
Persistence and degradability	Biodegradable in the soil. Not readily biodegradable in water.

1,3-dichloropropene, trans- (10061-02-6)	
Persistence and degradability	Biodegradable in the soil. Not readily biodegradable in water.

ethylbenzene (100-41-4)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Low potential for adsorption in soil.
Biochemical oxygen demand (BOD)	1.44 g O_2/g substance (20d.)
Chemical oxygen demand (COD)	2.1 g O_2/g substance
ThOD	3.17 g O_2/g substance
BOD (% of ThOD)	45.4 (20 days)

ethyl methacrylate (97-63-2)	
Persistence and degradability	Readily biodegradable in water.

hexachlorobuta-1,3-diene (87-68-3)	
Persistence and degradability	Biodegradability in soil: no data available. Readily biodegradable in water.

iodomethane (74-88-4)	
Persistence and degradability	Not readily biodegradable in water.

Isopropylbenzene (98-82-8)	
Persistence and degradability	Biodegradable in the soil. Inherently biodegradable. Not readily biodegradable in water.
Biochemical oxygen demand (BOD)	1.28 g O_2/g substance
Chemical oxygen demand (COD)	2.42 g O_2/g substance
ThOD	3.2 g O_2/g substance
BOD (% of ThOD)	0.4

Methylene Chloride (75-09-2)	
Persistence and degradability	Biodegradable in the soil. Not readily biodegradable in water.

naphthalene (91-20-3)	
Persistence and degradability	Readily biodegradable in water. Forming sediments in water. Biodegradable in the soil. Adsorbs into the soil. Photolysis in the air.
Biochemical oxygen demand (BOD)	0 g O_2/g substance
Chemical oxygen demand (COD)	0.22 g O_2/g substance
ThOD	2.99 g O_2/g substance

2-nitropropane (79-46-9)	
Persistence and degradability	Not readily biodegradable in water.
Chemical oxygen demand (COD)	4.098 g O_2/g substance

styrene (100-42-5)	
Persistence and degradability	Readily biodegradable in water. Non degradable in the soil. Low potential for adsorption in soil. Photodegradation in the air.
Chemical oxygen demand (COD)	2.8 g O_2/g substance
ThOD	3.07 g O_2/g substance
BOD (% of ThOD)	0.42

1,1,1,2-tetrachloroethane (630-20-6)	
Persistence and degradability	Readily biodegradable in water.

1,1,2,2-tetrachloroethane (79-34-5)	
Persistence and degradability	Non degradable in the soil. 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

toluene (108-88-3)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Low potential for adsorption in soil.
Biochemical oxygen demand (BOD)	2.15 g O_2/g substance
Chemical oxygen demand (COD)	2.52 g O_2/g substance
ThOD	3.13 g O_2/g substance
BOD (% of ThOD)	0.69

1,1,2-trichloroethane (79-00-5)	
Persistence and degradability	Non degradable in the soil. Not readily biodegradable in water.

trichloroethylene (79-01-6)	
Persistence and degradability	Not readily biodegradable in water. Non degradable in the soil. Biodegradable in the soil under anaerobic conditions.

1,2,3-trichloropropane (96-18-4)	
Persistence and degradability	Non degradable in the soil. Not readily biodegradable in water.

methanol (67-56-1)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Highly mobile in soil.
Biochemical oxygen demand (BOD)	0.6 – 1.12 g O_2/g substance
Chemical oxygen demand (COD)	1.42 g O_2/g substance
ThOD	1.5 g O_2/g substance
BOD (% of ThOD)	0.8 (Literature study)

12.3. Bioaccumulative potential

Custom VOA Cal Mix	
Bioaccumulative potential	Not established.

allyl chloride (107-05-1)	
BCF fish 1	< 5.6 (OECD 305: Bioconcentration: Flow-Through Fish Test, 42 day(s), Cyprinus carpio, Flow-through system, Fresh water, Experimental value, Fresh weight)
Partition coefficient n-octanol/water (Log Pow)	2.1 (Experimental value, Equivalent or similar to OECD 117, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

benzene (71-43-2)	
BCF fish 1	< 10 (OECD 305: Bioconcentration: Flow-Through Fish Test, 3 day(s), Leuciscus idus, Flow-through system, Fresh water, Experimental value)
Partition coefficient n-octanol/water (Log Pow)	2.13 (Experimental value, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

bromodichloromethane (75-27-4)	
Partition coefficient n-octanol/water (Log Pow)	1.88 – 2.24
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

carbon tetrachloride (56-23-5)	
BCF fish 1	30 (Equivalent or similar to OECD 305, 21 day(s), Lepomis macrochirus, Flow-through system, Fresh water, Experimental value, Fresh weight)
Partition coefficient n-octanol/water (Log Pow)	2.75 – 2.83 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

chloroform (67-66-3)	
BCF fish 1	4.1 – 13 (OECD 305: Bioconcentration: Flow-Through Fish Test, 42 day(s), Cyprinus carpio, Flow-through system, Fresh water, Experimental value)

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)
Partition coefficient n-octanol/water (Log Pow)	1.97 (Experimental value; 20 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

2-chloro-1,3-butadiene, inhibited (126-99-8)	
BCF fish 1	21.54 l/kg (BCFBAF v3.01, Estimated value, Fresh weight)
Partition coefficient n-octanol/water (Log Pow)	2.525 (QSAR, KOWWIN)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

1,2-dibromo-3-chloropropane (96-12-8)	
BCF fish 1	3.6 – 19 (Cyprinus carpio, Test duration: 6 weeks)
Partition coefficient n-octanol/water (Log Pow)	2.43 – 2.96
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

1,2-Dibromoethane (106-93-4)	
BCF fish 1	1.6 – 14.9 (6 week(s), Cyprinus carpio, Literature study)
Partition coefficient n-octanol/water (Log Pow)	1.93 (Experimental value, Equivalent or similar to OECD 107)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

1,4-dichlorobenzene (106-46-7)	
BCF fish 1	214 – 720 (Salmo gairdneri, Chronic)
Partition coefficient n-octanol/water (Log Pow)	3.39 – 3.62 (Experimental value)
Bioaccumulative potential	Potential for bioaccumulation (500 ≤ BCF ≤ 5000).

1,4-dichloro-2-butene, (Z)- (1476-11-5)	
Partition coefficient n-octanol/water (Log Pow)	2.6 (Estimated value)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

1,4-dichloro-2-butene, trans- (110-57-6)	
Partition coefficient n-octanol/water (Log Pow)	2.11 – 2.6 (QSAR)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

1,2-dichloroethane (107-06-2)	
BCF fish 1	2 (336 h, Lepomis macrochirus)
Partition coefficient n-octanol/water (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 – 13 (6 week(s), Cyprinus carpio, Experimental value)
Partition coefficient n-octanol/water (Log Pow)	2.13 (Weight of evidence approach, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

1,2-dichloropropane (78-87-5)	
BCF fish 1	0.5 – 7 (BCF; OECD 305: Bioconcentration: Flow-Through Fish Test; 42 days; Cyprinus carpio; Flow-through system; Fresh water; Experimental value)
Partition coefficient n-octanol/water (Log Pow)	1.99 – 2.28 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

cis-1,3-Dichloropropene (10061-01-5)	
Partition coefficient n-octanol/water (Log Pow)	2.06
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

1,3-dichloropropene, trans- (10061-02-6)	
Partition coefficient n-octanol/water (Log Pow)	2
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

ethylbenzene (100-41-4)	
BCF fish 1	1 (BCF; Other; 6 weeks; Oncorhynchus kisutch; Flow-through system; Salt water; Literature study)
BCF fish 2	15 – 79 (BCF)
BCF other aquatic organisms 1	4.68 (BCF)
Partition coefficient n-octanol/water (Log Pow)	3.15 (Experimental value; 3.6; Experimental value; EU Method A.8: Partition Coefficient; 20 °C)

ethylbenzene (100-41-4)	
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

ethyl methacrylate (97-63-2)	
BCF fish 1	8.851 l/kg (BCFBAF v3.01, Estimated value, Fresh weight)
Partition coefficient n-octanol/water (Log Pow)	1.87 (Experimental value, Equivalent or similar to OECD 107, 20 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

hexachlorobuta-1,3-diene (87-68-3)	
BCF fish 1	17000 (Salmo gairdneri)
BCF fish 2	7000 (Pleuronectes platessa, Flow-through system)
BCF other aquatic organisms 1	45.36 (Procambarus sp., Flow-through system)
BCF other aquatic organisms 2	3000 (Mytilus edulis, Flow-through system)
Partition coefficient n-octanol/water (Log Pow)	3.74 – 4.90
Bioaccumulative potential	High potential for bioaccumulation (BCF > 5000).

iodomethane (74-88-4)	
Partition coefficient n-octanol/water (Log Pow)	1.57 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

Isopropylbenzene (98-82-8)	
BCF fish 1	35.5 (Carassius auratus)
BCF other aquatic organisms 1	94.69 (BCFBAF v3.00, Calculated value)
Partition coefficient n-octanol/water (Log Pow)	3.66 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

Methylene Chloride (75-09-2)	
BCF fish 1	2 – 40 (OECD 305: Bioconcentration: Flow-Through Fish Test, 6 week(s), Cyprinus carpio, Semi-static system, Fresh water, Experimental value, GLP)
Partition coefficient n-octanol/water (Log Pow)	1.25 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 20 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

naphthalene (91-20-3)	
BCF fish 1	23 – 168 (BCF; 8 weeks; Cyprinus carpio)
Partition coefficient n-octanol/water (Log Pow)	3.3 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

2-nitropropane (79-46-9)	
BCF fish 1	8.4 (6 week(s), Cyprinus carpio, Literature study)
Partition coefficient n-octanol/water (Log Pow)	1.35 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 20 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

styrene (100-42-5)	
BCF fish 1	35.5 (BCF)
Partition coefficient n-octanol/water (Log Pow)	2.96 (Experimental value; OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method; 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

1,1,1,2-tetrachloroethane (630-20-6)	
Partition coefficient n-octanol/water (Log Pow)	2.93 (Estimated value)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

1,1,2,2-tetrachloroethane (79-34-5)	
BCF fish 1	4.1 – 13.2 (Cyprinus carpio, Literature study, Chronic)
Partition coefficient n-octanol/water (Log Pow)	2.39 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

tetrachloroethylene (127-18-4)	
BCF fish 2	25.8 – 77.1 (BCF; 8 weeks)
Partition coefficient n-octanol/water (Log Pow)	3.4 (Experimental value; 2.53; Experimental value; Equivalent or similar to OECD 107; 23 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

toluene (108-88-3)	
BCF fish 2	90 (BCF; 72 h; Leuciscus idus; Static system; Fresh water)
Partition coefficient n-octanol/water (Log Pow)	2.73 (Experimental value; Other; 20 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

1,1,2-trichloroethane (79-00-5)	
BCF fish 1	0.7 – 6.7 (OECD 305: Bioconcentration: Flow-Through Fish Test, 6 week(s), Cyprinus carpio, Flow-through system, Experimental value, Fresh weight)
Partition coefficient n-octanol/water (Log Pow)	1.89 (Experimental value)
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)
Partition coefficient n-octanol/water (Log Pow)	2.29 – 2.42 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

1,2,3-trichloropropane (96-18-4)	
BCF fish 1	5.3 – 13 (Cyprinus carpio, Chronic)
Partition coefficient n-octanol/water (Log Pow)	2.27 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

methanol (67-56-1)	
BCF fish 1	< 10 (BCF; 72 h; Leuciscus idus)
Partition coefficient n-octanol/water (Log Pow)	-0.77 (Experimental value; Other)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in soil

allyl chloride (107-05-1)	
Partition coefficient n-octanol/water (Log Koc)	1.67 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Highly mobile in soil.

benzene (71-43-2)	
Surface tension	0.029 N/m (20 °C)
Partition coefficient n-octanol/water (Log Koc)	2.13 (log Koc, Calculated value)
Ecology - soil	Low potential for adsorption in soil.

carbon tetrachloride (56-23-5)	
Surface tension	0.027 N/m (20 °C)
Partition coefficient n-octanol/water (Log Koc)	1.69 (log Koc, EPA OTS 796.2750: Sediment and Soil Adsorption Isotherm, Experimental value)
Ecology - soil	Highly mobile in soil. May be harmful to plant growth, blooming and fruit formation. Soil contaminant.

chloroform (67-66-3)	
Surface tension	0.0271 N/m (20 °C)
Partition coefficient n-octanol/water (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.

2-chloro-1,3-butadiene, inhibited (126-99-8)	
Partition coefficient n-octanol/water (Log Koc)	1.83 (log Koc, Calculated value)
Ecology - soil	Highly mobile in soil.

1,2-dibromo-3-chloropropane (96-12-8)	
Ecology - soil	No (test)data on mobility of the substance available.

1,2-Dibromoethane (106-93-4)	
Surface tension	0.038 N/m (20 °C)
Partition coefficient n-octanol/water (Log Koc)	0.314 (log Koc, OECD 121: Estimation of the Adsorption Coefficient (Koc) on Soil and on Sewage Sludge using High Performance Liquid Chromatography (HPLC), Experimental value, GLP)
Ecology - soil	Highly mobile in soil.

1,4-dichlorobenzene (106-46-7)	
Surface tension	0.03 N/m (55 °C)
Ecology - soil	Adsorbs into the soil.

1,4-dichloro-2-butene, (Z)- (1476-11-5)	
Surface tension	0.024 N/m (20 °C)
Partition coefficient n-octanol/water (Log Koc)	2.33 (log Koc, Experimental value)

1,4-dichloro-2-butene, trans- (110-57-6)	
Surface tension	0.024 N/m (20 °C)
Partition coefficient n-octanol/water (Log Koc)	2.33 (log Koc, Experimental value, Other isomer)

1,2-dichloroethane (107-06-2)	
Surface tension	0.032 N/m (20 °C)
Partition coefficient n-octanol/water (Log Koc)	1.52 (log Koc)
Ecology - soil	Highly mobile in soil.

1,1-dichloroethene (75-35-4)	
Partition coefficient n-octanol/water (Log Koc)	1.503 – 1.848 (log Koc, SRC PCKOCWIN v2.0, QSAR)
Ecology - soil	Highly mobile in soil.

1,2-dichloropropane (78-87-5)	
Surface tension	0.029 N/m (20 °C)
Partition coefficient n-octanol/water (Log Koc)	log Koc,Other; 1.72; Estimated value
Ecology - soil	Highly mobile in soil.

ethylbenzene (100-41-4)	
Surface tension	0.029 N/m
Partition coefficient n-octanol/water (Log Koc)	log Koc,PCKOCWIN v1.66; 2.71; Calculated value; Koc; PCKOCWIN v1.66; 517.8; Calculated value
Ecology - soil	Low potential for adsorption in soil. Toxic to soil organisms.

ethyl methacrylate (97-63-2)	
Partition coefficient n-octanol/water (Log Koc)	1.222 – 1.933 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Highly mobile in soil.

hexachlorobuta-1,3-diene (87-68-3)	
Ecology - soil	Soil contaminant.

iodomethane (74-88-4)	
Surface tension	0.026 N/m (43 °C)
Partition coefficient n-octanol/water (Log Koc)	1.15 – 1.79 (log Koc, OECD 106: Adsorption/Desorption Using a Batch Equilibrium Method, Experimental value, GLP)
Ecology - soil	Highly mobile in soil.

Isopropylbenzene (98-82-8)	
Partition coefficient n-octanol/water (Log Koc)	2.946 (log Koc, Calculated value)
Ecology - soil	Low potential for adsorption in soil.

Methylene Chloride (75-09-2)	
Surface tension	0.028 N/m (20 °C)
Ecology - soil	Low potential for adsorption in soil. May be harmful to plant growth, blooming and fruit formation.

naphthalene (91-20-3)	
Surface tension	0.03 N/m (100 °C)

2-nitropropane (79-46-9)	
Surface tension	0.03 N/m (20 °C)
Ecology - soil	Low potential for adsorption in soil.

styrene (100-42-5)	
Surface tension	0.032 N/m (19 °C)
Partition coefficient n-octanol/water (Log Koc)	Koc,352; Estimated value; log Koc; 2.55; Estimated value
Ecology - soil	Low potential for adsorption in soil.

1,1,1,2-tetrachloroethane (630-20-6)	
Surface tension	0.033 N/m (20 °C)
Ecology - soil	No (test)data on mobility of the substance available.

1,1,2,2-tetrachloroethane (79-34-5)	
Surface tension	0.035 N/m (20 °C)
Ecology - soil	No (test)data on mobility of the substance available.

tetrachloroethylene (127-18-4)	
Surface tension	0.0313 N/m (20 °C)
Partition coefficient n-octanol/water (Log Koc)	Koc,141; Experimental value; log Koc; 2.15; Experimental value

toluene (108-88-3)	
Surface tension	0.03 N/m (20 °C)

1,1,2-trichloroethane (79-00-5)	
Partition coefficient n-octanol/water (Log Koc)	1.64 – 1.783 (log Koc, SRC PCKOCWIN v2.0, Estimated value)
Ecology - soil	Highly mobile in soil.

trichloroethylene (79-01-6)	
Surface tension	0.03 N/m

1,2,3-trichloropropane (96-18-4)	
Surface tension	0.038 N/m (20 °C)

methanol (67-56-1)	
Surface tension	0.023 N/m (20 °C)
Partition coefficient n-octanol/water (Log Koc)	Koc,PCKOCWIN v1.66; 1; Calculated value

12.5. Other adverse effects

Custom VOA Cal Mix	

allyl chloride (107-05-1)	

benzene (71-43-2)	

bromodichloromethane (75-27-4)	

carbon tetrachloride (56-23-5)	

chloroform (67-66-3)	

2-chloro-1,3-butadiene, inhibited (126-99-8)	

1,2-dibromo-3-chloropropane (96-12-8)	

1,2-Dibromoethane (106-93-4)	

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

1,4-dichloro-2-butene, (Z)- (1476-11-5)	

1,4-dichloro-2-butene, trans- (110-57-6)	

1,2-dichloroethane (107-06-2)	

1,1-dichloroethene (75-35-4)	

1,2-dichloropropane (78-87-5)	

cis-1,3-Dichloropropene (10061-01-5)	

1,3-dichloropropene, trans- (10061-02-6)	

ethylbenzene (100-41-4)	

ethyl methacrylate (97-63-2)	

hexachlorobuta-1,3-diene (87-68-3)	

iodomethane (74-88-4)	

Isopropylbenzene (98-82-8)	

Methylene Chloride (75-09-2)	

naphthalene (91-20-3)	

2-nitropropane (79-46-9)	

styrene (100-42-5)	

1,1,1,2-tetrachloroethane (630-20-6)	

1,1,2,2-tetrachloroethane (79-34-5)	

tetrachloroethylene (127-18-4)	

toluene (108-88-3)	

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

trichloroethylene (79-01-6)	

1,2,3-trichloropropane (96-18-4)	

methanol (67-56-1)	

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Disposal methods

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description	:	UN1992 Flammable liquids, toxic, n.o.s. (methanol ; acetonitrile ; acrylonitrile, inhibited ; 2-hexanone ; benzene ; 1,2-dibromo-3-chloropropane ; 1,3-dichloropropene, trans- ; 1,3-dichloropropene, (Z)- ; 1,2-dichloropropane ; ; toluene ; trichloroethylene), 3 (6.1), I
UN-No.(DOT)	:	UN1992
Proper Shipping Name (DOT)	:	Flammable liquids, toxic, n.o.s. methanol ; acetonitrile ; acrylonitrile, inhibited ; 2-hexanone ; benzene ; 1,2-dibromo-3-chloropropane ; 1,3-dichloropropene, trans- ; 1,3-dichloropropene, (Z)- ; 1,2-dichloropropane ; ; toluene ; trichloroethylene
Class (DOT)	:	3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
Packing group (DOT)	:	I - Great Danger
Subsidiary risk (DOT)	:	6.1 - Class 6.1 - Poisonous materials 49 CFR 173.132
Hazard labels (DOT)	:	3 - Flammable liquid 6.1 - Poison

DOT Packaging Non Bulk (49 CFR 173.xxx)	:	201
DOT Packaging Bulk (49 CFR 173.xxx)	:	243
DOT Symbols	:	G - Identifies PSN requiring a technical name
DOT Special Provisions (49 CFR 172.102)	:	T14 - 6 6 mm Prohibited 178.275(g)(3). TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively. TP13 - Self-contained breathing apparatus must be provided when this hazardous material is transported by sea. TP27 - A portable tank having a minimum test pressure of 4 bar (400 kPa) may be used provided the calculated test pressure is 4 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)	:	None
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	:	Forbidden
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	:	30 L
DOT Vessel Stowage Location	:	E - 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, but is prohibited from carriage on passenger vessels in which the limiting number of passengers is exceeded.
DOT Vessel Stowage Other	:	40 - Stow ‘‘clear of living quarters’’
Emergency Response Guide (ERG) Number	:	131
Other information	:	No supplementary information available.

Transportation of Dangerous Goods

Not applicable

Transport by sea

Transport document description (IMDG)	:	UN 1992 FLAMMABLE LIQUID, TOXIC, N.O.S. (methanol ; acetonitrile ; acrylonitrile, inhibited ; 2-hexanone ; benzene ; 1,2-dibromo-3-chloropropane ; 1,3-dichloropropene, trans- ; 1,3-dichloropropene, (Z)- ; 1,2-dichloropropane ; ethyl methacrylate ; toluene ; trichloroethylene), 3 (6.1), I
UN-No. (IMDG)	:	1992
Proper Shipping Name (IMDG)	:	FLAMMABLE LIQUID, TOXIC, N.O.S.
Class (IMDG)	:	3 - Flammable liquids
Packing group (IMDG)	:	I - substances presenting high danger
Subsidiary risks (IMDG)	:	6.1 - Toxic substances

Air transport

Transport document description (IATA)	:	UN 1992 Flammable liquid, toxic, n.o.s. (methanol ; acetonitrile ; acrylonitrile, inhibited ; 2-hexanone ; benzene ; 1,2-dibromo-3-chloropropane ; 1,3-dichloropropene, trans- ; 1,3-dichloropropene, (Z)- ; 1,2-dichloropropane ; ; toluene ; trichloroethylene), 3 (6.1), I
UN-No. (IATA)	:	1992
Proper Shipping Name (IATA)	:	Flammable liquid, toxic, n.o.s.
Class (IATA)	:	3 - Flammable Liquids
Packing group (IATA)	:	I - Great Danger
Subsidiary hazards (IATA)	:	6.1 - Toxic substances

SECTION 15: Regulatory information

15.1. US Federal regulations

allyl chloride (107-05-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	1000 lb

benzene (71-43-2)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	10 lb
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard Delayed (chronic) health hazard

bromodichloromethane (75-27-4)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	5000 lb

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	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	10 lb

chloroform (67-66-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	10 lb
RQ (Reportable quantity, section 304 of EPA's List of Lists)	10 lb
SARA Section 302 Threshold Planning Quantity (TPQ)	10000 lb

2-chloro-1,3-butadiene, inhibited (126-99-8)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	100 lb

1,2-dibromo-3-chloropropane (96-12-8)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	1 lb

1,2-Dibromoethane (106-93-4)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	1 lb

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	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	100 lb
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard

1,4-dichloro-2-butene, (Z)- (1476-11-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

1,4-dichloro-2-butene, trans- (110-57-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
RQ (Reportable quantity, section 304 of EPA's List of Lists)	500 lb
SARA Section 302 Threshold Planning Quantity (TPQ)	500 lb

1,2-dichloroethane (107-06-2)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	100 lb

1,1-dichloroethene (75-35-4)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	100 lb

1,2-dichloropropane (78-87-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	1000 lb

cis-1,3-Dichloropropene (10061-01-5)
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

1,3-dichloropropene, trans- (10061-02-6)	
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	PMN - PMN - indicates a commenced PMN substance.

ethylbenzene (100-41-4)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	1000 lb

ethyl methacrylate (97-63-2)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Not subject to reporting requirements of the United States SARA Section 313	
CERCLA RQ	1000 lb

hexachlorobuta-1,3-diene (87-68-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	1 lb

iodomethane (74-88-4)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	100 lb

Isopropylbenzene (98-82-8)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	5000 lb

Methylene Chloride (75-09-2)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
Listed on EPA Hazardous Air Pollutant (HAPS)	
EPA TSCA Regulatory Flag	R - R - indicates a substance that is the subject of a TSCA section 6 risk management rule.
CERCLA RQ	1000 lb

naphthalene (91-20-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	100 lb

2-nitropropane (79-46-9)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	10 lb

styrene (100-42-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	1000 lb

1,1,1,2-tetrachloroethane (630-20-6)	
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

1,1,2,2-tetrachloroethane (79-34-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	100 lb

tetrachloroethylene (127-18-4)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	100 lb

toluene (108-88-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	1000 lb

1,1,2-trichloroethane (79-00-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	100 lb

trichloroethylene (79-01-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
Listed on EPA Hazardous Air Pollutant (HAPS)	
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

1,2,3-trichloropropane (96-18-4)
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313

methanol (67-56-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	5000 lb

15.2. International regulations

CANADA

allyl chloride (107-05-1)
Listed on the Canadian DSL (Domestic Substances List)

benzene (71-43-2)
Listed on the Canadian DSL (Domestic Substances List)

bromodichloromethane (75-27-4)
Listed on the Canadian NDSL (Non-Domestic Substances List)

carbon tetrachloride (56-23-5)
Listed on the Canadian DSL (Domestic Substances List)

chloroform (67-66-3)
Listed on the Canadian DSL (Domestic Substances List)

2-chloro-1,3-butadiene, inhibited (126-99-8)
Listed on the Canadian DSL (Domestic Substances List)

1,2-dibromo-3-chloropropane (96-12-8)
Listed on the Canadian NDSL (Non-Domestic Substances List)

1,2-Dibromoethane (106-93-4)
Listed on the Canadian DSL (Domestic Substances List)

1,4-dichlorobenzene (106-46-7)
Listed on the Canadian DSL (Domestic Substances List)

1,4-dichloro-2-butene, (Z)- (1476-11-5)
Listed on the Canadian NDSL (Non-Domestic Substances List)

1,4-dichloro-2-butene, trans- (110-57-6)
Listed on the Canadian NDSL (Non-Domestic Substances List)
1,2-dichloroethane (107-06-2)
Listed on the Canadian DSL (Domestic Substances List)
1,1-dichloroethene (75-35-4)
Listed on the Canadian DSL (Domestic Substances List)
1,2-dichloropropane (78-87-5)
Listed on the Canadian DSL (Domestic Substances List)
cis-1,3-Dichloropropene (10061-01-5)
Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)
1,3-dichloropropene, trans- (10061-02-6)
Listed on the Canadian NDSL (Non-Domestic Substances List)
ethylbenzene (100-41-4)
Listed on the Canadian DSL (Domestic Substances List)
ethyl methacrylate (97-63-2)
Listed on the Canadian DSL (Domestic Substances List)
hexachlorobuta-1,3-diene (87-68-3)
Listed on the Canadian DSL (Domestic Substances List)
iodomethane (74-88-4)
Listed on the Canadian DSL (Domestic Substances List)
Isopropylbenzene (98-82-8)
Listed on the Canadian DSL (Domestic Substances List)
Methylene Chloride (75-09-2)
Listed on the Canadian DSL (Domestic Substances List)
naphthalene (91-20-3)
Listed on the Canadian DSL (Domestic Substances List)
2-nitropropane (79-46-9)
Listed on the Canadian DSL (Domestic Substances List)
styrene (100-42-5)
Listed on the Canadian DSL (Domestic Substances List)
1,1,1,2-tetrachloroethane (630-20-6)
Listed on the Canadian DSL (Domestic Substances List)
1,1,2,2-tetrachloroethane (79-34-5)
Listed on the Canadian DSL (Domestic Substances List)
tetrachloroethylene (127-18-4)
Listed on the Canadian DSL (Domestic Substances List)
toluene (108-88-3)
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)
1,2,3-trichloropropane (96-18-4)
Listed on the Canadian DSL (Domestic Substances List)
methanol (67-56-1)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations
No additional information available

National regulations

allyl chloride (107-05-1)

Listed on EPA Hazardous Air Pollutant (HAPS)

benzene (71-43-2)

Listed on IARC (International Agency for Research on Cancer)
Listed as carcinogen on NTP (National Toxicology Program)
Listed on EPA Hazardous Air Pollutant (HAPS)

bromodichloromethane (75-27-4)

Listed on IARC (International Agency for Research on Cancer)
Listed as carcinogen on NTP (National Toxicology Program)

carbon tetrachloride (56-23-5)

Listed on IARC (International Agency for Research on Cancer)
Listed as carcinogen on NTP (National Toxicology Program)
Listed on EPA Hazardous Air Pollutant (HAPS)

chloroform (67-66-3)

Listed on IARC (International Agency for Research on Cancer)
Listed as carcinogen on NTP (National Toxicology Program)
Listed on EPA Hazardous Air Pollutant (HAPS)

2-chloro-1,3-butadiene, inhibited (126-99-8)

Listed on IARC (International Agency for Research on Cancer)
Listed as carcinogen on NTP (National Toxicology Program)
Listed on EPA Hazardous Air Pollutant (HAPS)

1,2-dibromo-3-chloropropane (96-12-8)

Listed on IARC (International Agency for Research on Cancer)
Listed as carcinogen on NTP (National Toxicology Program)
Listed on EPA Hazardous Air Pollutant (HAPS)

1,2-Dibromoethane (106-93-4)

Listed on IARC (International Agency for Research on Cancer)
Listed as carcinogen on NTP (National Toxicology Program)
Listed on EPA Hazardous Air Pollutant (HAPS)

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

Listed on IARC (International Agency for Research on Cancer)
Listed as carcinogen on NTP (National Toxicology Program)
Listed on EPA Hazardous Air Pollutant (HAPS)

1,2-dichloroethane (107-06-2)

Listed on IARC (International Agency for Research on Cancer)
Listed as carcinogen on NTP (National Toxicology Program)
Listed on EPA Hazardous Air Pollutant (HAPS)

1,1-dichloroethene (75-35-4)

Listed on IARC (International Agency for Research on Cancer)
Listed on EPA Hazardous Air Pollutant (HAPS)

1,2-dichloropropane (78-87-5)

Listed on IARC (International Agency for Research on Cancer)
Listed on EPA Hazardous Air Pollutant (HAPS)

ethylbenzene (100-41-4)

Listed on IARC (International Agency for Research on Cancer)
Listed on EPA Hazardous Air Pollutant (HAPS)

hexachlorobuta-1,3-diene (87-68-3)

Listed on EPA Hazardous Air Pollutant (HAPS)

iodomethane (74-88-4)

Listed on EPA Hazardous Air Pollutant (HAPS)

Isopropylbenzene (98-82-8)
Listed on IARC (International Agency for Research on Cancer) Listed as carcinogen on NTP (National Toxicology Program) Listed on EPA Hazardous Air Pollutant (HAPS)

Methylene Chloride (75-09-2)
Listed on IARC (International Agency for Research on Cancer) Listed as carcinogen on NTP (National Toxicology Program) Listed on EPA Hazardous Air Pollutant (HAPS)

naphthalene (91-20-3)
Listed on IARC (International Agency for Research on Cancer) Listed as carcinogen on NTP (National Toxicology Program) Listed on EPA Hazardous Air Pollutant (HAPS)

2-nitropropane (79-46-9)
Listed on IARC (International Agency for Research on Cancer) Listed as carcinogen on NTP (National Toxicology Program) Listed on EPA Hazardous Air Pollutant (HAPS)

styrene (100-42-5)
Listed on IARC (International Agency for Research on Cancer) Listed as carcinogen on NTP (National Toxicology Program) Listed on EPA Hazardous Air Pollutant (HAPS)

1,1,1,2-tetrachloroethane (630-20-6)
Listed on IARC (International Agency for Research on Cancer)

1,1,2,2-tetrachloroethane (79-34-5)
Listed on IARC (International Agency for Research on Cancer) Listed on EPA Hazardous Air Pollutant (HAPS)

tetrachloroethylene (127-18-4)
Listed on IARC (International Agency for Research on Cancer) Listed as carcinogen on NTP (National Toxicology Program) Listed on EPA Hazardous Air Pollutant (HAPS)

toluene (108-88-3)
Listed on EPA Hazardous Air Pollutant (HAPS)

1,1,2-trichloroethane (79-00-5)
Listed on EPA Hazardous Air Pollutant (HAPS)

trichloroethylene (79-01-6)
Listed on IARC (International Agency for Research on Cancer) Listed as carcinogen on NTP (National Toxicology Program) Listed on EPA Hazardous Air Pollutant (HAPS)

1,2,3-trichloropropane (96-18-4)
Listed on IARC (International Agency for Research on Cancer) Listed as carcinogen on NTP (National Toxicology Program)

methanol (67-56-1)
Listed on EPA Hazardous Air Pollutant (HAPS)

15.3. US State regulations

benzene (71-43-2)					
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)	Maximum allowable dose level (MADL)
Yes	Yes	No	Yes	6.4 µg/day	

bromodichloromethane (75-27-4)					
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)	Maximum allowable dose level (MADL)
Yes	No	No	No	5 µg/day	

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 - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	No	No	No	5 µg/day	

chloroform (67-66-3)					
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)	Maximum allowable dose level (MADL)
Yes	Yes	No	No	20 µg/day	

2-chloro-1,3-butadiene, inhibited (126-99-8)					
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)	Maximum allowable dose level (MADL)
Yes	No	No	No		

1,2-dibromo-3-chloropropane (96-12-8)					
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)	Maximum allowable dose level (MADL)
Yes	No	No	Yes	0.1 µg/day	3.1 µg/day (oral); 4.3 µg/day (inhalation)

1,2-Dibromoethane (106-93-4)					
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)	Maximum allowable dose level (MADL)
Yes	Yes	No	Yes	0.2 µg/day	

1,4-dichlorobenzene (106-46-7)					
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)	Maximum allowable dose level (MADL)
Yes	No	No	No	20 µg/day	

1,2-dichloroethane (107-06-2)					
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)	Maximum allowable dose level (MADL)
Yes	No	No	No	10 µg/day	

1,1-dichloroethene (75-35-4)					
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)	Maximum allowable dose level (MADL)
Yes	No	No	No		

1,2-dichloropropane (78-87-5)					
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)	Maximum allowable dose level (MADL)
Yes	No	No	No	9.7 µg/day	

ethylbenzene (100-41-4)					
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)	Maximum allowable dose level (MADL)
Yes	No	No	No	54 µg/day	

hexachlorobuta-1,3-diene (87-68-3)					
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)	Maximum allowable dose level (MADL)
Yes	No	No	No		

iodomethane (74-88-4)					
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)	Maximum allowable dose level (MADL)
Yes	No	No	No		

Isopropylbenzene (98-82-8)					
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)	Maximum allowable dose level (MADL)
Yes	No	No	No		

Methylene Chloride (75-09-2)					
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)	Maximum allowable dose level (MADL)
Yes	No	No	No	50 µg/day	

naphthalene (91-20-3)					
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)	Maximum allowable dose level (MADL)
Yes	No	No	No	5.8 µg/day	

2-nitropropane (79-46-9)					
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)	Maximum allowable dose level (MADL)
Yes	No	No	No		

styrene (100-42-5)					
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)	Maximum allowable dose level (MADL)
Yes	No	No	No	27 µg/day	

1,1,1,2-tetrachloroethane (630-20-6)					
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)	Maximum allowable dose level (MADL)
Yes	No	No	No		

1,1,2,2-tetrachloroethane (79-34-5)					
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)	Maximum allowable dose level (MADL)
Yes	No	No	No	3 µg/day	

tetrachloroethylene (127-18-4)					
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)	Maximum allowable dose level (MADL)
Yes	No	No	No	14 µg/day	

toluene (108-88-3)					
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)	Maximum allowable dose level (MADL)
No	Yes	No	No		7000 µg/day

1,1,2-trichloroethane (79-00-5)					
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)	Maximum allowable dose level (MADL)
Yes	No	No	No	10 µg/day	

trichloroethylene (79-01-6)					
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)	Maximum allowable dose level (MADL)
Yes	Yes	No	Yes	14 µg/day	

1,2,3-trichloropropane (96-18-4)					
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)	Maximum allowable dose level (MADL)
Yes	No	No	No		

methanol (67-56-1)					
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)	Maximum allowable dose level (MADL)
No	Yes	No	No		47000 µg/day (inhalation); 23,000 µg/day (oral)

SECTION 16: Other information

Revision date : 12/12/2019

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.

Full text of H-phrases:

H224	Extremely flammable liquid and vapour
H301	Toxic if swallowed
H311	Toxic in contact with skin
H317	May cause an allergic skin reaction
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

Phenova US SDS REV