Safety Data Sheet

Mix VOC in methanol

Version：V2.0.0.1
Report No.：BWQ9292-2016-MSDS-EP
Creation Date：2026/01/12
Revision Date：-

*Prepared in accordance with EU REACH Regulation (REACH 1907/2006 with amendment 2020/878)

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

1.1 Product identifier

Product Name	Mix VOC in methanol
Cat No.	BWQ9292-2016
CAS No.	Not applicable
EC No.	Not applicable
Molecular Formula	Not applicable
REACH Registration Number	-
UFI	No information available

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

Relevant identified uses	Please consult manufacturer.
Uses advised against	Please consult manufacturer.

1.3 Details of the supplier of the Safety Data Sheet

Name of the company	Weiyel Inc
Address of the company	Hedian Light Industrial Park, Chengguan Town, Shangcheng County, Xinyang City, Henan Province, China
Post code	465350
Telephone number	010-58103678
Fax number	010-84840368
E-mail address	info@weiyel.com

1.4 Emergency telephone number

Emergency telephone number	010-58103678
Opening hours	24h

2 Hazards identification

2.1 CLP classification according to Regulation (EC) No. 1272/2008 with amendment 2023/707

Flammable liquids	Category 2
Acute Toxicity - Oral	Category 3
Acute Toxicity - Dermal	Category 3
Acute Toxicity - Inhalation	Category 3
Specific target organ toxicity - single exposure	Category 1

2.2 Label elements

Hazard pictograms	
Signal word	Danger

Hazard statements

H225	Highly flammable liquid and vapour
H301	Toxic if swallowed
H311	Toxic in contact with skin
H331	Toxic if inhaled
H370	Causes damage to organs

Precautionary statements

Prevention

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof [electrical/ventilating/lighting] equipment.
P242	Use non-sparking tools.
P243	Take action to prevent static discharges.
P260	Do not breathe gas/mist/vapour/spray.
P264	Wash hands and other parts of the body (if related) thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Response

P311	Call a POISON CENTER/ doctor.
P321	Specific treatment (see related instructions on the label).
P330	Rinse mouth.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P302+P352	IF ON SKIN: Wash with plenty of water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P311	IF exposed or concerned: Call a POISON CENTER/ doctor.
P361+P364	Take off immediately all contaminated clothing and wash it before reuse.
P370+P378	Small fire: dry chemical, CO_2 or alcohol-resistant foam; Large fire: alcohol-resistant foam; Fire involving tanks, rail tank cars or highway tanks: Fight fire from maximum distance or use unmanned master stream devices or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].

Storage

P405	Store locked up.

P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.

◆ Disposal

P501	Dispose of contents/container in accordance with local/regional/national/ international regulations.

2.3 Other hazards

◆ Results of PBT and vPvB assessment

Component	Results of PBT and vPvB assessment [according to (EC) No 1907/2006]
Methanol	Not PBT/vPvB
Chloroethylene	Not PBT/vPvB
Dichloromethane	Not PBT/vPvB
trans-dichloroethylene	Not PBT/vPvB
cis-dichloroethylene	Insufficient information, temporarily unable to evaluate
Chloroform	Not PBT/vPvB
1,1,1-trichloroethane	Insufficient information, temporarily unable to evaluate
Carbon tetrachloride	Not PBT/vPvB
Benzene	Not PBT/vPvB
1,2-dichloroethane	Not PBT/vPvB
Trichloroethylene	Not PBT/vPvB
1,2-dichloropropane	Not PBT/vPvB
Toluene	Not PBT/vPvB
1,1,2-trichloroethane	Insufficient information, temporarily unable to evaluate
Tetrachloroethylene	Not PBT/vPvB
Chlorobenzene	Not PBT/vPvB
Ethylbenzene	Not PBT/vPvB
m-xylene	Not PBT/vPvB
p-xylene	Not PBT/vPvB
o-xylene	Not PBT/vPvB
Styrene	Not PBT/vPvB
Bromoform	Not PBT/vPvB
1,4-dichlorobenzene	Not PBT/vPvB
1,2-dichlorobenzene	Not PBT/vPvB
1,3,5-trichlorobenzene	Insufficient information, temporarily unable to evaluate
1,2,4-trichlorobenzene	Insufficient information, temporarily unable to evaluate
1,2,3-trichlorobenzene	Insufficient information, temporarily unable to evaluate

◆ Results of endocrine disrupting properties assessment

Component	Results of endocrine disrupting properties assessment [according to (EU) No

	2017/2100 or (EU) No 2018/605]
Methanol	Insufficient information, temporarily unable to evaluate
Chloroethylene	Insufficient information, temporarily unable to evaluate
Dichloromethane	Insufficient information, temporarily unable to evaluate
trans-dichloroethylene	Insufficient information, temporarily unable to evaluate
cis-dichloroethylene	Insufficient information, temporarily unable to evaluate
Chloroform	Insufficient information, temporarily unable to evaluate
1,1,1-trichloroethane	Insufficient information, temporarily unable to evaluate
Carbon tetrachloride	Insufficient information, temporarily unable to evaluate
Benzene	Insufficient information, temporarily unable to evaluate
1,2-dichloroethane	Insufficient information, temporarily unable to evaluate
Trichloroethylene	Insufficient information, temporarily unable to evaluate
1,2-dichloropropane	Insufficient information, temporarily unable to evaluate
Toluene	Insufficient information, temporarily unable to evaluate
1,1,2-trichloroethane	Insufficient information, temporarily unable to evaluate
Tetrachloroethylene	Insufficient information, temporarily unable to evaluate
Chlorobenzene	Insufficient information, temporarily unable to evaluate
Ethylbenzene	Insufficient information, temporarily unable to evaluate
m-xylene	Insufficient information, temporarily unable to evaluate
p-xylene	Insufficient information, temporarily unable to evaluate
o-xylene	Insufficient information, temporarily unable to evaluate
Styrene	Insufficient information, temporarily unable to evaluate
Bromoform	Insufficient information, temporarily unable to evaluate
1,4-dichlorobenzene	Insufficient information, temporarily unable to evaluate
1,2-dichlorobenzene	Insufficient information, temporarily unable to evaluate
1,3,5-trichlorobenzene	Insufficient information, temporarily unable to evaluate
1,2,4-trichlorobenzene	Insufficient information, temporarily unable to evaluate
1,2,3-trichlorobenzene	Insufficient information, temporarily unable to evaluate

◆ Other

	Not applicable.

3 Composition/information on ingredients

3.1 Substance

	Not applicable

3.2 Mixture

Component	Weight % content(or range)	Classification according to Regulation (EC) No. 1272/2008 with amendment 2023/707 [CLP]	Specific Conc. Limits, M-factors
Methanol	99.99001	Flammable liquids, Category 2, H225;	H370:C ≥ 10%|H371:3% ≤

CAS : 67-56-1 EC : 200-659-6 Index No. : 603-001-00-X		Acute Toxicity - Oral, Category 3, H301; Acute Toxicity - Dermal, Category 3, H311; Acute Toxicity - Inhalation, Category 3, H331; Specific target organ toxicity - single exposure, Category 1, H370	C < 10%
Chloroethylene CAS : 75-01-4 EC : 200-831-0 Index No. : 602-023-00-7	0.000384	Flammable gases, Category 1A, Flammable Gas, H220; Gases under pressure, Compressed gas, H280; Carcinogenicity, Category 1A, H350	-
Dichloromethane CAS : 75-09-2 EC : 200-838-9 Index No. : 602-004-00-3	0.000384	Carcinogenicity, Category 2, H351	-
trans-dichloroethylene CAS : 156-60-5 EC : 205-860-2 Index No. : 602-026-00-3	0.000384	Flammable liquids, Category 2, H225; Acute Toxicity - Inhalation, Category 4, H332; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 3, H412	-
cis-dichloroethylene CAS : 156-59-2 EC : 205-859-7 Index No. : 602-026-00-3	0.000384	Flammable liquids, Category 2, H225; Acute Toxicity - Inhalation, Category 4, H332; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 3, H412	-
Chloroform CAS : 67-66-3 EC : 200-663-8 Index No. : 602-006-00-4	0.000384	Acute Toxicity - Oral, Category 4, H302; Skin Corrosion/Irritation, Category 2, H315; Serious eye damage/irritation, Category 2, H319; Acute Toxicity - Inhalation, Category 3, H331; Carcinogenicity, Category 2, H351; Reproductive toxicity, Category 2, H361; Specific target organ toxicity - repeated exposure, Category 1, H372	-
1,1,1-trichloroethane CAS : 71-55-6 EC : 200-756-3 Index No. : 602-013-00-2	0.000384	Acute Toxicity - Inhalation, Category 4, H332; Hazardous to the ozone layer, Category 1, H420	-
Carbon tetrachloride CAS : 56-23-5 EC : 200-262-8 Index No. : 602-008-00-5	0.000384	Acute Toxicity - Oral, Category 3, H301; Acute Toxicity - Dermal, Category 3, H311; Acute Toxicity - Inhalation, Category 3, H331; Carcinogenicity, Category 2, H351; Specific target organ toxicity - repeated exposure, Category 1, H372; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 3, H412; Hazardous to the ozone layer, Category 1, H420	H372:C ≥ 1%|H373:0.2% ≤ C < 1%
Benzene CAS : 71-43-2 EC : 200-753-7 Index No. : 601-020-00-8	0.000384	Flammable liquids, Category 2, H225; Aspiration hazard, Category 1, H304; Skin Corrosion/Irritation, Category 2, H315; Serious eye damage/irritation, Category 2, H319; Germ cell mutagenicity, Category 1B, H340; Carcinogenicity, Category 1A, H350; Specific target organ toxicity - repeated exposure, Category 1, H372	-
1,2-dichloroethane CAS : 107-06-2 EC : 203-458-1 Index No. : 602-012-00-7	0.000384	Flammable liquids, Category 2, H225; Acute Toxicity - Oral, Category 4, H302; Skin Corrosion/Irritation, Category 2, H315; Serious eye damage/irritation, Category 2, H319; Specific target organ toxicity - single exposure; respiratory tract irritation, Category 3, H335; Carcinogenicity, Category 1B, H350	-

Trichloroethylene CAS : 79-01-6 EC : 201-167-4 Index No. : 602-027-00-9	0.000384	Skin Corrosion/Irritation, Category 2, H315; Serious eye damage/irritation, Category 2, H319; Specific target organ toxicity - single exposure; narcotic effects, Category 3, H336; Germ cell mutagenicity, Category 2, H341; Carcinogenicity, Category 1B, H350; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 3, H412	-
1,2-dichloropropane CAS : 78-87-5 EC : 201-152-2 Index No. : 602-020-00-0	0.000384	Flammable liquids, Category 2, H225; Acute Toxicity - Oral, Category 4, H302; Acute Toxicity - Inhalation, Category 4, H332; Carcinogenicity, Category 1B, H350	-
Toluene CAS : 108-88-3 EC : 203-625-9 Index No. : 601-021-00-3	0.000384	Flammable liquids, Category 2, H225; Aspiration hazard, Category 1, H304; Skin Corrosion/Irritation, Category 2, H315; Specific target organ toxicity - single exposure; narcotic effects, Category 3, H336; Reproductive toxicity, Category 2, H361; Specific target organ toxicity - repeated exposure, Category 2, H373	-
1,1,2-trichloroethane CAS : 79-00-5 EC : 201-166-9 Index No. : 602-014-00-8	0.000384	Acute Toxicity - Oral, Category 4, H302; Acute Toxicity - Dermal, Category 4, H312; Acute Toxicity - Inhalation, Category 4, H332; Carcinogenicity, Category 2, H351; Repeated exposure may cause skin dryness or cracking, EUH066	-
Tetrachloroethylene CAS : 127-18-4 EC : 204-825-9 Index No. : 602-028-00-4	0.000384	Carcinogenicity, Category 2, H351; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 2, H411	-
Chlorobenzene CAS : 108-90-7 EC : 203-628-5 Index No. : 602-033-00-1	0.000384	Flammable liquids, Category 3, H226; Skin Corrosion/Irritation, Category 2, H315; Acute Toxicity - Inhalation, Category 4, H332; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 2, H411	-
Ethylbenzene CAS : 100-41-4 EC : 202-849-4 Index No. : 601-023-00-4	0.000384	Flammable liquids, Category 2, H225; Aspiration hazard, Category 1, H304; Acute Toxicity - Inhalation, Category 4, H332; Specific target organ toxicity - repeated exposure, Category 2, H373	-
m-xylene CAS : 108-38-3 EC : 203-576-3 Index No. : 601-022-00-9	0.000384	Flammable liquids, Category 3, H226; Acute Toxicity - Dermal, Category 4, H312; Skin Corrosion/Irritation, Category 2, H315; Acute Toxicity - Inhalation, Category 4, H332	-
p-xylene CAS : 106-42-3 EC : 203-396-5 Index No. : 601-022-00-9	0.000384	Flammable liquids, Category 3, H226; Acute Toxicity - Dermal, Category 4, H312; Skin Corrosion/Irritation, Category 2, H315; Acute Toxicity - Inhalation, Category 4, H332	-
o-xylene CAS : 95-47-6 EC : 202-422-2 Index No. : 601-022-00-9	0.000384	Flammable liquids, Category 3, H226; Acute Toxicity - Dermal, Category 4, H312; Skin Corrosion/Irritation, Category 2, H315; Acute Toxicity - Inhalation, Category 4, H332	-
Styrene CAS : 100-42-5 EC : 202-851-5 Index No. : 601-026-00-0	0.000384	Flammable liquids, Category 3, H226; Skin Corrosion/Irritation, Category 2, H315; Serious eye damage/irritation, Category 2, H319; Acute Toxicity - Inhalation, Category 4, H332;	-

		Reproductive toxicity, Category 2, H361; Specific target organ toxicity - repeated exposure, Category 1, H372	
Bromoform CAS : 75-25-2 EC : 200-854-6 Index No. : 602-007-00-X	0.000384	Acute Toxicity - Oral, Category 4, H302; Skin Corrosion/Irritation, Category 2, H315; Serious eye damage/irritation, Category 2, H319; Acute Toxicity - Inhalation, Category 3, H331; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 2, H411	-
1,4-dichlorobenzene CAS : 106-46-7 EC : 203-400-5 Index No. : 602-035-00-2	0.000384	Serious eye damage/irritation, Category 2, H319; Carcinogenicity, Category 2, H351; Hazardous to the aquatic environment - short-term (acute) hazard, Category 1, H400; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 1, H410	-
1,2-dichlorobenzene CAS : 95-50-1 EC : 202-425-9 Index No. : 602-034-00-7	0.000384	Acute Toxicity - Oral, Category 4, H302; Skin Corrosion/Irritation, Category 2, H315; Serious eye damage/irritation, Category 2, H319; Specific target organ toxicity - single exposure; respiratory tract irritation, Category 3, H335; Hazardous to the aquatic environment - short-term (acute) hazard, Category 1, H400; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 1, H410	-
1,3,5-trichlorobenzene CAS : 108-70-3 EC : 203-608-6 Index No. : -	0.000384	Hazardous to the aquatic environment - long-term (chronic) hazard, Category 2, H411	-
1,2,4-trichlorobenzene CAS : 120-82-1 EC : 204-428-0 Index No. : 602-087-00-6	0.000384	Acute Toxicity - Oral, Category 4, H302; Skin Corrosion/Irritation, Category 2, H315; Hazardous to the aquatic environment - short-term (acute) hazard, Category 1, H400; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 1, H410	-
1,2,3-trichlorobenzene CAS : 87-61-6 EC : 201-757-1 Index No. : -	0.000384	Sensitization - skin, Category 1B, H317; Hazardous to the aquatic environment - short-term (acute) hazard, Category 1, H400; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 1, H410	-

4 First-aid measures

4.1 Description of first aid measures

General advice	Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.
Eye contact	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
Skin contact	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
Ingestion	Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Refer for medical attention.
Inhalation	Fresh air, rest. Refer for medical attention.
Protecting of first-aiders	Ensure that medical personnel are aware of the substance involved. Take

	precautions to protect themselves and prevent spread of contamination.

4.2 Most important symptoms/effects, acute and delayed

1	Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

4.3 Indication of any immediate medical attention and special treatment needed

1	Treat symptomatically.
2	Symptoms may be delayed.

5 Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media	Small fire: dry chemical, CO_2 or alcohol-resistant foam; Large fire: alcohol-resistant foam; Fire involving tanks, rail tank cars or highway tanks: Fight fire from maximum distance or use unmanned master stream devices or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out.
Unsuitable extinguishing media	Use of water spray when fighting fire may be inefficient.

5.2 Specific hazards arising from the substance or mixture

1	Will form explosive mixtures with air.
2	Fire exposed containers may vent contents through pressure relief valves thereby increasing fire intensity and/or vapour concentration.
3	Vapours may travel to source of ignition and flash back.
4	Liquid and vapour are flammable.
5	Development of hazardous combustion gases or vapor possible in the event of fire.
6	May expansion or decompose explosively when heated or involved in fire.

5.3 Advice for firefighters

1	As in any fire, wear self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear.
2	Fight fire from a safe distance, with adequate cover.
3	Prevent fire extinguishing water from contaminating surface water or the ground water system.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

1	Avoid breathing vapours and contacting with skin and eye.
2	Beware of vapours accumulating to form explosive concentrations.
3	Vapours can accumulate in low areas.
4	Emergency personnel wear positive pressure self-contained breathing apparatus. Wear protective and anti-static clothing. Wear chemical impermeable gloves.
5	Use personal protective equipment,do not breathe gas/mist/vapour/spray.
6	Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.
7	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

6.2 Environmental precautions

1	Prevent further leakage or spillage if safe to do so.
2	Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

1	It is recommended that emergency personnel wear positive pressure self-contained breathing apparatus and wear anti-static clothing.
2	In case of small amount of spillage, use clean non sparking tools to collect absorption materials.
3	In case of large amount of spillage, construct cofferdam or dig a hole to collect the spillage. Use foam cover to reduce evaporation. Water spray mist can reduce evaporation, but can not reduce the flammability of the leakage in the restricted space.
4	Collect absorbent material using a clean, non-sparking tool.
5	Cover with anti-solvent foam to reduce evaporation.
6	Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain.
7	Water spray reduces evaporation but does not reduce the flammability of spills in confined spaces.
8	Cut off the source of the leak as much as possible.
9	Keep leaks in a ventilated place.
10	Absorb spilled material in dry sand or inert absorbent. In case of large amount of spillage, contain a spill by bunding.
11	Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.
12	Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container.
13	Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

6.4 Reference to other sections

1	Personal Protective Equipment advice is contained in Section 8 of the SDS.
2	Disposal considerations advice is contained in Section 13 of the SDS.

7 Handling and storage

7.1 Precautions for safe handling

◆ Protective measures

1	Handling is performed in a well ventilated place.
2	Wear suitable protective equipment.
3	Avoid contact with skin and eyes.

◆ Measures to prevent fire

1	Use only non-sparking tools.
2	To prevent fire caused by electrostatic discharge steam, equipment on all metal parts should be grounded.
3	Use explosion proof equipment.
4	Keep away from heat/sparks/open flames/ hot surfaces.

◆ Measures to prevent aerosol and dust generation

1	Not applicable.

◆ Advice on general occupational hygiene

1	Wash hands and face after using the substances.
2	Replace the contaminated clothing immediately.

7.2 Conditions for safe storage, including any incompatibilities

1	Keep containers tightly closed.
2	Keep containers in a dry, cool and well-ventilated place.

3	Keep away from heat/sparks/open flames/hot surfaces.
4	Store away from incompatible materials and foodstuff containers.

7.3 Specific end use(s)

1	In addition to use mentioned in the Section 1.2, unforeseen other specific end uses.

8 Exposure controls/personal protection

8.1 Control parameters

◆Occupational exposure limit values

Component	Country/Region	Limit value - Eight hours		Limit value - Short term	
		ppm	mg/m³	ppm	mg/m³
Methanol	Japan - JSOH(2024–2025)	200	260	-	-
	Permissible exposure standards for workers in the workplace	200	262	250	327.5
	European Union	200	260	-	-
	France	200	260	-	-
	Germany (AGS)	100	130	200	260
	Germany (DFG)	100	130	200	260
Chloroethylene	Japan - JSOH(2024–2025)	1.5(individual excess lifetime risk of cancer 10^-3)	-	-	-
	Permissible exposure standards for workers in the workplace	1	2.6	2	5.2
	European Union	1	2.6	-	-
	France	1	2.59	-	-
	Germany (AGS)	1	2.6	8	20.8
	Italy	1	2.6	-	-
Dichloromethane	Japan - JSOH(2024–2025)	50	173	-	-
	Permissible exposure standards for workers in the workplace	50	174	75	217.5
	European Union	100	353	200	706
	France	50	178	100	356
	Germany (AGS)	50	180	100	360
	Germany (DFG)	50	180	100	360

trans-dichloroethylene	Germany (AGS)	200	800	400	1600
	Germany (DFG)	200	800	400	1600
	United Kingdom	200	806	250	1010
	Austria	200	790	800	3160
	Belgium	200	805	-	-
	Denmark	200	790	400	1580
cis-dichloroethylene	Germany (AGS)	200	800	400	1600
	Germany (DFG)	200	800	400	1600
	United Kingdom	200	806	250	1010
	Austria	200	790	800	3160
	Belgium	200	805	-	-
	Denmark	200	790	400	1580
Chloroform	Japan - JSOH(2024–2025)	3	14.7	-	-
	Permissible exposure standards for workers in the workplace	-	-	-	-
	European Union	2	10	-	-
	France	2	10	-	-
	Germany (AGS)	0.5	2.5	1	5
	Germany (DFG)	0.5	2.5	1	5
1,1,1-trichloroethane	Japan - JSOH(2024–2025)	200	1090	-	-
	Permissible exposure standards for workers in the workplace	350	1910	437.5	1910
	European Union	100	555	200	1110
	France	100	555	200	1110
	Germany (AGS)	100	550	100	550
	Germany (DFG)	100	550	100	550
Carbon tetrachloride	Japan - JSOH(2024–2025)	5	31	-	-
	Permissible exposure standards for workers in the workplace	2	13	4	19.5
	European Union	1	6.4	5	32
	France	1	6.4	5	32
	Germany (AGS)	0.5	3.2	1	6.4

	Germany (DFG)	0.5	3.2	1	6.4
Benzene	Japan - JSOH(2024–2025)	1(individual excess lifetime risk of cancer 10^-3)	-	-	-
	Permissible exposure standards for workers in the workplace	1	3.2	2	6.4
	European Union	0.2	0.66	-	-
	France	1	3.25	-	-
	Germany (AGS)	0.6	1.9	4.8	15.2
	Italy	1	3.25	-	-
1,2-dichloroethane	Japan - JSOH(2024–2025)	10	40	-	-
	Permissible exposure standards for workers in the workplace	10	40	15	60
	European Union	2	8.2	-	-
	France	2	8.2	-	-
	Italy	2	8.2	-	-
	United Kingdom	5	21	-	-
Trichloroethylene	Japan - JSOH(2024–2025)	25	135	-	-
	Permissible exposure standards for workers in the workplace	50	269	75	336.25
	European Union	10	54.7	30	164.1
	France	10	54.7	30	164.1
	Germany (AGS)	6	33	48	264
	Italy	10	54.7	30	164.1
1,2-dichloropropane	Japan - JSOH(2024–2025)	1	4.6	-	-
	Permissible exposure standards for workers in the workplace	75	347	112.5	433.75
	France	75	350	-	-
	Austria	75	350	375	1750
	Belgium	10	47	-	-
	Denmark	75	350	150	700

Toluene	Japan - JSOH(2024–2025)	50	188	-	-
	Permissible exposure standards for workers in the workplace	50	188	75	235
	European Union	50	192	100	384
	France	20	76.8	100	384
	Germany (AGS)	50	190	100	380
	Germany (DFG)	50	190	100	380
1,1,2-trichloroethane	Japan - JSOH(2024–2025)	10	55	-	-
	Permissible exposure standards for workers in the workplace	10	55	15	82.5
	Germany (AGS)	1	5.5	2	11
	Germany (DFG)	1	5.5	2	11
	Austria	10	55	50	275
	Belgium	10	56	-	-
Tetrachloroethylene	Permissible exposure standards for workers in the workplace	50	339	75	423.75
	European Union	20	138	40	275
	France	20	138	40	275
	Germany (AGS)	10	69	20	138
	Germany (DFG)	10	69	20	138
	Italy	20	138	40	275
Chlorobenzene	Japan - JSOH(2024–2025)	10	46	-	-
	Permissible exposure standards for workers in the workplace	75	345	112.5	431.25
	European Union	5	23	15	70
	France	5	23	15	70
	Germany (AGS)	5	23	10	46
	Germany (DFG)	5	23	10	46
Ethylbenzene	Japan - JSOH(2024–2025)	20	87	-	-
	Permissible exposure	100	434	125	542.5

	standards for workers in the workplace				
	European Union	100	442	200	884
	France	20	88.4	100	442
	Germany (AGS)	20	88	40	176
	Germany (DFG)	20	88	40	176
m-xylene	Permissible exposure standards for workers in the workplace	100	434	125	542.5
	European Union	50	221	100	442
	France	50	221	100	442
	Germany (AGS)	50	220	100	440
	Germany (DFG)	50	220	100	440
	Italy	50	221	100	442
p-xylene	Permissible exposure standards for workers in the workplace	100	434	125	542.5
	European Union	50	221	100	442
	France	50	221	100	442
	Germany (AGS)	50	220	100	440
	Germany (DFG)	50	220	100	440
	Italy	50	221	100	442
o-xylene	Permissible exposure standards for workers in the workplace	100	434	125	542.5
	European Union	50	221	100	442
	Germany (AGS)	50	220	100	440
	Germany (DFG)	50	220	100	440
	Italy	50	221	100	442
	United Kingdom	50	220	100	441
Styrene	Japan - JSOH(2024–2025)	10	42.6	-	-
	Permissible exposure standards for workers in the workplace	50	213	75	266.25
	France	23.3	100	46.6	200
	Germany (AGS)	20	86	40	172
	Germany (DFG)	20	86	40	172

	United Kingdom	100	430	250	1080
Bromoform	Japan - JSOH(2024–2025)	1	10.3	-	-
	Permissible exposure standards for workers in the workplace	0.5	5.2	1.5	10.4
	France	0.5	5	-	-
	Austria	0.5	5	-	-
	Belgium	0.5	5.3	-	-
	Denmark	0.5	5	1	10
1,4-dichlorobenzene	Japan - JSOH(2024–2025)	10	60	-	-
	Permissible exposure standards for workers in the workplace	75	450	112.5	562.5
	European Union	2	12	10	60
	France	0.75	4.5	10	60
	Germany (AGS)	2	12	4	24
	Germany (DFG)	2	12	4	24
1,2-dichlorobenzene	Japan - JSOH(2024–2025)	25	150	-	-
	Permissible exposure standards for workers in the workplace	-	-	-	-
	European Union	20	122	50	306
	France	20	122	50	306
	Germany (AGS)	10	61	20	122
	Germany (DFG)	10	61	20	122
1,3,5-trichlorobenzene	Germany (DFG)	0.5	0.38	1	0.76
	Denmark	5	37	10	74
	Finland	5	38	10	75
	Poland	-	15	-	30
1,2,4-trichlorobenzene	Permissible exposure standards for workers in the workplace	-	-	-	-
	European Union	2	15.1	5	37.8
	France	2	15.1	5	37.8
	Germany (AGS)	0.5	3.8	2	15.2

	Germany (DFG)	0.5	0.38	1	0.76
	Italy	2	15.1	5	37.8
1,2,3-trichlorobenzene	Germany (DFG)	0.5	0.38	1	0.76
	Denmark	5	37	10	76
	Finland	5	38	10	75
	Poland	-	15	-	30
	Canada - Ontario	-	-	5	-

◆ Biological limit values

Component	Standard	Biological monitoring index	Biological limits value	Sampling time	Remark
Methanol	USA -ACGIH	Methanol(Urine)	15mg/L	End of shift	
Dichloromethane	SCOEL(EU)	COHb/blood	0.04	Not strictly regulated	
		methylene chloride/urine	0.3mg/L	Not strictly regulated	
		methylene chloride/blood	1.0mg/L	Not strictly regulated	
		Dichloromethane(Urine)	0.3mg/L	End of shift	
1,1,1-trichloroethane	USA -ACGIH	Methyl chloroform(EXA)	20ppm	Prior to last shift of work week	
		Methyl chloroform(Urine)	700μg/L	End of shift	
Benzene	SCOEL(EU)	benzene/blood	28 μg/L	immediately end of shift	
		phenylmercapturic acid/urine	46 μg/L creatinine	end of exposure/shift	
		S-Phenylmercapturic acid(Creatinine in urine)	25μg/g	End of shift	
		t,t-Muconic acid(Creatinine in urine)	500μg/g	End of shift	
Trichloroethylene	SCOEL(EU)	trichloroacetic acid/urine	20mg/L	end of the last shift/work-week/ shift period	
		Trichloroacetic acid(Urine)	15mg/L	End of shift at end of work week	
		Trichloroethanol, without hydrolysis(Blood)	0.5mg/L	End of shift at end of work week	
		Trichloroethylene(Blood)	Semi-quantitative	End of shift at end of work week	
		Trichloroethylene(EXA)	Semi-quantitative	End of shift at end of work week	
Toluene	USA -ACGIH	o-Cresol, with hydrolysis(Creatinine in urine)	0.3mg/g	End of shift	

		Toluene(Urine)	0.03mg/L	End of shift	
		Toluene(Blood)	0.02mg/L	Prior to last shift of work week	
Tetrachloroethylene	SCOEL(EU)	tetrachloroethylene/blood	0.4mg/L	prior to the last shift of a work-week	
		tetrachloroethylene/end-exhaled air	3ppm(0.435mg/m3)	prior to the last shift of a work-week	
		Tetrachloroethylene(EXA)	3ppm	Prior to shift	
		Tetrachloroethylene(Blood)	0.5mg/L	Prior to shift	
Chlorobenzene	USA -ACGIH	4-Chlorocatechol, with hydrolysis(Creatinine in urine)	100mg/g	End of shift at end of work week	
		p-Chlorophenol, with hydrolysis(Creatinine in urine)	20mg/g	End of shift at end of work week	
Ethylbenzene	USA -ACGIH	Sum of mandelic acid and phenylglyoxylic acid(Creatinine in urine)	150mg/g	End of shift	
m-xylene	USA -ACGIH	Methylhippuric acids(Creatinine in urine)	0.3g/g	End of shift	
p-xylene	USA -ACGIH	Methylhippuric acids(Creatinine in urine)	0.3g/g	End of shift	
o-xylene	USA -ACGIH	Methylhippuric acids(Creatinine in urine)	0.3g/g	End of shift	
Styrene	USA -ACGIH	Mandelic acid plus phenylglyoxylic acid(Creatinine in urine)	150mg/g	End of shift	
		Styrene(Urine)	20μg/L	End of shift	

◆ Monitoring methods

1	EN 14042 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
2	GBZ/T 300 and GBZ/T 160 series standard Determination of toxic substances in workplace air.

◆ Derived No effect level (DNEL)

Component	Route of exposure	DNEL for Workers			
		Acute effects (local)	Acute effects (systemic)	Chronic effects (local)	Chronic effects (systemic)
Methanol	Inhalation	No data available	No data available	130 mg/m3	130 mg/m3
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Chloroethylene	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available

	Dermal	No data available	No data available	No data available	No data available
Dichloromethane	Inhalation	No data available	No data available	No data available	176 mg/m3
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
trans-dichloroethylene	Inhalation	No data available	No data available	No data available	797 mg/m3
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
cis-dichloroethylene	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Chloroform	Inhalation	No data available	No data available	2.5 mg/m3	2.5 mg/m3
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
1,1,1-trichloroethane	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Carbon tetrachloride	Inhalation	No data available	No data available	No data available	1.29 mg/m3
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Benzene	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
1,2-dichloroethane	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Trichloroethylene	Inhalation	No data available	No data available	No data available	54.7 mg/m3
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
1,2-dichloropropane	Inhalation	No data available	No data available	No data available	28.88 mg/m3
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Toluene	Inhalation	No data available	No data available	192 mg/m3	192 mg/m3
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
1,1,2-trichloroethane	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available

Tetrachloroethylene	Inhalation	No data available	No data available	No data available	138 mg/m3
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Chlorobenzene	Inhalation	No data available	No data available	No data available	23 mg/m3
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Ethylbenzene	Inhalation	No data available	No data available	No data available	77 mg/m3
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
m-xylene	Inhalation	No data available	No data available	221 mg/m3	221 mg/m3
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
p-xylene	Inhalation	No data available	No data available	221 mg/m3	221 mg/m3
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
o-xylene	Inhalation	No data available	No data available	221 mg/m3	221 mg/m3
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Styrene	Inhalation	No data available	No data available	100 mg/m3	100 mg/m3
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Bromoform	Inhalation	No data available	No data available	No data available	0.592 mg/m3
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
1,4-dichlorobenzene	Inhalation	No data available	No data available	No data available	46.1 mg/m3
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
1,2-dichlorobenzene	Inhalation	No data available	No data available	No data available	4.2 mg/m3
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
1,3,5-trichlorobenzene	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
1,2,4-trichlorobenzene	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
1,2,3-trichloroben	Inhalation	No data available	No data available	No data available	No data available

zene	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available

◆ Predicted No Effect Concentration (PNEC)

Component	A	B	C	D	E	F	G	H
Methanol	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No potential for bioaccumulation
Chloroethylene	77 - 100 µg/L	7.7 - 100 µg/L	400 µg/L	125 - 708 µg/kg sediment dw	70.8 - 125 µg/kg sediment dw	No hazard identified	85 - 103 µg/kg soil dw	43.3 µg/kg food
Dichloromethane	130 - 310 µg/L	31 - 130 µg/L	26 mg/L	163 - 2570 µg/kg sediment dw	163 - 260 µg/kg sediment dw	No hazard identified	173 - 330 µg/kg soil dw	No potential for bioaccumulation
trans-dichloroethylene	36.4 µg/L	3.6 µg/L	17 mg/L	548.3 µg/kg sediment dw	54.8 µg/kg sediment dw	No hazard identified	56.3 µg/kg soil dw	No potential for bioaccumulation
Chloroform	146 µg/L	15 µg/L	48 µg/L	450 µg/kg sediment dw	90 µg/kg sediment dw	No hazard identified	560 µg/kg soil dw	No potential for bioaccumulation
1,1,1-trichloroethane	130 µg/L	13 µg/L	No data available	No data available	No data available	No data available	No data available	No potential for bioaccumulation
Carbon tetrachloride	220 µg/L	22 µg/L	30 mg/L	No data available	No data available	No hazard identified	No data available	222 µg/kg food
Benzene	80 µg/L	8 µg/L	39 mg/L	1.36 mg/kg sediment dw	136 µg/kg sediment dw	No data available	225 µg/kg soil dw	No potential for bioaccumulation
1,2-dichloroethane	1.1 mg/L	110 µg/L	27.8 mg/L	11.1 mg/kg sediment dw	1.11 mg/kg sediment dw	3.4 µg/m³	1.8 mg/kg soil dw	8.33 mg/kg food
Trichloroethylene	115 - 576 µg/L	11.5 µg/L	2.6 mg/L	316 - 10200 µg/kg sediment dw	204 µg/kg sediment dw	No hazard identified	155 - 1700 µg/kg soil dw	13.83 mg/kg food
1,2-dichloropropa	82 - 400	8.2 - 40	590 -	676 -	67.6 -	No	87.9 -	No

ne	µg/L	µg/L	8600 µg/L	4150 µg/kg sediment dw	415 µg/kg sediment dw	hazard identified	600 µg/kg soil dw	potential for bioaccumulation
Toluene	74 - 680 µg/L	7.4 - 680 µg/L	840 - 13610 µg/L	1.78 - 16.39 mg/kg sediment dw	178 - 16390 µg/kg sediment dw	No hazard identified	313 - 2890 µg/kg soil dw	No potential for bioaccumulation
Tetrachloroethylene	51 µg/L	5.1 µg/L	11.2 mg/L	903 µg/kg sediment dw	90.3 µg/kg sediment dw	8.2 µg/m³	10 µg/kg soil dw	No potential for bioaccumulation
Chlorobenzene	8.4 - 250 µg/L	840 - 25000 ng/L	1.4 mg/L	227 - 6750 µg/kg sediment dw	22.7 - 670 µg/kg sediment dw	No hazard identified	40.3 - 1000 µg/kg soil dw	10 mg/kg food
Ethylbenzene	100 µg/L	10 - 100 µg/L	9.6 mg/L	13.7 mg/kg sediment dw	1.37 mg/kg sediment dw	No hazard identified	2.68 mg/kg soil dw	20 mg/kg food
m-xylene	44 µg/L	4.4 µg/L	1.6 mg/L	2.52 mg/kg sediment dw	252 µg/kg sediment dw	No hazard identified	852 µg/kg soil dw	No potential for bioaccumulation
p-xylene	44 µg/L	4.4 µg/L	1.6 mg/L	2.52 mg/kg sediment dw	252 µg/kg sediment dw	No hazard identified	852 µg/kg soil dw	No potential for bioaccumulation
o-xylene	8.8 - 250 µg/L	880 - 250000 ng/L	1.6 - 5 mg/L	500 - 14330 µg/kg sediment dw	50 - 14330 µg/kg sediment dw	No hazard identified	95 - 2410 µg/kg soil dw	No potential for bioaccumulation
Styrene	28 - 40 µg/L	14 - 40 µg/L	5 mg/L	418 - 614 µg/kg sediment dw	307 - 418 µg/kg sediment dw	No hazard identified	146 - 200 µg/kg soil dw	No potential for bioaccumulation
Bromoform	13 µg/L	1.3 µg/L	No hazard identified	49.5 µg/kg sediment dw	4.95 µg/kg sediment dw	No hazard identified	2.26 µg/kg soil dw	No potential for bioaccumulation
1,4-dichlorobenzene	20 µg/L	2 µg/L	8.6 mg/L	980 µg/kg sediment dw	98 µg/kg sediment dw	No data available	108 µg/kg soil dw	10 mg/kg food
1,2-dichlorobenzene	3.7 µg/L	370 ng/L	4.7 mg/L	177 µg/kg sediment dw	17.7 µg/kg sediment dw	No hazard identified	33.3 µg/kg soil dw	5.56 mg/kg food

Note 1:

A: Freshwater; B: Seawater; C: Sewage treatment plant; D: Sediment (freshwater); E: Sediment (seawater); F: Air; G: Soil; H: Secondary poisoning(Hazard for Predators).

Note 2:

The PNEC values of the remaining components not shown in the product are not available yet.

8.2 Exposure controls

8.2.1 Engineering controls

1	Ensure adequate ventilation, especially in confined areas.
2	Ensure that eyewash stations and safety showers are close to the workstation location.
3	Use explosion-proof electrical/ventilating/lighting/equipment.
4	Set up emergency exit and necessary risk-elimination area.

8.2.2 Personal protection equipment

General requirement	
Eye protection	Must wear appropriate safety goggles.
Hand protection	Must wear anti static chemical protective gloves.
Respiratory protection	Must wear appropriate personal dust proof gas mask.
Skin and body protection	Must wear anti static chemical protective clothing and anti static shoes.

8.2.3 Environmental exposure controls

Environmental exposure controls	No information available

9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Clear, colorless liquid
Colour	Clear, colorless liquid
Odor	No information available
Odor threshold	No information available
pH	No information available
Melting point/freezing point(°C)	-98 (Methanol)
Initial boiling point and boiling range(°C)	65 (Methanol)
Flash point(Closed cup,°C)	9 (Methanol)
Evaporation rate	No information available
Flammability	No information available
Upper/lower explosive limits[%(v/v)]	Upper limit : 50 (Methanol); Lower limit : 6 (Methanol)
Vapor pressure	12.9 kPa (20°C,Methanol)
Vapor density(Air = 1)	1.1 (Methanol)

Relative density(Water=1)	0.79 (20°C,Methanol)
Solubility	Miscible with water (Methanol)
n-octanol/water partition coefficient	-0.74 (Methanol)
Auto-ignition temperature(°C)	440 (Methanol)
Decomposition temperature(°C)	No information available
Kinematic viscosity	0.544 mPa (25°C,Methanol)
Explosive properties	No information available
Oxidizing properties	No information available
Particle characteristics	Not applicable

9.2 Other information

9.2.1 Information with regard to physical hazard classes

Information with regard to physical hazard classes	No information available

9.2.2 Other safety characteristics

Other safety characteristics	No information available

10 Stability and reactivity

Stability and reactivity

10.1 Reactivity	Contact with incompatible substances can cause decomposition or other chemical reactions.
10.2 Chemical stability	Stable under proper operation and storage conditions.
10.3 Possibility of hazardous reactions	In contact with oxidants causes severe reactions, and may cause a fire or explosion. Reactions with metals form metal organic coumpounds. In contact with metals, oxidants, triethyl aluminium, amines, boranes and their derivatives may cause an explosion severely. In contact with halides may cause an active reaction.
10.4 Conditions to avoid	Incompatible materials, heat, flame and spark.
10.5 Incompatible materials	Oxidants, alkali metals, alkaline earth metals and aluminum. Metal, oxidantss and alkali. Borane class and its derivatives, amines, metals, oxidants, triethyl aluminium, calcium and ethylene. Halides, oxidants and halogen.
10.6 Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11 Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008 with amendment 2023/707

Mix VOC in methanol	
Skin corrosion/irritation	Based on available data, the classification criteria are not met
Serious eye damage/irritation	Based on available data, the classification criteria are not met
Skin sensitization	Based on available data, the classification criteria are not met
Respiratory sensitization	Based on available data, the classification criteria are not met
Reproductive toxicity	Based on available data, the classification criteria are not met
STOT-single exposure	Causes damage to organs(Category 1)
STOT-repeated exposure	Based on available data, the classification criteria are not met

Aspiration hazard	Based on available data, the classification criteria are not met
Germ cell mutagenicity	Based on available data, the classification criteria are not met

Acute toxicity

Component	LD_{50}(oral)	LD_{50}(dermal)	LC_{50}(inhalation,4h)
Bromoform	933mg/kg(Rat)	No information available	No information available
trans-dichloroethylene	1235mg/kg(Rat)	> 5000mg/kg(Rabbit)	No information available
1,1,2-trichloroethane	836mg/kg(Rat)	5350mg/kg(Rabbit)	No information available
Toluene	636mg/kg(Rat)	12200mg/kg(Rabbit)	49mg/L(Rat)
1,1,1-trichloroethane	9600mg/kg(Rat)	No information available	98.209mg/L(Rat)
1,4-dichlorobenzene	500~5000mg/kg(Rat)	> 2000mg/kg(Rabbit)	No information available
Dichloromethane	1600mg/kg(Rat)	No information available	No information available
Tetrachloroethylene	2629mg/kg(Rat)	No information available	35.269mg/L(Mouse)
1,2,3-trichlorobenzene	1830mg/kg(Rat)	No information available	No information available
Trichloroethylene	4920mg/kg(Rat)	> 20000mg/kg(Rabbit)	45.409mg/L(Mouse)
Ethylbenzene	3500mg/kg(Rat)	15400mg/kg(Rabbit)	No information available
Methanol	5628mg/kg(Rat)	15800mg/kg(Rabbit)	83.867mg/L(Rat)
Chloroform	695mg/kg(Rat)	> 20000mg/kg(Rabbit)	47.702mg/L(Rat)
Benzene	930mg/kg(Rat)	> 8260mg/kg(Rabbit)	No information available
1,2-dichloroethane	670mg/kg(Rat)	2800mg/kg(Rabbit)	No information available
1,2-dichlorobenzene	500mg/kg(Rat)	> 10000mg/kg(Rabbit)	No information available
Chloroethylene	500mg/kg(Rat)	No information available	No information available
p-xylene	5000mg/kg(Rat)	No information available	19.758mg/L(Rat)
Carbon tetrachloride	2350mg/kg(Rat)	> 20000mg/kg(Rabbit)	50.330mg/L(Rat)
1,2,4-trichlorobenzene	756mg/kg(Rat)	6139mg/kg(Rat)	No information available
1,2-dichloropropane	1947mg/kg(Rat)	10100mg/kg(Rabbit)	No information available
1,3,5-trichlorobenzene	800mg/kg(Rat)	No information available	No information available
Chlorobenzene	1110mg/kg(Rat)	No information available	No information available
m-xylene	5000mg/kg(Rat)	12200mg/kg(Rabbit)	No information available
Styrene	2650mg/kg(Rat)	No information available	12mg/L(Rat)

Carcinogenicity

Component	List of carcinogens by the IARC Monographs	Report on Carcinogens by NTP
Methanol	Not Listed	Not Listed
Chloroethylene	Category 1	Category K
Dichloromethane	Category 2A	Category R
trans-dichloroethylene	Not Listed	Not Listed
cis-dichloroethylene	Not Listed	Not Listed

Chloroform	Category 2B	Category R
1,1,1-trichloroethane	Category 2A	Not Listed
Carbon tetrachloride	Category 2B	Category R
Benzene	Category 1	Category K
1,2-dichloroethane	Category 2B	Category R
Trichloroethylene	Category 1	Category K
1,2-dichloropropane	Category 1	Not Listed
Toluene	Category 3	Not Listed
1,1,2-trichloroethane	Category 3	Not Listed
Tetrachloroethylene	Category 2A	Category R
Chlorobenzene	Not Listed	Not Listed
Ethylbenzene	Category 2B	Not Listed
m-xylene	Not Listed	Not Listed
p-xylene	Not Listed	Not Listed
o-xylene	Not Listed	Not Listed
Styrene	Category 2A	Category R
Bromoform	Category 3	Not Listed
1,4-dichlorobenzene	Category 2B	Category R
1,2-dichlorobenzene	Category 3	Not Listed
1,3,5-trichlorobenzene	Not Listed	Not Listed
1,2,4-trichlorobenzene	Not Listed	Not Listed
1,2,3-trichlorobenzene	Not Listed	Not Listed

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

Component	Endocrine disrupting properties
Methanol	No information available
Chloroethylene	No information available
Dichloromethane	No information available
trans-dichloroethylene	No information available
cis-dichloroethylene	No information available
Chloroform	No information available
1,1,1-trichloroethane	No information available
Carbon tetrachloride	No information available
Benzene	No information available
1,2-dichloroethane	No information available
Trichloroethylene	No information available
1,2-dichloropropane	No information available

Toluene	No information available
1,1,2-trichloroethane	No information available
Tetrachloroethylene	No information available
Chlorobenzene	No information available
Ethylbenzene	No information available
m-xylene	No information available
p-xylene	No information available
o-xylene	No information available
Styrene	No information available
Bromoform	No information available
1,4-dichlorobenzene	No information available
1,2-dichlorobenzene	No information available
1,3,5-trichlorobenzene	No information available
1,2,4-trichlorobenzene	No information available
1,2,3-trichlorobenzene	No information available

11.2.2 Other Information

Other Information	See Section 11.1

12 Ecological information

12.1 Toxicity

Acute aquatic toxicity

Component	Fish	Crustaceans	Algae or other aquatic plants
trans-dichloroethylene	LC_{50} :135mg/L (96h)(Fish)	No information available	No information available
1,1,2-trichloroethane	LC_{50} : 40mg/L (96h)(Fish)	EC_{50} : 79.5mg/L (48h)(Crustaceans)	ErC_{50} : 200mg/L (96h)(Algae)
Toluene	LC_{50} : 25mg/L (96h)(Fish)	EC_{50} : 4.1mg/L (48h)(Crustaceans)	ErC_{50} : 29mg/L (72h)(Algae)
1,4-dichlorobenzene	LC_{50} : 2.2mg/L (96h)(Fish)	EC_{50} : 2.5mg/L (48h)(Crustaceans)	ErC_{50} : 5.4mg/L (72h)(Algae)
Tetrachloroethylene	LC_{50} : 14mg/L (96h)(Fish)	EC_{50} : 1.3mg/L (48h)(Crustaceans)	ErC_{50} : 27mg/L (72h)(Algae)
Methanol	LC_{50} : 24000mg/L (96h)(Fish)	EC_{50} : 24500mg/L (48h)(Crustaceans)	No information available
Ethylbenzene	LC_{50} : 4.2mg/L (96h)(Fish)	EC_{50} : 4.75mg/L (48h)(Crustaceans)	ErC_{50} : 3.6mg/L (96h)(Algae)
Trichloroethylene	LC_{50} : 42.4mg/L (96h)(Fish)	EC_{50} : 11mg/L (48h)(Crustaceans)	ErC_{50} : 77mg/L (72h)(Algae)
1,2-dichloroethane	LC_{50} :136mg/L (96h)(Fish)	EC_{50} : 99mg/L (48h)(Crustaceans)	ErC_{50} : 230mg/L (72h)(Algae)
Benzene	LC_{50} : 21.6mg/L (96h)(Fish)	EC_{50} : 10.9mg/L (48h)(Crustaceans)	ErC_{50} : 1600mg/L (96h)(Algae)
1,2-dichlorobenzene	LC_{50} : 6.66mg/L	EC_{50} : 0.7mg/L	ErC_{50} : 71.1mg/L

	(96h)(Fish)	(48h)(Crustaceans)	(96h)(Algae)
Chloroethylene	LC_{50} :210mg/L (96h)(Fish)	No information available	No information available
p-xylene	LC_{50} : 5.5mg/L (96h)(Fish)	EC_{50} : 6.9mg/L (48h)(Crustaceans)	ErC_{50} : 9.6mg/L (72h)(Algae)
1,2,4-trichlorobenzene	LC_{50} : 2.4mg/L (96h)(Fish)	EC_{50} : 2.05mg/L (48h)(Crustaceans)	ErC_{50} : 5.7mg/L (72h)(Algae)
1,3,5-trichlorobenzene	LC_{50} : 3.2mg/L (96h)(Fish)	EC_{50} : 2.9mg/L (48h)(Crustaceans)	ErC_{50} : >4.8mg/L (72h)(Algae)
m-xylene	LC_{50} : 10.6mg/L (96h)(Fish)	EC_{50} : 2.4mg/L (48h)(Crustaceans)	ErC_{50} : 8.9mg/L (72h)(Algae)
Styrene	LC_{50} : 4.02mg/L (96h)(Fish)	EC_{50} : 4.7mg/L (48h)(Crustaceans)	ErC_{50} : 0.72mg/L (96h)(Algae)
cis-dichloroethylene	LC_{50} : 67mg/L (96h)(Fish)	EC_{50} : 40mg/L (48h)(Crustaceans)	ErC_{50} : >74mg/L (72h)(Algae)
Bromoform	LC_{50} : 29mg/L (96h)(Fish)	EC_{50} : 46mg/L (48h)(Crustaceans)	ErC_{50} : 13mg/L (72h)(Algae)
o-xylene	LC_{50} : 16.1mg/L (96h)(Fish)	EC_{50} : 1.1mg/L (48h)(Crustaceans)	ErC_{50} : 0.80mg/L (72h)(Algae)
1,1,1-trichloroethane	LC_{50} : 42.3mg/L (96h)(Fish)	EC_{50} : 11.2mg/L (48h)(Crustaceans)	No information available
Dichloromethane	LC_{50} :193mg/L (96h)(Fish)	EC_{50} : 1470mg/L (48h)(Crustaceans)	No information available
1,2,3-trichlorobenzene	LC_{50} : 3.2mg/L (96h)(Fish)	EC_{50} : 0.46mg/L (48h)(Crustaceans)	ErC_{50} : 0.9mg/L (96h)(Algae)
Chloroform	LC_{50} : > 110mg/L (96h)(Fish)	No information available	No information available
Carbon tetrachloride	LC_{50} : 7.6mg/L (96h)(Fish)	EC_{50} : 8.1mg/L (48h)(Crustaceans)	ErC_{50} : 0.46mg/L (72h)(Algae)
1,2-dichloropropane	LC_{50} :160mg/L (96h)(Fish)	EC_{50} : 30mg/L (48h)(Crustaceans)	ErC_{50} : 83mg/L (96h)(Algae)
Chlorobenzene	LC_{50} : 6.6mg/L (96h)(Fish)	EC_{50} : 5.29mg/L (48h)(Crustaceans)	ErC_{50} : 202mg/L (96h)(Algae)

Chronic aquatic toxicity

Component	Fish	Crustaceans	Algae or other aquatic plants
cis-dichloroethylene	No information available	NOEC : 4.5mg/L(Crustaceans)	NOEC : 74mg/L(Algae)
Toluene	No information available	NOEC : 1.2mg/L(Crustaceans)	NOEC : 9.1mg/L(Algae)
o-xylene	No information available	NOEC : 0.63mg/L(Crustaceans)	NOEC : 0.73mg/L(Algae)
1,4-dichlorobenzene	NOEC : 0.9mg/L(Fish)	NOEC : 0.10mg/L(Crustaceans)	NOEC : 0.83mg/L(Algae)
Tetrachloroethylene	NOEC : 1.9mg/L(Fish)	NOEC : 0.023mg/L(Crustaceans)	NOEC : 9.1mg/L(Algae)
1,2,3-trichlorobenzene	NOEC : 0.32mg/L(Fish)	NOEC : 0.17mg/L(Crustaceans)	NOEC : 0.23mg/L(Algae)
Trichloroethylene	NOEC : 5.76mg/L(Fish)	NOEC : 2.1mg/L(Crustaceans)	NOEC : 45mg/L(Algae)
1,2-dichloroethane	NOEC : 41mg/L(Fish)	NOEC :	NOEC : 55mg/L(Algae)

		1.0mg/L(Crustaceans)	
1,2-dichlorobenzene	NOEC : 0.8mg/L(Fish)	NOEC : <0.10mg/L(Crustaceans)	NOEC : 2.6mg/L(Algae)
p-xylene	No information available	NOEC : 1.3mg/L(Crustaceans)	NOEC : 4.4mg/L(Algae)
Carbon tetrachloride	No information available	NOEC : 0.49mg/L(Crustaceans)	NOEC : 0.12mg/L(Algae)
1,2,4-trichlorobenzene	NOEC : 0.04mg/L(Fish)	NOEC : 0.10mg/L(Crustaceans)	NOEC : 2.2mg/L(Algae)
1,2-dichloropropane	NOEC : 6~11mg/L(Fish)	NOEC : 0.96mg/L(Crustaceans)	NOEC : 11mg/L(Algae)
1,3,5-trichlorobenzene	No information available	NOEC : 0.32mg/L(Crustaceans)	NOEC : 0.59mg/L(Algae)
Chlorobenzene	No information available	NOEC : 0.72mg/L(Crustaceans)	No information available
m-xylene	No information available	NOEC : 0.41mg/L(Crustaceans)	NOEC : 5.3mg/L(Algae)

12.2 Persistence and degradability

Component	Persistence (water/soil)	Persistence (air)
Methanol	Low	Low
trans-dichloroethylene	High	High
cis-dichloroethylene	High	High
1,1,1-trichloroethane	High(Half-life = 546 days)	High(Half-life = 2247.04 days)
1,1,2-trichloroethane	High(Half-life = 730 days)	Medium(Half-life = 81.5 days)
Tetrachloroethylene	High(Half-life = 720 days)	Medium(Half-life = 160.13 days)
m-xylene	High(Half-life = 360 days)	Low(Half-life = 1.08 days)
p-xylene	High(Half-life = 360 days)	Low(Half-life = 1.75 days)
o-xylene	High(Half-life = 360 days)	Low(Half-life = 1.83 days)
Bromoform	High(Half-life = 360 days)	High(Half-life = 541.21 days)
1,2-dichlorobenzene	High(Half-life = 360 days)	Medium(Half-life = 63.67 days)
1,3,5-trichlorobenzene	High	High
1,2,4-trichlorobenzene	High(Half-life = 360 days)	Low(Half-life = 53.5 days)
1,2,3-trichlorobenzene	High	High

12.3 Bioaccumulative potential

Component	Bioaccumulative potential	Comments
Methanol	Low	BCF=10
trans-dichloroethylene	Low	Log Kow=2.09
cis-dichloroethylene	Low	Log Kow=1.9808
1,1,1-trichloroethane	Low	BCF=9
1,1,2-trichloroethane	Low	BCF=17

Tetrachloroethylene	Low	BCF=77.1
m-xylene	Low	BCF=1.37
p-xylene	Low	BCF=2.2
o-xylene	Low	BCF=219
Bromoform	Low	BCF=21
1,2-dichlorobenzene	Low	BCF=260
1,3,5-trichlorobenzene	Medium	Log Kow=4.19
1,2,4-trichlorobenzene	High	BCF=4420
1,2,3-trichlorobenzene	Medium	Log Kow=4.05

12.4 Mobility in soil

Component	log Koc	Remark
Methanol	0.000	
Dichloromethane	1.67	20 ℃
trans-dichloroethylene	1.641	
cis-dichloroethylene	1.641	
Chloroform	2.27	20 ℃
1,1,1-trichloroethane	0.34	20 ℃
Carbon tetrachloride	2.06	20 ℃
Benzene	2.13	20 ℃
Trichloroethylene	2.15	
1,2-dichloropropane	1.67	
Toluene	2.31	20 ℃
1,1,2-trichloroethane	1.831	
Tetrachloroethylene	2.15	20 ℃
Chlorobenzene	2.369	MCI method
Ethylbenzene	3.12	20 ℃
m-xylene	2.73	20 ℃
p-xylene	2.73	20 ℃
o-xylene	2.73	20 ℃
Styrene	2.55	
Bromoform	2.08	
1,2-dichlorobenzene	2.65	20 ℃
1,3,5-trichlorobenzene	2.847	
1,2,4-trichlorobenzene	2.856	
1,2,3-trichlorobenzene	2.87	

12.5 Results of PBT and vPvB assessment

Component	Results of PBT and vPvB assessment [according to (EC) No 1907/2006]
Methanol	Not PBT/vPvB
Chloroethylene	Not PBT/vPvB
Dichloromethane	Not PBT/vPvB
trans-dichloroethylene	Not PBT/vPvB
cis-dichloroethylene	Insufficient information, temporarily unable to evaluate
Chloroform	Not PBT/vPvB
1,1,1-trichloroethane	Insufficient information, temporarily unable to evaluate
Carbon tetrachloride	Not PBT/vPvB
Benzene	Not PBT/vPvB
1,2-dichloroethane	Not PBT/vPvB
Trichloroethylene	Not PBT/vPvB
1,2-dichloropropane	Not PBT/vPvB
Toluene	Not PBT/vPvB
1,1,2-trichloroethane	Insufficient information, temporarily unable to evaluate
Tetrachloroethylene	Not PBT/vPvB
Chlorobenzene	Not PBT/vPvB
Ethylbenzene	Not PBT/vPvB
m-xylene	Not PBT/vPvB
p-xylene	Not PBT/vPvB
o-xylene	Not PBT/vPvB
Styrene	Not PBT/vPvB
Bromoform	Not PBT/vPvB
1,4-dichlorobenzene	Not PBT/vPvB
1,2-dichlorobenzene	Not PBT/vPvB
1,3,5-trichlorobenzene	Insufficient information, temporarily unable to evaluate
1,2,4-trichlorobenzene	Insufficient information, temporarily unable to evaluate
1,2,3-trichlorobenzene	Insufficient information, temporarily unable to evaluate

12.6 Endocrine disrupting properties

Component	Endocrine disrupting properties
Methanol	No information available
Chloroethylene	No information available
Dichloromethane	No information available
trans-dichloroethylene	No information available
cis-dichloroethylene	No information available
Chloroform	No information available
1,1,1-trichloroethane	No information available

Carbon tetrachloride	No information available
Benzene	No information available
1,2-dichloroethane	No information available
Trichloroethylene	No information available
1,2-dichloropropane	No information available
Toluene	No information available
1,1,2-trichloroethane	No information available
Tetrachloroethylene	No information available
Chlorobenzene	No information available
Ethylbenzene	No information available
m-xylene	No information available
p-xylene	No information available
o-xylene	No information available
Styrene	No information available
Bromoform	No information available
1,4-dichlorobenzene	No information available
1,2-dichlorobenzene	No information available
1,3,5-trichlorobenzene	No information available
1,2,4-trichlorobenzene	No information available
1,2,3-trichlorobenzene	No information available

12.7 Other adverse effects

	No information available

13 Disposal considerations

13.1 Waste treatment methods

Waste chemicals	Before disposal should refer to the relevant national and local laws and regulation. Recommend the use of incineration disposal.
Contaminated packaging	Containers may still present chemical hazard when empty. Keep away from hot and ignition source of fire. Return to supplier for recycling if possible.
Disposal recommendations	Refer to section waste chemicals and contaminated packaging.

14 Transport information

Label and Mark

Transporting Label	

IMDG-CODE

14.1 UN number	1993
14.2 UN proper shipping name	FLAMMABLE LIQUID, N.O.S.

14.3 Transport hazard class	3
14.4 Packing group	Ⅱ
14.5 Environmental hazards (Yes or no)	No

IATA-DGR

14.1 UN number	1993
14.2 UN proper shipping name	FLAMMABLE LIQUID, N.O.S.
14.3 Transport hazard class	3
14.4 Packing group	Ⅱ
14.5 Environmental hazards (Yes or no)	No

UN-ADR

14.1 UN number	1993
14.2 UN proper shipping name	FLAMMABLE LIQUID, N.O.S.
14.3 Transport hazard class	3
14.4 Packing group	Ⅱ
14.5 Environmental hazards (Yes or no)	No

Special precautions for user

	Shipment of the goods vehicle exhaust pipe must be equipped with fire retardant devices, prohibit using mechanical equipment and tools of which easy to produce sparks. Transit should be anti-exposure, anti-rain, anti-high temperature. Transportation used tank (tank) cars should be grounded chain, tank can be installed to reduce the partition hole static electricity shocks. Strictly prohibited shipping or transportation with oxidants, acids, food and food additives etc. When bulk transport, Prohibit the use of cement or wooden boats. Transport vehicles should be equipped with the appropriate variety and quantity of fire equipment and emergency equipment leakage during transport. Before transport, should be preceded by checking whether container integrity, sealing. The transport unit must be placarded and marked in accordance with relevant transporting requirements.

Maritime transport in bulk according to IMO instruments

◆Transport in bulk according to Annex II of MARPOL and the IBC code

	Not Available

◆Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

	Not Available

◆Transport in bulk in accordance with the IGC Code

	Not Available

15 Regulatory information

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

International chemical inventory

Component	A	B	C	D	E	F	G	H	I	J	K	L	M

Methanol	√	√	√	√	√	√	√	√	√	√	√	√	√
Chloroethylene	√	√	√	√	√	√	√	√	√	√	√	√	√
Dichloromethane	√	√	√	√	√	√	√	√	√	√	√	√	√
trans-dichloroethylene	√	√	√	√	√	√	√	√	√	√	√	√	√
cis-dichloroethylene	√	√	√	×	√	×	√	√	√	×	×	√	√
Chloroform	√	√	√	√	√	√	√	√	√	√	√	√	√
1,1,1-trichloroethane	√	√	√	√	√	√	√	√	√	√	√	√	√
Carbon tetrachloride	√	√	√	√	√	√	√	√	√	√	√	√	√
Benzene	√	√	√	√	√	√	√	√	√	√	√	√	√
1,2-dichloroethane	√	√	√	√	√	√	√	√	√	√	√	√	√
Trichloroethylene	√	√	√	√	√	√	√	√	√	√	√	√	√
1,2-dichloropropane	√	√	√	√	√	√	√	√	√	√	√	√	√
Toluene	√	√	√	√	√	√	√	√	√	√	√	√	√
1,1,2-trichloroethane	√	√	√	√	√	√	√	√	√	√	√	√	√
Tetrachloroethylene	√	√	√	√	√	√	√	√	√	√	√	√	√
Chlorobenzene	√	√	√	√	√	√	√	√	√	√	√	√	√
Ethylbenzene	√	√	√	√	√	√	√	√	√	√	√	√	√
m-xylene	√	√	√	√	√	√	√	√	√	√	√	√	√
p-xylene	√	√	√	√	√	√	√	√	√	√	√	√	√
o-xylene	√	√	√	√	√	√	√	√	√	√	√	√	√
Styrene	√	√	√	√	√	√	√	√	√	√	√	√	√
Bromoform	√	√	√	√	√	√	√	√	√	√	√	√	√
1,4-dichlorobenzene	√	√	√	√	√	√	√	√	√	√	√	√	√
1,2-dichlorobenzene	√	√	√	√	√	√	√	√	√	√	√	√	√
1,3,5-trichlorobenzene	√	√	√	√	√	√	×	√	√	×	√	√	√
1,2,4-trichlorobenzene	√	√	√	√	√	√	√	√	√	√	√	√	√
1,2,3-trichlorobenzene	√	√	√	√	√	√	√	√	√	√	×	√	√

【A】 China Inventory of Existing Chemical Substances(IECSC)
【B】 European Inventory of Existing Commercial Chemical Substances(EC inventory)
【C】 United States Toxic Substances Control Act Inventory(TSCA)
【D】 Canadian Domestic Substances List(DSL)
【E】 New Zealand Inventory of Chemicals(NZIoC)
【F】 Philippines Inventory of Chemicals and Chemical Substances(PICCS)
【G】 Korea Existing Chemicals Inventory(KECL)
【H】 Australian. Inventory of Industrial Chemical (AIICS)
【I】 Japan Inventory of Existing & New Chemical Substances(ENCS)
【J】 Thailand Existing Chemicals Inventory(TECI)
【K】 Mexico National Inventory of Chemical Substances (INSQ)
【L】 Russia Inventory of Existing Substances (DRAFT)
【M】 Inventory of Existing Chemical Substances in Taiwan, China (TCSI)

List of Chemical Substances under International Conventions

Component	A	B	C
Methanol	×	×	×
Chloroethylene	×	×	×
Dichloromethane	×	×	×
trans-dichloroethylene	×	×	×
cis-dichloroethylene	×	×	×
Chloroform	×	×	×
1,1,1-trichloroethane	√	×	×
Carbon tetrachloride	√	×	×
Benzene	×	×	×
1,2-dichloroethane	×	×	√
Trichloroethylene	×	×	×
1,2-dichloropropane	×	×	×
Toluene	×	×	×
1,1,2-trichloroethane	×	×	×
Tetrachloroethylene	×	×	×
Chlorobenzene	×	×	×
Ethylbenzene	×	×	×
m-xylene	×	×	×
p-xylene	×	×	×
o-xylene	×	×	×
Styrene	×	×	×
Bromoform	×	×	×
1,4-dichlorobenzene	×	×	×
1,2-dichlorobenzene	×	×	×
1,3,5-trichlorobenzene	×	×	×
1,2,4-trichlorobenzene	×	×	×
1,2,3-trichlorobenzene	×	×	×

【A】 The Montreal Protocol on Substances that Deplete the Ozone Layer
【B】 Stockholm Convention on Persistent Organic Pollutants (POPs)
【C】 Rotterdam Convention on the prior informed consent procedure for certain hazardous chemicals and pesticides in international trade

European chemical inventory

Component	A	B	C	D	E	F	G	H	I
Methanol	×	×	√	√	√	√	×	×	×
Chloroethylene	×	×	√	√	√	×	×	×	×
Dichloromethane	×	×	√	√	√	√	√	×	×
trans-dichloroethylene	×	×	×	√	√	×	×	×	×

cis-dichloroethylene	×	×	×	√	×	×	×	×	×
Chloroform	×	×	√	√	√	×	√	×	×
1,1,1-trichloroethane	×	×	×	√	√	×	×	×	×
Carbon tetrachloride	×	×	×	√	√	√	×	×	×
Benzene	×	×	√	√	√	×	√	×	×
1,2-dichloroethane	√	√	√	√	√	×	√	×	×
Trichloroethylene	√	√	√	√	√	×	×	×	×
1,2-dichloropropane	×	×	√	√	√	×	×	×	×
Toluene	×	×	√	√	√	√	×	×	×
1,1,2-trichloroethane	×	×	√	√	√	×	×	×	×
Tetrachloroethylene	×	×	×	√	√	√	×	×	×
Chlorobenzene	×	×	×	√	√	×	×	×	×
Ethylbenzene	×	×	×	√	√	×	×	×	×
m-xylene	×	×	×	√	√	√	×	×	×
p-xylene	×	×	×	√	√	√	×	×	×
o-xylene	×	×	×	√	√	√	×	×	×
Styrene	×	×	×	√	√	×	×	×	×
Bromoform	×	×	×	√	√	×	×	×	×
1,4-dichlorobenzene	×	×	√	√	√	×	×	×	×
1,2-dichlorobenzene	×	×	×	√	√	√	×	×	×
1,3,5-trichlorobenzene	×	×	×	√	√	×	×	×	×
1,2,4-trichlorobenzene	×	×	√	√	√	×	√	×	×
1,2,3-trichlorobenzene	×	×	×	√	√	×	×	×	×

[A] Candidate list of Substances of Very High Concern for authorization under EU REACH regulation
[B] Substances requiring authorisation under EU REACH regulation
[C] Substances restricted under EU REACH
[D] Pre-registered substances under EU REACH
[E] Registered substances under EU REACH
[F] Substance Evaluation – CoRAP under EU REACH
[G] List of priority substances under EU water policy （Directive 2455/2001/EC）
[H] Substances subject to POPs Regulation
[I] Substances proposed as POPs

Note:
"√" Indicates that the substance included in the regulations.
"×" No data or not included in the regulations.

German water hazard class(WGK)

Component	WGK	Remark
Methanol	WGK 2	

Chloroethylene	WGK 2	
Dichloromethane	WGK 2	
trans-dichloroethylene	WGK 2	
cis-dichloroethylene	WGK 2	
Chloroform	WGK 3	
1,1,1-trichloroethane	WGK 3	
Carbon tetrachloride	WGK 3	
Benzene	WGK 3	
1,2-dichloroethane	WGK 3	
Trichloroethylene	WGK 3	
1,2-dichloropropane	WGK 3	
Toluene	WGK 3	
1,1,2-trichloroethane	WGK 3	
Tetrachloroethylene	WGK 3	
Chlorobenzene	WGK 2	
Ethylbenzene	WGK 1	
m-xylene	WGK 2	
p-xylene	WGK 2	
o-xylene	WGK 2	
Styrene	WGK 2	
Bromoform	WGK 3	
1,4-dichlorobenzene	WGK 2	
1,2-dichlorobenzene	WGK 2	
1,3,5-trichlorobenzene	WGK 3	
1,2,4-trichlorobenzene	WGK 3	
1,2,3-trichlorobenzene	WGK 3	

【WGK 1】 slightly hazardous to water
【WGK 2】 obviously hazardous to water
【WGK 3】 highly hazardous to water
【nwg】 non-hazardous to water
【awg】 hazardous to water in general

German technical instructions on air quality control(TA LUFT)

Component	TA LUFT	Remark
Methanol	Chapter 5.2.5 Organic Substances, class I. The following values are in all not allowed to be exceeded in the exhaust gas:Mass flow:0,10 kg/hr or Mass conc.:20 mg/m³	
Chloroethylene	Chapter 5.2.7.1.1 Carcinogenic substances. Class III. As minimum requirement, the following values are in all not allowed to be exceeded in the exhaust gas:Mass flow:2,5 g/hr	

	or Mass conc.:1 mg/m³	
Dichloromethane	Chapter 5.2.5 Organic Substances, class I. The following values are in all not allowed to be exceeded in the exhaust gas:Mass flow:0,10 kg/hr or Mass conc.:20 mg/m³	
trans-dichloroethylene	Chapter 5.2.5 Organic Substances. Class II. The following values are in all not allowed to be exceeded in the exhaust gas:Mass flow: 0,50 kg/hr or Mass conc.: 0,10 g/m³	
cis-dichloroethylene	Chapter 5.2.5 Organic Substances. Class II. The following values are in all not allowed to be exceeded in the exhaust gas:Mass flow: 0,50 kg/hr or Mass conc.: 0,10 g/m³	
Chloroform	Chapter 5.2.7.1.1 Carcinogenic SubstancesThe substance must be assigned to the class (I, II or III) whose substances have the nearest potency. We can not accomplish this evaluation due to insufficiency of data.Carcinogenic substances not mentioned by name and for which no information on potency is available should be assigned to Class I as a precautionary measure.	
1,1,1-trichloroethane	Chapter 5.2.5 Organic Substances. Class II. The following values are in all not allowed to be exceeded in the exhaust gas:Mass flow: 0,50 kg/hr or Mass conc.: 0,10 g/m³	
Carbon tetrachloride	Chapter 5.2.5 Organic Substances, class I. The following values are in all not allowed to be exceeded in the exhaust gas:Mass flow:0,10 kg/hr or Mass conc.:20 mg/m³	
Benzene	Chapter 5.2.7.1.1 Carcinogenic substances. Class II. As minimum requirement, the following values are in all not allowed to be exceeded in the exhaust gas:Mass flow:1,5 g/hr or Mass conc.:0,5 mg/m³	
1,2-dichloroethane	Chapter 5.2.7.1.1 Carcinogenic substances. Class III. As minimum requirement, the following values are in all not allowed to be exceeded in the exhaust gas:Mass flow:2,5 g/hr or Mass conc.:1 mg/m³	
Trichloroethylene	Chapter 5.2.7.1.1 Carcinogenic substances. Class III. As minimum requirement, the following values are in all not allowed to be exceeded in the exhaust gas:Mass flow:2,5 g/hr or Mass conc.:1 mg/m³	
1,2-dichloropropane	Chapter 5.2.7.1.1 Carcinogenic SubstancesThe substance must be assigned to the class (I, II or III) whose substances have the nearest potency. We can not accomplish this evaluation due to insufficiency of	

	data.Carcinogenic substances not mentioned by name and for which no information on potency is available should be assigned to Class I as a precautionary measure.	
Toluene	Chapter 5.2.5 Organic Substances, class I. The following values are in all not allowed to be exceeded in the exhaust gas:Mass flow:0,10 kg/hr or Mass conc.:20 mg/m³	
1,1,2-trichloroethane	Chapter 5.2.5 Organic Substances, class I. The following values are in all not allowed to be exceeded in the exhaust gas:Mass flow:0,10 kg/hr or Mass conc.:20 mg/m³	
Tetrachloroethylene	Chapter 5.2.5 Organic Substances, class I. The following values are in all not allowed to be exceeded in the exhaust gas:Mass flow:0,10 kg/hr or Mass conc.:20 mg/m³	
Ethylbenzene	Chapter 5.2.5 Organic Substances.The following values, specified as overall carbon, are in all not allowed to be exceeded in exhaust gas:Mass flow:0,50 kg/hr or Mass conc.:50 mg/m³ At old units with an annual mass flow till 1,5 Mg/a, specified as total carbon, the emissions in exhaust gas are not allowed to exceed 1,5 kg/h.	
m-xylene	Chapter 5.2.5 Organic Substances.The following values, specified as overall carbon, are in all not allowed to be exceeded in exhaust gas:Mass flow:0,50 kg/hr or Mass conc.:50 mg/m³ At old units with an annual mass flow till 1,5 Mg/a, specified as total carbon, the emissions in exhaust gas are not allowed to exceed 1,5 kg/h.	
p-xylene	Chapter 5.2.5 Organic Substances.The following values, specified as overall carbon, are in all not allowed to be exceeded in exhaust gas:Mass flow:0,50 kg/hr or Mass conc.:50 mg/m³ At old units with an annual mass flow till 1,5 Mg/a, specified as total carbon, the emissions in exhaust gas are not allowed to exceed 1,5 kg/h.	
o-xylene	Chapter 5.2.5 Organic Substances.The following values, specified as overall carbon, are in all not allowed to be exceeded in exhaust gas:Mass flow:0,50 kg/hr or Mass conc.:50 mg/m³ At old units with an annual mass flow till 1,5 Mg/a, specified as total carbon, the emissions in exhaust gas are not allowed to exceed 1,5 kg/h.	
Styrene	Chapter 5.2.5 Organic Substances, class I. The following values are in	

	all not allowed to be exceeded in the exhaust gas:Mass flow:0,10 kg/hr or Mass conc.:20 mg/m³	
Bromoform	Chapter 5.2.5 Organic Substances, class I. The following values are in all not allowed to be exceeded in the exhaust gas:Mass flow:0,10 kg/hr or Mass conc.:20 mg/m³	
1,4-dichlorobenzene	Chapter 5.2.5 Organic Substances, class I. The following values are in all not allowed to be exceeded in the exhaust gas:Mass flow:0,10 kg/hr or Mass conc.:20 mg/m³	
1,3,5-trichlorobenzene	Chapter 5.2.5 Organic Substances, dust,including fine dust.To be treated as overall dust. The emissions of dust in the exhaust gas are not allowed to exceed the following values:Mass flow:0,20 kg/hr or Mass conc.:20 mg/m³ The mass per unit volume of 0,15 g/m³ in exhaust gas is not allowed to be exceeded also on observance or lower deviation of a mass flow of 0,20 kg/h.For emission sources that exceed the mass flow rate of 0.40 kg/h, the mass concentration in waste gas the mass concentration must not exceed 10 mg/m³.	
1,2,3-trichlorobenzene	Chapter 5.2.5 Organic Substances, dust,including fine dust.To be treated as overall dust. The emissions of dust in the exhaust gas are not allowed to exceed the following values:Mass flow:0,20 kg/hr or Mass conc.:20 mg/m³ The mass per unit volume of 0,15 g/m³ in exhaust gas is not allowed to be exceeded also on observance or lower deviation of a mass flow of 0,20 kg/h.For emission sources that exceed the mass flow rate of 0.40 kg/h, the mass concentration in waste gas the mass concentration must not exceed 10 mg/m³.	

German technical rules for hazardous substances(TRGS)

Component	TRGS	Remark
Methanol	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 402|TRGS 401|TRGS 500|TRGS 509|TRGS 510|TRGS 800|TRGS 720|TRGS 721|TRGS 722|TRGS 723|TRGS 724	
Chloroethylene	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 402|TRGS 401|TRGS 407|TRGS 745/TRBS 3145|TRGS 746/TRBS 3146|TRGS 510|TRGS 410|TRGS 500|TRGS 800|TRGS 720|TRGS 721|TRGS 722|TRGS 723|TRGS 724	

Dichloromethane	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 402|TRGS 401|TRGS 500|TRGS 509|TRGS 510	
trans-dichloroethylene	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 402|TRGS 500|TRGS 509|TRGS 510|TRGS 800|TRGS 720|TRGS 721|TRGS 722|TRGS 723|TRGS 724	
cis-dichloroethylene	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 402|TRGS 401|TRGS 500|TRGS 509|TRGS 510|TRGS 800|TRGS 720|TRGS 721|TRGS 722|TRGS 723|TRGS 724	
Chloroform	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 402|TRGS 401|TRGS 410|TRGS 500|TRGS 509|TRGS 510	
1,1,1-trichloroethane	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 402|TRGS 401|TRGS 500|TRGS 509|TRGS 510	
Carbon tetrachloride	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 402|TRGS 401|TRGS 500|TRGS 509|TRGS 510	
Benzene	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 402|TRGS 401|TRGS 410|TRGS 500|TRGS 509|TRGS 510|TRGS 800|TRGS 720|TRGS 721|TRGS 722|TRGS 723|TRGS 724	
1,2-dichloroethane	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 401|TRGS 410|TRGS 500|TRGS 509|TRGS 510|TRGS 800|TRGS 720|TRGS 721|TRGS 722|TRGS 723|TRGS 724	
Trichloroethylene	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 401|TRGS 410|TRGS 500|TRGS 509|TRGS 510	
1,2-dichloropropane	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 401|TRGS 410|TRGS 500|TRGS 509|TRGS 510|TRGS 800|TRGS 720|TRGS 721|TRGS 722|TRGS 723|TRGS 724	
Toluene	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 402|TRGS 401|TRGS 500|TRGS 509|TRGS 510|TRGS 800|TRGS 720|TRGS 721|TRGS 722|TRGS 723|TRGS 724	
1,1,2-trichloroethane	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 402|TRGS 401|TRGS 500|TRGS 509|TRGS 510	
Tetrachloroethylene	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 402|TRGS 401|TRGS 500|TRGS 509|TRGS	

	510	
Chlorobenzene	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 402|TRGS 401|TRGS 500|TRGS 509|TRGS 510|TRGS 800|TRGS 720|TRGS 721|TRGS 722|TRGS 723|TRGS 724	
Ethylbenzene	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 402|TRGS 401|TRGS 500|TRGS 509|TRGS 510|TRGS 800|TRGS 720|TRGS 721|TRGS 722|TRGS 723|TRGS 724	
m-xylene	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 402|TRGS 401|TRGS 500|TRGS 509|TRGS 510|TRGS 800|TRGS 720|TRGS 721|TRGS 722|TRGS 723|TRGS 724	
p-xylene	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 402|TRGS 401|TRGS 500|TRGS 509|TRGS 510|TRGS 800|TRGS 720|TRGS 721|TRGS 722|TRGS 723|TRGS 724	
o-xylene	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 402|TRGS 401|TRGS 500|TRGS 509|TRGS 510|TRGS 800|TRGS 720|TRGS 721|TRGS 722|TRGS 723|TRGS 724	
Styrene	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 402|TRGS 401|TRGS 500|TRGS 509|TRGS 510|TRGS 800|TRGS 720|TRGS 721|TRGS 722|TRGS 723|TRGS 724	
Bromoform	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 401|TRGS 500|TRGS 509|TRGS 510	
1,4-dichlorobenzene	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 402|TRGS 401|TRGS 500|TRGS 509|TRGS 510|TRGS 800	
1,2-dichlorobenzene	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 402|TRGS 401|TRGS 500|TRGS 509|TRGS 510|TRGS 800	
1,3,5-trichlorobenzene	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 402|TRGS 401|TRGS 500|TRGS 509|TRGS 510|TRGS 800|TRGS 720|TRGS 721|TRGS 722|TRGS 723|TRGS 724	
1,2,4-trichlorobenzene	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 402|TRGS 401|TRGS 500|TRGS 509|TRGS 510|TRGS 800	
1,2,3-trichlorobenzene	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 402|TRGS 401|TRGS 500|TRGS 509|TRGS	

	510|TRGS 800	

15.2 Chemical safety assessment

	No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

16 Other information

Information on revision

Creation Date	2026/01/12
Revision Date	-
Reason for revision	-

Reference

[1] IPCS: The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home.
[2] IARC, website: http://www.iarc.fr/.
[3] OECD: The Global Portal to Information on Chemical Substances, website: https://www.echemportal.org/echemportal/.
[4] CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple.
[5] NLM: ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp.
[6] EPA: Integrated Risk Information System, website: http://cfpub.epa.gov/iris/.
[7] U.S. Department of Transportation: ERG, website: http://www.phmsa.dot.gov/hazmat/library/erg.
[8] Germany GESTIS-database on hazard substance, website: http://gestis-en.itrust.de/.

Abbreviations and acronyms

CAS	Chemical Abstracts Service	UN	The United Nations
PC-STEL	Short term exposure limit	OECD	Organization for Economic Co-operation and Development
PC-TWA	Time Weighted Average	IMDG-CODE	International Maritime Dangerous Goods CODE
MAC	Maximum Allowable Concentration	IARC	International Agency for Research on Cancer
DNEL	Derived No Effect Level	ICAO	International Civil Aviation Organization
PNEC	Predicted No Effect Concentration	IATA	International Air Transportation Association
NOEC	No Observed Effect Concentration	ACGIH	American Conference of Governmental Industrial Hygienists
LC_{50}	Lethal Concentration 50%	NFPA	National Fire Protection Association
LD_{50}	Lethal Dose 50%	NTP	National Toxicology Program
EC_{50}	Effective Concentration 50%	PBT	Persistent, Bioaccumulative, Toxic
EC_X	Effective Concentration X%	vPvB	very Persistent, very Bioaccumulative
P_{OW}	Partition coefficient Octanol: Water	CMR	Carcinogens, mutagens or substances toxic to reproduction
BCF	Bioconcentration factor	RPE	Respiratory Protective Equipment
ED	Endocrine disruptor		

Disclaimer

This Safety Data Sheet (SDS) was prepared according to REACH Regulation The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.