

Safety Data Sheet

55 Mix VOCs in methanol

Version : V2.0.0.1

Report No. : BWQ9952-2016-MSDS-US

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Revision Date : -



*Prepared according to American OSHA HCS-2024 (29 CFR 1910.1200)

1 Identification

Product identifier

Product Name	55 Mix VOCs in methanol
Cat No.	BWQ9952-2016
CAS No.	Not applicable
EC No.	Not applicable
Molecular Formula	Not applicable

Recommended use of the product and restrictions on use

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

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

Emergency phone number

Emergency phone number	010-58103678
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2 Hazard(s) identification

Hazard classification according to 29 CFR 1910.1200

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

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(kidneys, central nervous system)

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 with adequate ventilation.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

◆ Response

P321	Specific treatment (see related instructions on the label).
P330	Rinse mouth.
P302+P352	IF ON SKIN: Wash with plenty of water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
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/
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	international regulations.
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Other hazards

	Not applicable.
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Hazard description

Physical and chemical hazards

	Highly flammable liquids, its vapor and air mixture can form explosive mixture.
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Health hazards

Inhaled	Cough. Dizziness. Headache. Nausea. Weakness. Visual disturbance.
Ingestion	Abdominal pain. Shortness of breath. Vomiting. Convulsions. Unconsciousness. (Further see Inhalation).
Skin Contact	MAY BE ABSORBED! Dry skin. Redness.
Eye	Redness. Pain.

Environmental hazards

	Please refer to 12th chapter of SDS.
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3 Composition/information on ingredients

Substance/mixture

	Mixture
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Component	CAS No.	EC No.	Concentration (wt, %)
Methanol	67-56-1	200-659-6	98.625
1,1-dichloroethylene	75-35-4	200-864-0	0.025
Dichloromethane	75-09-2	200-838-9	0.025
trans-dichloroethylene	156-60-5	205-860-2	0.025
1,1-dichloroethane	75-34-3	200-863-5	0.025
2-chlorobuta-1,3-diene	126-99-8	204-818-0	0.025
cis-dichloroethylene	156-59-2	205-859-7	0.025
2,2-dichloropropane	594-20-7	209-832-0	0.025
Bromochloromethane	74-97-5	200-826-3	0.025
Chloroform	67-66-3	200-663-8	0.025
1,1,1-trichloroethane	71-55-6	200-756-3	0.025
Carbon tetrachloride	56-23-5	200-262-8	0.025
1,1-dichloropropene	563-58-6	209-253-3	0.025
Benzene	71-43-2	200-753-7	0.025
1,2-DICHLOROETHANE-D 4	17060-07-0	627-507-5	0.025
Trichloroethylene	79-01-6	201-167-4	0.025
1,2-dichloropropane	78-87-5	201-152-2	0.025
Dibromomethane	74-95-3	200-824-2	0.025

bromodichloromethane	75-27-4	200-856-7	0.025
(Z)-1,3-Dichloro-1-propene	10061-01-5	233-195-8	0.025
Toluene	108-88-3	203-625-9	0.025
trans-1,3-Dichloropropene	10061-02-6	431-460-4	0.025
1,1,2-trichloroethane	79-00-5	201-166-9	0.025
1,3-dichloropropane	142-28-9	205-531-3	0.025
Tetrachloroethylene	127-18-4	204-825-9	0.025
Dibromochloromethane	124-48-1	204-704-0	0.025
1,2-dibromoethane	106-93-4	203-444-5	0.025
Chlorobenzene	108-90-7	203-628-5	0.025
1,1,1,2-tetrachloroethane	630-20-6	211-135-1	0.025
Ethylbenzene	100-41-4	202-849-4	0.025
Bromoform	75-25-2	200-854-6	0.025
Styrene	100-42-5	202-851-5	0.025
o-xylene	95-47-6	202-422-2	0.025
m-xylene	108-38-3	203-576-3	0.025
p-xylene	106-42-3	203-396-5	0.025
Cumene	98-82-8	202-704-5	0.025
Bromobenzene	108-86-1	203-623-8	0.025
1,1,2,2-tetrachloroethane	79-34-5	201-197-8	0.025
1,2,3-trichloropropane	96-18-4	202-486-1	0.025
Propylbenzene	103-65-1	203-132-9	0.025
2-chlorotoluene	95-49-8	202-424-3	0.025
4-chlorotoluene	106-43-4	203-397-0	0.025
Mesitylene	108-67-8	203-604-4	0.025
tert-butylbenzene	98-06-6	202-632-4	0.025
1,2,4-trimethylbenzene	95-63-6	202-436-9	0.025
sec-butylbenzene	135-98-8	205-227-0	0.025
1,2-dichlorobenzene	95-50-1	202-425-9	0.025
p-cymene	99-87-6	202-796-7	0.025
1,3-dichlorobenzene	541-73-1	208-792-1	0.025
1,4-dichlorobenzene	106-46-7	203-400-5	0.025
n-Butylbenzene	104-51-8	203-209-7	0.025
1,2-dibromo-3-chloropropane	96-12-8	202-479-3	0.025
1,2,4-trichlorobenzene	120-82-1	204-428-0	0.025
Hexachlorobuta-1,3-diene	87-68-3	201-765-5	0.025
Naphthalene	91-20-3	202-049-5	0.025

1,2,3-trichlorobenzene	87-61-6	201-757-1	0.025
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4 First-aid measures

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.

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.
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Indication of any immediate medical attention and special treatment needed

1	Treat symptomatically.
2	Symptoms may be delayed.

5 Fire-fighting measures

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.

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	May emit poisonous fumes on fire.
6	Development of hazardous combustion gases or vapor possible in the event of fire.
7	May expansion or decompose explosively when heated or involved in fire.

Special protective equipment and precautions for fire-fighters

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

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	Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire.
6	Do not touch or walk through spilled material.
7	Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
8	Use personal protective equipment, do not breathe gas/mist/vapour/spray.
9	Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.
10	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Environmental precautions

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

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	Do not touch or cross spills.
9	It is recommended that emergency personnel wear positive pressure self-contained breathing apparatus and wear anti-virus suits.
10	Spray water disperses the vapor and dilutes the liquid spill.
11	Do not touch broken containers and spills before putting on appropriate protective clothing.
12	Cut off the source of the leak as much as possible.
13	Keep leaks in a ventilated place.
14	Absorb spilled material in dry sand or inert absorbent. In case of large amount of spillage, contain a spill by bunding.
15	Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.
16	Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container.
17	Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

7 Handling and storage

Precautions for safe handling

1	Avoid inhalation of vapors.
2	Use only non-sparking tools.
3	To prevent fire caused by electrostatic discharge steam, equipment on all metal parts should be grounded.
4	Use explosion proof equipment.
5	Handling is performed in a well ventilated place.
6	Wear suitable protective equipment.
7	Avoid contact with skin and eyes.
8	Keep away from heat/sparks/open flames/ hot surfaces.

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.

8 Exposure controls/personal protection

Control parameters

◆ Occupational exposure limit values

Component	Country/Region	Limit value - Eight hours		Limit value - Short term	
		ppm	mg/m ³	ppm	mg/m ³
Methanol	Japan - JSOH(2024–2025)	200	260	-	-
	Permissible exposure standards for workers in the workplace	200	262	250	327.5
	Australia	200	262	250	328
	Canada - Ontario	200	-	250	-
	European Union	200	260	-	-
	New Zealand	200	262	250	328
1,1-dichloroethylene	Australia	5	20	20	79
	Canada - Ontario	1	4	20	80
	European Union	2	8	5	20
	New Zealand	5	20	20	79
	USA - ACGIH	5	-	-	-
	Austria	2	8	5	20
Dichloromethane	Japan - JSOH(2024–2025)	50	173	-	-
	Permissible exposure standards for workers in the workplace	50	174	75	217.5

	Australia	50	174	-	-
	Canada - Ontario	50	-	-	-
	European Union	100	353	200	706
	New Zealand	50	174	-	-
trans-dichloroethylene	Australia	200	793	-	-
	Canada - Ontario	200	790	-	-
	New Zealand	200	793	-	-
	USA - ACGIH	200	-	-	-
	USA - NIOSH	200	790	-	-
	USA - OSHA	200	790	-	-
1,1-dichloroethane	Japan - JSOH(2024–2025)	100	400	-	-
	Permissible exposure standards for workers in the workplace	100	405	125	506.25
	Australia	100	412	-	-
	Canada - Ontario	100	-	-	-
	European Union	100	412	-	-
	New Zealand	100	405	250	1010
2-chlorobuta-1,3-diene	Permissible exposure standards for workers in the workplace	10	36	15	54
	Australia	10	36	-	-
	Canada - Ontario	10	-	-	-
	New Zealand	10	36	-	-
	USA - ACGIH	1	-	-	-
	USA - NIOSH	-	-	1	3.6
cis-dichloroethylene	Australia	200	793	-	-
	Canada - Ontario	200	790	-	-
	New Zealand	200	793	-	-
	USA - ACGIH	200	-	-	-
	USA - NIOSH	200	790	-	-
	USA - OSHA	200	790	-	-
Bromochloromethane	Permissible exposure standards for workers in the workplace	200	1060	250	1060
	Australia	200	1060	-	-

	Canada - Ontario	200	-	-	-
	New Zealand	200	1060	-	-
	USA - ACGIH	200	-	-	-
	USA - NIOSH	200	1050	-	-
Chloroform	Japan - JSOH(2024–2025)	3	14.7	-	-
	Permissible exposure standards for workers in the workplace	-	-	-	-
	Australia	2	10	-	-
	Canada - Ontario	10	-	-	-
	European Union	2	10	-	-
	New Zealand	2	9.9	-	-
1,1,1-trichloroethane	Japan - JSOH(2024–2025)	200	1090	-	-
	Permissible exposure standards for workers in the workplace	350	1910	437.5	1910
	Australia	100	555	200	1110
	Canada - Ontario	350	-	450	-
	European Union	100	555	200	1110
	New Zealand	100	555	200	1110
Carbon tetrachloride	Japan - JSOH(2024–2025)	5	31	-	-
	Permissible exposure standards for workers in the workplace	2	13	4	19.5
	Australia	0.1	0.63	-	-
	Canada - Ontario	2	-	3	-
	European Union	1	6.4	5	32
	New Zealand	0.1	0.63	-	-
1,1-dichloropropene	Denmark	1	5	2	10
	Singapore	1	4.5	-	-
Benzene	Japan - JSOH(2024–2025)	1(individual excess lifetime risk of cancer 10^{-3})	-	-	-
	Permissible exposure standards for workers in the	1	3.2	2	6.4

	workplace				
	Australia	1	3.2	-	-
	Canada - Ontario	0.5	-	2.5	-
	European Union	0.2	0.66	-	-
	New Zealand	0.05	0.16	-	-
Trichloroethylene	Japan - JSOH(2024–2025)	25	135	-	-
	Permissible exposure standards for workers in the workplace	50	269	75	336.25
	Australia	10	54	40	216
	Canada - Ontario	10	-	25	-
	European Union	10	54.7	30	164.1
	New Zealand	10	55	25	135
1,2-dichloropropane	Japan - JSOH(2024–2025)	1	4.6	-	-
	Permissible exposure standards for workers in the workplace	75	347	112.5	433.75
	Australia	75	347	110	508
	Canada - Ontario	10	-	-	-
	New Zealand	5	23	-	-
	USA - ACGIH	10	-	-	-
Dibromomethane	Latvia	-	10	-	-
	Romania	1.4	10	7	50
Toluene	Japan - JSOH(2024–2025)	50	188	-	-
	Permissible exposure standards for workers in the workplace	50	188	75	235
	Australia	50	191	150	574
	Canada - Ontario	20	-	-	-
	European Union	50	192	100	384
	New Zealand	20	75	100	377
1,1,2-trichloroethane	Japan - JSOH(2024–2025)	10	55	-	-
	Permissible exposure standards for	10	55	15	82.5

	workers in the workplace				
	Australia	10	55	-	-
	Canada - Ontario	10	-	-	-
	New Zealand	10	55	-	-
	USA - ACGIH	10	-	-	-
1,3-dichloropropane	Austria	75	350	375	1750
Tetrachloroethylene	Permissible exposure standards for workers in the workplace	50	339	75	423.75
	Australia	50	340	150	1020
	Canada - Ontario	25	-	100	-
	European Union	20	138	40	275
	New Zealand	20	136	40	271
	USA - ACGIH	25	-	100	-
1,2-dibromoethane	Permissible exposure standards for workers in the workplace	20	154	30	192.5
	European Union	0.1	0.8	-	-
	New Zealand	0.0003	0.002	-	-
	USA - NIOSH	0.045	-	0.13	-
	USA - OSHA	20	-	30	-
	Austria	0.1	0.8	0.4	3.2
Chlorobenzene	Japan - JSOH(2024–2025)	10	46	-	-
	Permissible exposure standards for workers in the workplace	75	345	112.5	431.25
	Australia	10	46	-	-
	Canada - Ontario	10	-	-	-
	European Union	5	23	15	70
	New Zealand	10	46	-	-
1,1,1,2-tetrachloroethane	Romania	3	20	4	30
Ethylbenzene	Japan - JSOH(2024–2025)	20	87	-	-
	Permissible exposure standards for workers in the workplace	100	434	125	542.5

	Australia	100	434	125	543
	Canada - Ontario	20	-	-	-
	European Union	100	442	200	884
	New Zealand	20	88	40	176
Bromoform	Japan - JSOH(2024–2025)	1	10.3	-	-
	Permissible exposure standards for workers in the workplace	0.5	5.2	1.5	10.4
	Australia	0.5	5.2	-	-
	Canada - Ontario	0.5	-	-	-
	New Zealand	0.5	5.2	-	-
	USA - ACGIH	0.5	-	-	-
Styrene	Japan - JSOH(2024–2025)	10	42.6	-	-
	Permissible exposure standards for workers in the workplace	50	213	75	266.25
	Australia	50	213	100	426
	Canada - Ontario	35	-	100	-
	New Zealand	20	85	40	170
	USA - ACGIH	10	-	20	-
o-xylene	Permissible exposure standards for workers in the workplace	100	434	125	542.5
	Australia	80	350	150	655
	Canada - Ontario	100	-	150	-
	European Union	50	221	100	442
	New Zealand	50	217	-	-
	USA - ACGIH	20	-	-	-
m-xylene	Permissible exposure standards for workers in the workplace	100	434	125	542.5
	Australia	80	350	150	655
	Canada - Ontario	100	-	150	-
	European Union	50	221	100	442
	New Zealand	50	217	-	-
	USA - ACGIH	20	-	-	-

p-xylene	Permissible exposure standards for workers in the workplace	100	434	125	542.5
	Australia	80	350	150	655
	Canada - Ontario	100	-	150	-
	European Union	50	221	100	442
	New Zealand	50	217	-	-
	USA - ACGIH	20	-	-	-
Cumene	Japan - JSOH(2024–2025)	10	50	-	-
	Permissible exposure standards for workers in the workplace	50	246	75	307.5
	Australia	25	125	75	375
	Canada - Ontario	50	-	-	-
	European Union	10	50	50	250
	New Zealand	25	125	75	375
1,1,2,2-tetrachloroethane	Japan - JSOH(2024–2025)	1	6.9	-	-
	Permissible exposure standards for workers in the workplace	1	6.9	2	13.8
	Australia	1	6.9	-	-
	Canada - Ontario	1	-	-	-
	New Zealand	1	6.9	-	-
	USA - ACGIH	1	-	-	-
1,2,3-trichloropropane	Permissible exposure standards for workers in the workplace	50	302	75	377.5
	Australia	10	60	-	-
	Canada - Ontario	0.005	-	-	-
	New Zealand	0.005	0.03	-	-
	USA - ACGIH	0.005	-	-	-
	USA - NIOSH	10	60	-	-
2-chlorotoluene	Permissible exposure standards for workers in the workplace	50	259	75	323.75

	Australia	50	259	-	-
	Canada - Ontario	50	-	-	-
	New Zealand	50	259	-	-
	USA - ACGIH	50	-	-	-
	USA - NIOSH	50	250	75	375
4-chlorotoluene	Finland	50	260	75	390
	Latvia	-	10	-	-
	Romania	30	150	50	250
Mesitylene	Japan - JSOH(2024–2025)	25	120	-	-
	Australia	25	123	-	-
	Canada - Ontario	25	-	-	-
	European Union	20	100	-	-
	USA - ACGIH	10	-	-	-
	USA - NIOSH	25	125	-	-
1,2,4-trimethylbenzene	Japan - JSOH(2024–2025)	25	120	-	-
	Australia	25	123	-	-
	Canada - Ontario	25	-	-	-
	European Union	20	100	-	-
	USA - ACGIH	10	-	-	-
	USA - NIOSH	25	125	-	-
1,2-dichlorobenzene	Japan - JSOH(2024–2025)	25	150	-	-
	Permissible exposure standards for workers in the workplace	-	-	-	-
	Australia	25	150	50	301
	Canada - Ontario	25	-	50	-
	European Union	20	122	50	306
	New Zealand	10	61	20	122
p-cymene	Belgium	20	100	-	-
	Denmark	25	135	50	270
	Sweden	25	140	35	190
1,3-dichlorobenzene	Austria	3	20	12	80
	Germany (AGS)	2	12	4	24
	Germany (DFG)	2	12	4	24
	Hungary	-	12	-	24

	Latvia	-	20	-	-
	Switzerland	2	12	4	24
1,4-dichlorobenzene	Japan - JSOH(2024–2025)	10	60	-	-
	Permissible exposure standards for workers in the workplace	75	450	112.5	562.5
	Australia	25	150	50	300
	Canada - Ontario	10	-	-	-
	European Union	2	12	10	60
	New Zealand	2	12	10	60
n-Butylbenzene	Germany (AGS)	10	56	20	112
	Germany (DFG)	10	56	20	112
	Switzerland	15	84	30	168
1,2-dibromo-3-chloropropane	USA - OSHA	0.001	-	-	-
	Denmark	0.001	0.01	0.002	0.02
	Hungary	-	0.01	-	-
1,2,4-trichlorobenzene	Permissible exposure standards for workers in the workplace	-	-	-	-
	Australia	-	-	5	37
	European Union	2	15.1	5	37.8
	New Zealand	-	-	5	37
	USA - NIOSH	-	-	5	40
	Austria	2	15.1	5	37.8
Hexachlorobuta-1,3-diene	Japan - JSOH(2024–2025)	0.01	0.12	-	-
	Permissible exposure standards for workers in the workplace	0.02	0.21	0.06	0.63
	Australia	0.02	0.21	-	-
	Canada - Ontario	0.02	-	-	-
	USA - ACGIH	0.02	-	-	-
	USA - NIOSH	0.02	0.24	-	-
Naphthalene	Permissible exposure standards for workers in the workplace	10	52	15	78
	Australia	10	52	15	79

	Canada - Ontario	10	-	-	-
	New Zealand	0.5	2.6	2	10
	USA - ACGIH	10	-	-	-
	USA - NIOSH	10	50	15	75
1,2,3-trichlorobenzene	Canada - Ontario	-	-	5	-
	Denmark	5	37	10	76
	Finland	5	38	10	75
	Germany (DFG)	0.5	0.38	1	0.76
	Poland	-	15	-	30

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.

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.

9 Physical and chemical properties and safety characteristics

Physical and chemical properties

Appearance (physical state, color, etc.)	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)

10 Stability and reactivity

| Stability and reactivity

Reactivity	Contact with incompatible substances can cause decomposition or other chemical reactions.
Chemical stability	Stable under proper operation and storage conditions.
Possibility of hazardous reactions	In contact with oxidants causes severe reactions, and may cause a fire or explosion. Reactions with metals form metal organic compounds. 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.
Conditions to avoid	Incompatible materials, heat, flame and spark.
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.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11 Toxicological information

| Acute toxicity

Component	LD ₅₀ (oral)	LD ₅₀ (dermal)	LC ₅₀ (inhalation,4h)
Tetrachloroethylene	2629mg/kg(Rat)	No information available	35.269mg/L(Mouse)
bromodichloromethane	430mg/kg(Rat)	No information available	No information available
m-xylene	5000mg/kg(Rat)	12200mg/kg(Rabbit)	No information available
Hexachlorobuta-1,3-diene	82mg/kg(Rat)	100mg/kg(Rabbit)	No information available
p-cymene	4750mg/kg(Rat)	No information available	No information available
tert-butylbenzene	3045mg/kg(Rat)	No information available	No information available
Cumene	1400mg/kg(Rat)	10600mg/kg(Rabbit)	No information available
Styrene	2650mg/kg(Rat)	No information available	12mg/L(Rat)
Dibromomethane	108mg/kg(Rat)	> 4000mg/kg(Rabbit)	No information available
trans-dichloroethylene	1235mg/kg(Rat)	> 5000mg/kg(Rabbit)	No information available
Bromochloromethane	5000mg/kg(Rat)	> 20000mg/kg(Rabbit)	No information available
1,1-dichloroethane	725mg/kg(Rat)	No information available	52.617mg/L(Rat)
Bromoform	933mg/kg(Rat)	No information available	No information available
Toluene	636mg/kg(Rat)	12200mg/kg(Rabbit)	49mg/L(Rat)
1,2-dichloropropane	1947mg/kg(Rat)	10100mg/kg(Rabbit)	No information available

1,1-dichloroethylene	200mg/kg(Rat)	No information available	25.177mg/L(Rat)
1,2-dibromoethane	108mg/kg(Rat)	300mg/kg(Rabbit)	No information available
1,1,2,2-tetrachloroethane	200mg/kg(Rat)	No information available	No information available
Benzene	930mg/kg(Rat)	> 8260mg/kg(Rabbit)	No information available
1,2,3-trichlorobenzene	1830mg/kg(Rat)	No information available	No information available
p-xylene	5000mg/kg(Rat)	No information available	19.758mg/L(Rat)
1,2-dibromo-3-chloropropane	170mg/kg(Rat)	1400mg/kg(Rabbit)	No information available
2-chlorobuta-1,3-diene	450mg/kg(Rat)	No information available	11.8mg/L(Rat)
Trichloroethylene	4920mg/kg(Rat)	> 20000mg/kg(Rabbit)	45.409mg/L(Mouse)
Propylbenzene	6040mg/kg(Rat)	No information available	No information available
sec-butylbenzene	1930mg/kg(Rat)	> 13800mg/kg(Rabbit)	No information available
1,2,4-trichlorobenzene	756mg/kg(Rat)	6139mg/kg(Rat)	No information available
Ethylbenzene	3500mg/kg(Rat)	15400mg/kg(Rabbit)	No information available
Dibromochloromethane	370mg/kg(Rat)	No information available	No information available
1,1,1,2-tetrachloroethane	670mg/kg(Rat)	20000mg/kg(Rabbit)	14.417mg/L(Rat)
1,1,1-trichloroethane	9600mg/kg(Rat)	No information available	98.209mg/L(Rat)
Carbon tetrachloride	2350mg/kg(Rat)	> 20000mg/kg(Rabbit)	50.330mg/L(Rat)
2-chlorotoluene	3900mg/kg(Rat)	No information available	No information available
1,2-dichlorobenzene	500mg/kg(Rat)	> 10000mg/kg(Rabbit)	No information available
1,2,4-trimethylbenzene	5000mg/kg(Rat)	No information available	18mg/L(Rat)
1,1,2-trichloroethane	836mg/kg(Rat)	5350mg/kg(Rabbit)	No information available
1,2,3-trichloropropane	150mg/kg(Rat)	516mg/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)
Mesitylene	No information available	No information available	24mg/L(Rat)
Naphthalene	490mg/kg(Rat)	> 20000mg/kg(Rabbit)	No information available
4-chlorotoluene	2100mg/kg(Rat)	No information available	No information available
1,4-dichlorobenzene	500~5000mg/kg(Rat)	> 2000mg/kg(Rabbit)	No information available
Bromobenzene	2383mg/kg(Rat)	No information available	No information available
Dichloromethane	1600mg/kg(Rat)	No information available	No information available

Carcinogenicity

Component	List of carcinogens by the IARC Monographs	Report on Carcinogens by NTP	OSHA Carcinogen List
Methanol	Not Listed	Not Listed	Not Listed
1,1-dichloroethylene	Category 2B	Not Listed	Not Listed
Dichloromethane	Category 2A	Category R	Listed
trans-dichloroethylene	Not Listed	Not Listed	Not Listed

1,1-dichloroethane	Not Listed	Not Listed	Not Listed
2-chlorobuta-1,3-diene	Category 2B	Category R	Not Listed
cis-dichloroethylene	Not Listed	Not Listed	Not Listed
2,2-dichloropropane	Not Listed	Not Listed	Not Listed
Bromochloromethane	Not Listed	Not Listed	Not Listed
Chloroform	Category 2B	Category R	Not Listed
1,1,1-trichloroethane	Category 2A	Not Listed	Not Listed
Carbon tetrachloride	Category 2B	Category R	Not Listed
1,1-dichloropropene	Not Listed	Not Listed	Not Listed
Benzene	Category 1	Category K	Listed
1,2-DICHLOROETHANE-D 4	Not Listed	Not Listed	Not Listed
Trichloroethylene	Category 1	Category K	Not Listed
1,2-dichloropropane	Category 1	Not Listed	Not Listed
Dibromomethane	Not Listed	Not Listed	Not Listed
bromodichloromethane	Category 2B	Category R	Not Listed
(Z)-1,3-Dichloro-1-propen e	Not Listed	Not Listed	Not Listed
Toluene	Category 3	Not Listed	Not Listed
trans-1,3-Dichloropropene	Not Listed	Not Listed	Not Listed
1,1,2-trichloroethane	Category 3	Not Listed	Not Listed
1,3-dichloropropane	Not Listed	Not Listed	Not Listed
Tetrachloroethylene	Category 2A	Category R	Not Listed
Dibromochloromethane	Category 3	Not Listed	Not Listed
1,2-dibromoethane	Category 2A(Remark 1)	Category R	Not Listed
Chlorobenzene	Not Listed	Not Listed	Not Listed
1,1,1,2-tetrachloroethane	Category 2B	Not Listed	Not Listed
Ethylbenzene	Category 2B	Not Listed	Not Listed
Bromoform	Category 3	Not Listed	Not Listed
Styrene	Category 2A	Category R	Not Listed
o-xylene	Not Listed	Not Listed	Not Listed
m-xylene	Not Listed	Not Listed	Not Listed
p-xylene	Not Listed	Not Listed	Not Listed
Cumene	Category 2B	Category R	Not Listed
Bromobenzene	Not Listed	Not Listed	Not Listed
1,1,2,2-tetrachloroethane	Category 2B	Not Listed	Not Listed
1,2,3-trichloropropane	Category 2A	Category R	Not Listed
Propylbenzene	Not Listed	Not Listed	Not Listed
2-chlorotoluene	Not Listed	Not Listed	Not Listed

4-chlorotoluene	Not Listed	Not Listed	Not Listed
Mesitylene	Not Listed	Not Listed	Not Listed
tert-butylbenzene	Not Listed	Not Listed	Not Listed
1,2,4-trimethylbenzene	Not Listed	Not Listed	Not Listed
sec-butylbenzene	Not Listed	Not Listed	Not Listed
1,2-dichlorobenzene	Category 3	Not Listed	Not Listed
p-cymene	Not Listed	Not Listed	Not Listed
1,3-dichlorobenzene	Category 3	Not Listed	Not Listed
1,4-dichlorobenzene	Category 2B	Category R	Not Listed
n-Butylbenzene	Not Listed	Not Listed	Not Listed
1,2-dibromo-3-chloropropane	Category 2B	Category R	Listed
1,2,4-trichlorobenzene	Not Listed	Not Listed	Not Listed
Hexachlorobuta-1,3-diene	Category 3	Not Listed	Not Listed
Naphthalene	Category 2B	Category R	Not Listed
1,2,3-trichlorobenzene	Not Listed	Not Listed	Not Listed

Remark 1: Overall evaluation upgraded to Group 2A with supporting evidence from other relevant data

Others

55 Mix VOCs 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(kidneys, central nervous system)(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

12 Ecological information

Acute aquatic toxicity

Component	Fish	Crustaceans	Algae or other aquatic plants
Tetrachloroethylene	LC ₅₀ : 14mg/L (96h)(Fish)	EC ₅₀ : 1.3mg/L (48h)(Crustaceans)	ErC ₅₀ : 27mg/L (72h)(Algae)
bromodichloromethane	LC ₅₀ : 28mg/L (96h)(Fish)	EC ₅₀ : 29mg/L (48h)(Crustaceans)	ErC ₅₀ : 12mg/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)
Hexachlorobuta-1,3-diene	LC ₅₀ : 0.32mg/L (96h)(Fish)	No information available	No information available
p-cymene	LC ₅₀ : 2.0mg/L (96h)(Fish)	EC ₅₀ : 3.7mg/L	ErC ₅₀ : 5.8mg/L

		(48h)(Crustaceans)	(72h)(Algae)
1,3-dichloropropane	LC ₅₀ : 124~137mg/L (96h)(Fish)	No information available	ErC ₅₀ : 50mg/L (96h)(Algae)
tert-butylbenzene	No information available	EC ₅₀ : > 100mg/L (48h)(Crustaceans)	ErC ₅₀ : 290.44mg/L (72h)(Algae)
Cumene	LC ₅₀ : 4.8mg/L (96h)(Fish)	EC ₅₀ : 10.6mg/L (48h)(Crustaceans)	No information available
Styrene	LC ₅₀ : 4.02mg/L (96h)(Fish)	EC ₅₀ : 4.7mg/L (48h)(Crustaceans)	ErC ₅₀ : 0.72mg/L (96h)(Algae)
Dibromomethane	LC ₅₀ : 45mg/L (96h)(Fish)	No information available	No information available
trans-dichloroethylene	LC ₅₀ : 135mg/L (96h)(Fish)	No information available	No information available
(Z)-1,3-Dichloro-1-propene	LC ₅₀ : 1.6mg/L (96h)(Fish)	No information available	No information available
Bromochloromethane	LC ₅₀ : 360.048mg/L (96h)(Fish)	No information available	No information available
1,1-dichloroethane	LC ₅₀ : >110mg/L (96h)(Fish)	EC ₅₀ : 34mg/L (48h)(Crustaceans)	ErC ₅₀ : >94mg/L (72h)(Algae)
Bromoform	LC ₅₀ : 29mg/L (96h)(Fish)	EC ₅₀ : 46mg/L (48h)(Crustaceans)	ErC ₅₀ : 13mg/L (72h)(Algae)
cis-dichloroethylene	LC ₅₀ : 67mg/L (96h)(Fish)	EC ₅₀ : 40mg/L (48h)(Crustaceans)	ErC ₅₀ : >74mg/L (72h)(Algae)
Toluene	LC ₅₀ : 25mg/L (96h)(Fish)	EC ₅₀ : 4.1mg/L (48h)(Crustaceans)	ErC ₅₀ : 29mg/L (72h)(Algae)
1,2-dichloropropane	LC ₅₀ : 160mg/L (96h)(Fish)	EC ₅₀ : 30mg/L (48h)(Crustaceans)	ErC ₅₀ : 83mg/L (96h)(Algae)
1,1-dichloroethylene	LC ₅₀ : 45mg/L (96h)(Fish)	EC ₅₀ : 16mg/L (48h)(Crustaceans)	ErC ₅₀ : 410mg/L (96h)(Algae)
1,2-dibromoethane	LC ₅₀ : 1.13mg/L (96h)(Fish)	No information available	No information available
1,1,2,2-tetrachloroethane	LC ₅₀ : 20.4mg/L (96h)(Fish)	EC ₅₀ : 24mg/L (48h)(Crustaceans)	ErC ₅₀ : 89mg/L (96h)(Algae)
Benzene	LC ₅₀ : 21.6mg/L (96h)(Fish)	EC ₅₀ : 10.9mg/L (48h)(Crustaceans)	ErC ₅₀ : 1600mg/L (96h)(Algae)
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)
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-dibromo-3-chloropropane	LC ₅₀ : 39mg/L (96h)(Fish)	EC ₅₀ : 19mg/L (48h)(Crustaceans)	ErC ₅₀ : 62mg/L (72h)(Algae)
1,3-dichlorobenzene	LC ₅₀ : 7.8mg/L (96h)(Fish)	EC ₅₀ : 2.5mg/L (48h)(Crustaceans)	ErC ₅₀ : 126mg/L (96h)(Algae)
2-chlorobuta-1,3-diene	No information available	No information available	ErC ₅₀ : 19.9mg/L (72h)(Algae)
Trichloroethylene	LC ₅₀ : 42.4mg/L (96h)(Fish)	EC ₅₀ : 11mg/L (48h)(Crustaceans)	ErC ₅₀ : 77mg/L (72h)(Algae)
Propylbenzene	LC ₅₀ : 1.55mg/L (96h)(Fish)	No information available	No information available
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)
Ethylbenzene	LC ₅₀ : 4.2mg/L (96h)(Fish)	EC ₅₀ : 4.75mg/L (48h)(Crustaceans)	ErC ₅₀ : 3.6mg/L (96h)(Algae)

Dibromochloromethane	LC ₅₀ : 79mg/L (96h)(Fish)	EC ₅₀ : 27mg/L (48h)(Crustaceans)	ErC ₅₀ : 9.6mg/L (72h)(Algae)
1,1,1,2-tetrachloroethane	LC ₅₀ : 20mg/L (96h)(Fish)	No information available	No information available
1,1,1-trichloroethane	LC ₅₀ : 42.3mg/L (96h)(Fish)	EC ₅₀ : 11.2mg/L (48h)(Crustaceans)	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)
2-chlorotoluene	LC ₅₀ : 7.8mg/L (96h)(Fish)	EC ₅₀ : 0.7mg/L (48h)(Crustaceans)	ErC ₅₀ : 7.8mg/L (72h)(Algae)
1,2-dichlorobenzene	LC ₅₀ : 6.66mg/L (96h)(Fish)	EC ₅₀ : 0.7mg/L (48h)(Crustaceans)	ErC ₅₀ : 71.1mg/L (96h)(Algae)
1,2,4-trimethylbenzene	LC ₅₀ : 7.72mg/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)
1,2,3-trichloropropane	LC ₅₀ : 41.6mg/L (96h)(Fish)	EC ₅₀ : 4.1mg/L (48h)(Crustaceans)	ErC ₅₀ : 101mg/L (72h)(Algae)
Methanol	LC ₅₀ : 24000mg/L (96h)(Fish)	EC ₅₀ : 24500mg/L (48h)(Crustaceans)	No information available
o-xylene	LC ₅₀ : 16.1mg/L (96h)(Fish)	EC ₅₀ : 1.1mg/L (48h)(Crustaceans)	ErC ₅₀ : 0.80mg/L (72h)(Algae)
Chloroform	LC ₅₀ : > 110mg/L (96h)(Fish)	No information available	No information available
Mesitylene	LC ₅₀ : 12.52mg/L (96h)(Fish)	No information available	No information available
Naphthalene	LC ₅₀ : 0.9mg/L (96h)(Fish)	EC ₅₀ : 3.6mg/L (48h)(Crustaceans)	No information available
4-chlorotoluene	LC ₅₀ : 5.92mg/L (96h)(Fish)	EC ₅₀ : 2.0mg/L (48h)(Crustaceans)	ErC ₅₀ : 6.1mg/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)
Bromobenzene	LC ₅₀ : 4.3mg/L (96h)(Fish)	EC ₅₀ : 15.7mg/L (48h)(Crustaceans)	ErC ₅₀ : 12mg/L (72h)(Algae)
Dichloromethane	LC ₅₀ : 193mg/L (96h)(Fish)	EC ₅₀ : 1470mg/L (48h)(Crustaceans)	No information available
n-Butylbenzene	LC ₅₀ : 3.3mg/L (96h)(Fish)	EC ₅₀ : 1.0mg/L (48h)(Crustaceans)	ErC ₅₀ : 1.6mg/L (72h)(Algae)

Chronic aquatic toxicity

Component	Fish	Crustaceans	Algae or other aquatic plants
1,2,3-trichlorobenzene	NOEC : 0.32mg/L(Fish)	NOEC : 0.17mg/L(Crustaceans)	NOEC : 0.23mg/L(Algae)
Tetrachloroethylene	NOEC : 1.9mg/L(Fish)	NOEC : 0.023mg/L(Crustaceans)	NOEC : 9.1mg/L(Algae)
bromodichloromethane	NOEC : 0.78mg/L(Fish)	NOEC : 2.2mg/L(Crustaceans)	NOEC : 0.80mg/L(Algae)
p-xylene	No information available	NOEC : 1.3mg/L(Crustaceans)	NOEC : 4.4mg/L(Algae)
m-xylene	No information available	NOEC : 0.41mg/L(Crustaceans)	NOEC : 5.3mg/L(Algae)

1,2-dibromo-3-chloropropane	No information available	NOEC : 5.0mg/L(Crustaceans)	NOEC : 2.7mg/L(Algae)
1,3-dichlorobenzene	NOEC : 0.7mg/L(Fish)	NOEC : <0.10mg/L(Crustaceans)	NOEC : 2.2mg/L(Algae)
p-cymene	No information available	NOEC : 0.46mg/L(Crustaceans)	NOEC : 0.48mg/L(Algae)
Trichloroethylene	NOEC : 5.76mg/L(Fish)	NOEC : 2.1mg/L(Crustaceans)	NOEC : 45mg/L(Algae)
1,2,4-trichlorobenzene	NOEC : 0.04mg/L(Fish)	NOEC : 0.10mg/L(Crustaceans)	NOEC : 2.2mg/L(Algae)
Dibromochloromethane	NOEC : 3.2mg/L(Fish)	NOEC : 0.063mg/L(Crustaceans)	NOEC : 4.5mg/L(Algae)
Carbon tetrachloride	No information available	NOEC : 0.49mg/L(Crustaceans)	NOEC : 0.12mg/L(Algae)
2-chlorotoluene	No information available	NOEC : 0.31mg/L(Crustaceans)	NOEC : 2.6mg/L(Algae)
1,2-dichlorobenzene	NOEC : 0.8mg/L(Fish)	NOEC : <0.10mg/L(Crustaceans)	NOEC : 2.6mg/L(Algae)
1,2,3-trichloropropane	NOEC : 4.4mg/L(Fish)	No information available	No information available
1,1-dichloroethane	No information available	NOEC : 0.53mg/L(Crustaceans)	NOEC : 94mg/L(Algae)
o-xylene	No information available	NOEC : 0.63mg/L(Crustaceans)	NOEC : 0.73mg/L(Algae)
4-chlorotoluene	No information available	NOEC : 0.32mg/L(Crustaceans)	NOEC : 2.2mg/L(Algae)
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)
1,4-dichlorobenzene	NOEC : 0.9mg/L(Fish)	NOEC : 0.10mg/L(Crustaceans)	NOEC : 0.83mg/L(Algae)
1,2-dichloropropane	NOEC : 6~11mg/L(Fish)	NOEC : 0.96mg/L(Crustaceans)	NOEC : 11mg/L(Algae)
Bromobenzene	No information available	No information available	NOEC : 4.9mg/L(Algae)
n-Butylbenzene	No information available	NOEC : 0.17mg/L(Crustaceans)	NOEC : 0.42mg/L(Algae)

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)
Dibromomethane	High(Half-life = 560.17 days)	High(Half-life = 354.58 days)
1,1,2-trichloroethane	High(Half-life = 730 days)	Medium(Half-life = 81.5 days)
1,3-dichloropropane	High	High
Tetrachloroethylene	High(Half-life = 720 days)	Medium(Half-life = 160.13 days)

Bromoform	High(Half-life = 360 days)	High(Half-life = 541.21 days)
o-xylene	High(Half-life = 360 days)	Low(Half-life = 1.83 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)
Bromobenzene	High	High
1,2,3-trichloropropane	High(Half-life = 720 days)	Low(Half-life = 25.54 days)
2-chlorotoluene	High	High
4-chlorotoluene	High	High
tert-butylbenzene	High	High
1,2,4-trimethylbenzene	Low(Half-life = 56 days)	Low(Half-life = 0.67 days)
sec-butylbenzene	High	High
1,2-dichlorobenzene	High(Half-life = 360 days)	Medium(Half-life = 63.67 days)
p-cymene	High	High
1,3-dichlorobenzene	High(Half-life = 360 days)	Low(Half-life = 37.13 days)
n-Butylbenzene	High	High
1,2-dibromo-3-chloropropane	High(Half-life = 360 days)	Medium(Half-life = 60.79 days)
1,2,4-trichlorobenzene	High(Half-life = 360 days)	Low(Half-life = 53.5 days)
Naphthalene	High(Half-life = 258 days)	Low(Half-life = 1.23 days)
1,2,3-trichlorobenzene	High	High

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
Dibromomethane	Low	Log Kow=1.7
trans-1,3-Dichloropropene	Low	Log Kow=2.03
1,1,2-trichloroethane	Low	BCF=17
1,3-dichloropropane	Low	Log Kow=2.0
Tetrachloroethylene	Low	BCF=77.1
Bromoform	Low	BCF=21
o-xylene	Low	BCF=219
m-xylene	Low	BCF=1.37
p-xylene	Low	BCF=2.2
Bromobenzene	Low	BCF=34
1,2,3-trichloropropane	Low	BCF=9

2-chlorotoluene	Low	BCF=112
4-chlorotoluene	Low	BCF=101.6
tert-butylbenzene	Medium	Log Kow=4.11
1,2,4-trimethylbenzene	Low	BCF=275
sec-butylbenzene	High	Log Kow=4.57
1,2-dichlorobenzene	Low	BCF=260
p-cymene	Medium	Log Kow=4.1
1,3-dichlorobenzene	High	BCF=6918
n-Butylbenzene	Medium	Log Kow=4.38
1,2-dibromo-3-chloropropane	Low	Log Kow=2.96
1,2,4-trichlorobenzene	High	BCF=4420
Naphthalene	High	BCF=18000
1,2,3-trichlorobenzene	Medium	Log Kow=4.05

| Mobility in soil

Component	log Koc	Remark
Methanol	0.000	
1,1-dichloroethylene	1.72	20 °C
Dichloromethane	1.67	20 °C
trans-dichloroethylene	1.641	
2-chlorobuta-1,3-diene	1.83	20 °C
cis-dichloroethylene	1.641	
Bromochloromethane	1.34	20 °C
Chloroform	2.27	20 °C
1,1,1-trichloroethane	0.34	20 °C
Carbon tetrachloride	2.06	20 °C
Benzene	2.13	20 °C
Trichloroethylene	2.15	
1,2-dichloropropane	1.67	
Dibromomethane	1.48	20 °C
Toluene	2.31	20 °C
trans-1,3-Dichloropropene	0.279	
1,1,2-trichloroethane	1.831	
1,3-dichloropropane	1.907	
Tetrachloroethylene	2.15	20 °C
Chlorobenzene	2.369	MCI method
Ethylbenzene	3.12	20 °C

Bromoform	2.08	
Styrene	2.55	
o-xylene	2.73	20 °C
m-xylene	2.73	20 °C
p-xylene	2.73	20 °C
Cumene	2.95	20 °C
Bromobenzene	2.428	
1,2,3-trichloropropane	1.89	20 °C
2-chlorotoluene	2.54	20 °C
4-chlorotoluene	2.637	
Mesitylene	2.87	
tert-butylbenzene	2.888	25 °C , pH=6.0
1,2,4-trimethylbenzene	3.04	20 °C
sec-butylbenzene	3.198	
1,2-dichlorobenzene	2.65	20 °C
p-cymene	3.61	20 °C
1,3-dichlorobenzene	2.5	
n-Butylbenzene	3.246	
1,2-dibromo-3-chloropropane	2.117	
1,2,4-trichlorobenzene	2.856	
Naphthalene	2.58	20 °C
1,2,3-trichlorobenzene	2.87	

13 Disposal considerations

Disposal considerations

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	 
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IMDG-CODE

UN number	3021
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UN proper shipping name	PESTICIDE, LIQUID, FLAMMABLE, TOXIC, N.O.S. , flashpoint less than 23 °C
Transport hazard class	3
Transport subsidiary hazard class	6.1
Packing group	II
Marine pollutant (Yes or no)	No

IATA-DGR

UN number	3021
UN proper shipping name	PESTICIDE, LIQUID, FLAMMABLE, TOXIC, N.O.S., flash point less than 23 °C
Transport hazard class	3
Transport subsidiary hazard class	6.1
Packing group	II

UN-ADR

UN number	3021
UN proper shipping name	PESTICIDE, LIQUID, FLAMMABLE, TOXIC, N.O.S., flash point less than 23 °C
Transport hazard class	3
Transport subsidiary hazard class	6.1
Packing group	II

Transport in bulk according to IMO instruments

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

	Not Available
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- ◆ Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

	Not Available
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- ◆ Transport in bulk in accordance with the IGC Code

	Not Available
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Others

Precautions for transport	Transit should be anti-exposure, rain, high temperature. Strictly prohibited shipping or transportation with acids, alkalis, oxidants, food and food additives etc. 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.
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International chemical inventory

Component	A	B	C	D	E	F	G	H	I	J	K	L	M
Methanol	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1,1-dichloroethylene	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Dichloromethane	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
trans-dichloroethylene	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1,1-dichloroethane	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓
2-chlorobuta-1,3-diene	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
cis-dichloroethylene	✓	✓	✓	✗	✓	✗	✓	✓	✓	✗	✗	✓	✓
2,2-dichloropropane	✗	✓	✓	✓	✗	✗	✗	✓	✗	✗	✓	✓	✓
Bromochloromethane	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓
Chloroform	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1,1,1-trichloroethane	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Carbon tetrachloride	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1,1-dichloropropene	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✓
Benzene	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1,2-DICHLOROETHANE-D 4	✗	✗	✗	✗	✓	✗	✗	✗	✗	✗	✗	✓	✓
Trichloroethylene	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1,2-dichloropropane	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Dibromomethane	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓
bromodichloromethane	✗	✓	✓	✗	✓	✗	✗	✗	✗	✗	✓	✓	✓
(Z)-1,3-Dichloro-1-propene	✗	✓	✗	✗	✗	✗	✗	✗	✓	✗	✗	✓	✓
Toluene	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
trans-1,3-Dichloropropene	✓	✗	✓	✗	✗	✗	✓	✗	✓	✗	✗	✓	✓
1,1,2-trichloroethane	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1,3-dichloropropane	✓	✓	✓	✗	✓	✓	✗	✓	✓	✗	✓	✓	✓
Tetrachloroethylene	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Dibromochloromethane	✗	✓	✓	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓
1,2-dibromoethane	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓
Chlorobenzene	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1,1,1,2-tetrachloroethane	✗	✓	✓	✓	✗	✗	✗	✓	✓	✗	✓	✓	✓
Ethylbenzene	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bromoform	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Styrene	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
o-xylene	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
m-xylene	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
p-xylene	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Cumene	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bromobenzene	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓
1,1,2,2-tetrachloroethane	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1,2,3-trichloropropane	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓
Propylbenzene	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2-chlorotoluene	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓
4-chlorotoluene	✓	✓	✓	×	✓	✓	✓	✓	✓	✓	×	×	✓
Mesitylene	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
tert-butylbenzene	✓	✓	✓	✓	✓	✓	×	✓	✓	✓	✓	✓	✓
1,2,4-trimethylbenzene	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
sec-butylbenzene	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1,2-dichlorobenzene	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
p-cymene	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1,3-dichlorobenzene	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓
1,4-dichlorobenzene	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
n-Butylbenzene	✓	✓	✓	✓	✓	✓	×	✓	✓	✓	×	✓	✓
1,2-dibromo-3-chloropropane	✓	✓	✓	×	×	✓	✓	×	✓	✓	×	✓	✓
1,2,4-trichlorobenzene	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hexachlorobuta-1,3-diene	✓	✓	✓	✓	×	✓	✓	✓	✓	✓	×	✓	✓
Naphthalene	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
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	×	×	×
1,1-dichloroethylene	×	×	×
Dichloromethane	×	×	×
trans-dichloroethylene	×	×	×
1,1-dichloroethane	×	×	×

2-chlorobuta-1,3-diene	×	×	×
cis-dichloroethylene	×	×	×
2,2-dichloropropane	×	×	×
Bromochloromethane	✓	×	×
Chloroform	×	×	×
1,1,1-trichloroethane	✓	×	×
Carbon tetrachloride	✓	×	×
1,1-dichloropropene	×	×	×
Benzene	×	×	×
1,2-DICHLOROETHANE-D 4	×	×	×
Trichloroethylene	×	×	×
1,2-dichloropropane	×	×	×
Dibromomethane	×	×	×
bromodichloromethane	×	×	×
(Z)-1,3-Dichloro-1-propen e	×	×	×
Toluene	×	×	×
trans-1,3-Dichloropropen e	×	×	×
1,1,2-trichloroethane	×	×	×
1,3-dichloropropane	×	×	×
Tetrachloroethylene	×	×	×
Dibromochloromethane	×	×	×
1,2-dibromoethane	×	×	✓
Chlorobenzene	×	×	×
1,1,1,2-tetrachloroethane	×	×	×
Ethylbenzene	×	×	×
Bromoform	×	×	×
Styrene	×	×	×
o-xylene	×	×	×
m-xylene	×	×	×
p-xylene	×	×	×
Cumene	×	×	×
Bromobenzene	×	×	×
1,1,2,2-tetrachloroethane	×	×	×
1,2,3-trichloropropane	×	×	×
Propylbenzene	×	×	×
2-chlorotoluene	×	×	×
4-chlorotoluene	×	×	×

Mesitylene	×	×	×
tert-butylbenzene	×	×	×
1,2,4-trimethylbenzene	×	×	×
sec-butylbenzene	×	×	×
1,2-dichlorobenzene	×	×	×
p-cymene	×	×	×
1,3-dichlorobenzene	×	×	×
1,4-dichlorobenzene	×	×	×
n-Butylbenzene	×	×	×
1,2-dibromo-3-chloropropane	×	×	×
1,2,4-trichlorobenzene	×	×	×
Hexachlorobuta-1,3-diene	×	✓	×
Naphthalene	×	×	×
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

US chemical inventory

Component	A	B	C	D	E	F	G	H
Methanol	✓	×	✓	✓	✓	✓	✓	✓
1,1-dichloroethylene	✓	×	✓	✓	✓	✓	✓	✓
Dichloromethane	✓	×	✓	✓	✓	✓	✓	✓
trans-dichloroethylene	×	×	✓	✓	×	✓	✓	×
1,1-dichloroethane	✓	×	✓	✓	✓	✓	✓	✓
2-chlorobuta-1,3-diene	✓	×	✓	✓	✓	✓	✓	✓
cis-dichloroethylene	×	×	×	✓	×	✓	×	×
2,2-dichloropropane	×	×	×	✓	×	×	×	×
Bromochloromethane	×	×	×	✓	✓	✓	✓	×
Chloroform	✓	✓	✓	✓	✓	✓	✓	✓
1,1,1-trichloroethane	✓	×	✓	✓	✓	✓	✓	✓
Carbon tetrachloride	✓	×	✓	✓	✓	✓	✓	✓
1,1-dichloropropene	×	×	×	✓	×	×	×	×
Benzene	✓	×	✓	✓	✓	✓	✓	✓
1,2-DICHLOROETHANE-D4	×	×	×	×	×	×	×	×
Trichloroethylene	✓	×	✓	✓	✓	✓	✓	✓
1,2-dichloropropane	✓	×	✓	✓	✓	✓	✓	✓
Dibromomethane	×	×	✓	✓	✓	✓	✓	×

bromodichloromethane	×	×	✓	✓	✓	✓	✓	✓
(Z)-1,3-Dichloro-1-propene	×	×	×	✓	×	×	×	×
Toluene	✓	×	✓	✓	✓	✓	✓	✓
trans-1,3-Dichloropropene	×	×	×	✓	✓	×	×	×
1,1,2-trichloroethane	✓	×	✓	✓	✓	✓	✓	✓
1,3-dichloropropane	×	×	✓	✓	×	✓	✓	×
Tetrachloroethylene	✓	×	✓	✓	✓	✓	✓	✓
Dibromochloromethane	×	×	✓	✓	✓	✓	✓	×
1,2-dibromoethane	✓	×	✓	✓	✓	✓	✓	✓
Chlorobenzene	✓	×	✓	✓	✓	✓	✓	×
1,1,1,2-tetrachloroethane	×	×	✓	✓	✓	✓	✓	✓
Ethylbenzene	✓	×	✓	✓	✓	✓	✓	✓
Bromoform	✓	×	✓	✓	✓	✓	✓	✓
Styrene	✓	×	✓	✓	✓	✓	✓	✓
o-xylene	✓	×	✓	✓	✓	✓	✓	×
m-xylene	✓	×	✓	✓	✓	✓	✓	×
p-xylene	✓	×	✓	✓	✓	✓	✓	×
Cumene	✓	×	✓	✓	✓	✓	✓	✓
Bromobenzene	×	×	×	✓	✓	✓	✓	×
1,1,2,2-tetrachloroethane	✓	×	✓	✓	✓	✓	✓	✓
1,2,3-trichloropropane	×	×	×	✓	✓	✓	✓	✓
Propylbenzene	×	×	×	✓	✓	✓	✓	×
2-chlorotoluene	×	×	×	✓	✓	✓	✓	×
4-chlorotoluene	×	×	×	✓	×	×	×	×
Mesitylene	×	✓	×	✓	×	×	✓	×
tert-butylbenzene	×	×	×	✓	✓	✓	×	×
1,2,4-trimethylbenzene	×	✓	×	✓	✓	✓	✓	×
sec-butylbenzene	×	×	×	✓	×	✓	×	×
1,2-dichlorobenzene	×	×	✓	✓	✓	✓	✓	×
p-cymene	×	×	×	✓	×	✓	×	×
1,3-dichlorobenzene	×	×	✓	✓	✓	✓	✓	×
1,4-dichlorobenzene	✓	×	✓	✓	✓	✓	✓	✓
n-Butylbenzene	×	×	×	✓	✓	✓	✓	×
1,2-dibromo-3-chloropropane	✓	×	✓	✓	✓	✓	✓	✓
1,2,4-trichlorobenzene	✓	×	✓	✓	✓	✓	✓	×
Hexachlorobuta-1,3-diene	✓	×	✓	✓	✓	✓	✓	✓

Naphthalene	✓	×	✓	✓	✓	✓	✓	✓
1,2,3-trichlorobenzene	×	×	×	✓	×	×	✓	×

- [A] US Clean Air Act (CAA)- Section 112, Hazardous Air Pollutants
 [B] US SARA 302- Extremely Hazardous Substance List
 [C] US CERCLA- Hazardous Substances List
 [D] US Massachusetts Right-to-Know Substance List
 [E] US New Jersey Right to Know Hazardous Substance List
 [F] US Pennsylvania Right to Know Hazardous Substance List
 [G] US New York City Right-to-Know Hazardous Substance List
 [H] US California Proposition 65 List

Note:

- “✓” Indicates that the substance included in the regulations.
 “×” No data or not included in the regulations.

16 Other information

Information on revision

Creation Date	2025/11/08
Revision Date	-
Reason for revision	-

Reference

- [1] IPCS: The International Chemical SafetyCards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>.
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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	HCS	Hazard Communication Standard

Disclaimer

This Safety Data Sheet (SDS) was prepared according to OSHA HCS-2024. 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

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