Safety Data Sheet

10 Mix chlorobenzenes in carbon disulfide

Version：V2.0.0.1
Report No.：BWQ8248-2016-MSDS-EP
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*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	10 Mix chlorobenzenes in carbon disulfide
Cat No.	BWQ8248-2016
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
Skin Corrosion/Irritation	Category 2
Serious eye damage/irritation	Category 2
Reproductive toxicity	Category 2
Specific target organ toxicity - repeated exposure	Category 1

Hazardous to the aquatic environment - long-term (chronic) hazard	Category 3

2.2 Label elements

Hazard pictograms	
Signal word	**Danger**

Hazard statements

H225	Highly flammable liquid and vapour
H315	Causes skin irritation
H319	Causes serious eye irritation
H361df	Suspected of damaging fertility and the unborn child
H372	Causes damage to organs through prolonged or repeated exposure
H412	Harmful to aquatic life with long lasting effects
EUH208	Contains sensitising substance. May produce an allergic reaction

Precautionary statements

- Prevention

P201	Obtain special instructionsbefore use.
P202	Do not handle until allsafety precautions havebeen read and understood.
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.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

- Response

P314	Get medical advice/ attention if you feel unwell.
P321	Specific treatment (see related instructions on the label).
P302+P352	IF ON SKIN: Wash with plenty of water.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P362+P364	Take off 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].
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

◆ Storage

P405	Store locked up.
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]
Carbon disulphide	Not PBT/vPvB
Chlorobenzene	Not PBT/vPvB
2-chlorotoluene	Not PBT/vPvB
3-chlorotoluene	Insufficient information, temporarily unable to evaluate
4-chlorotoluene	Not PBT/vPvB
1,2-dichlorobenzene	Not PBT/vPvB
1,3-dichlorobenzene	Not PBT/vPvB
1,4-dichlorobenzene	Not PBT/vPvB
1,2,3-trichlorobenzene	Insufficient information, temporarily unable to evaluate
1,2,4-trichlorobenzene	Insufficient information, temporarily unable to evaluate
1,3,5-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]
Carbon disulphide	not ED
Chlorobenzene	Insufficient information, temporarily unable to evaluate
2-chlorotoluene	Insufficient information, temporarily unable to evaluate
3-chlorotoluene	Insufficient information, temporarily unable to evaluate
4-chlorotoluene	Insufficient information, temporarily unable to evaluate
1,2-dichlorobenzene	Insufficient information, temporarily unable to evaluate
1,3-dichlorobenzene	Insufficient information, temporarily unable to evaluate
1,4-dichlorobenzene	Insufficient information, temporarily unable to evaluate
1,2,3-trichlorobenzene	Insufficient information, temporarily unable to evaluate
1,2,4-trichlorobenzene	Insufficient information, temporarily unable to evaluate

1,3,5-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
Carbon disulphide CAS : 75-15-0 EC : 200-843-6 Index No. : 006-003-00-3	98.74	Flammable liquids, Category 2, H225; Skin Corrosion/Irritation, Category 2, H315; Serious eye damage/irritation, Category 2, H319; Reproductive toxicity, Category 2, H361; Specific target organ toxicity - repeated exposure, Category 1, H372	H361:C ≥ 1%|H372:C ≥ 1%|H373:0.2% ≤C < 1%
Chlorobenzene CAS : 108-90-7 EC : 203-628-5 Index No. : 602-033-00-1	0.126	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	-
2-chlorotoluene CAS : 95-49-8 EC : 202-424-3 Index No. : 602-040-00-X	0.126	Acute Toxicity - Inhalation, Category 4, H332; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 2, H411	-
3-chlorotoluene CAS : 108-41-8 EC : 203-580-5 Index No. : 602-040-00-X	0.126	Acute Toxicity - Inhalation, Category 4, H332; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 2, H411	-
4-chlorotoluene CAS : 106-43-4 EC : 203-397-0 Index No. : 602-040-00-X	0.126	Acute Toxicity - Inhalation, Category 4, H332; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 2, H411	-
1,2-dichlorobenzene CAS : 95-50-1 EC : 202-425-9 Index No. : 602-034-00-7	0.126	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-dichlorobenzene CAS : 541-73-1 EC : 208-792-1 Index No. : 602-067-00-7	0.126	Acute Toxicity - Oral, Category 4, H302; 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	0.126	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	
1,2,3-trichlorobenzene CAS : 87-61-6 EC : 201-757-1 Index No. : -	0.126	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	-
1,2,4-trichlorobenzene CAS : 120-82-1 EC : 204-428-0 Index No. : 602-087-00-6	0.126	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	-
1,3,5-trichlorobenzene CAS : 108-70-3 EC : 203-608-6 Index No. : -	0.126	Hazardous to the aquatic environment - long-term (chronic) hazard, Category 2, H411	-

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	First rinse with plenty of water, then remove contaminated clothes and rinse again. Refer for medical attention.
Ingestion	Give nothing to drink. Refer for medical attention.
Inhalation	Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.
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
Carbon disulphide	Japan - JSOH(2024–2025)	1	3.13	-	-
	Permissible exposure standards for workers in the workplace	10	31	15	46.5

	European Union	5	15	-	-
	France	5	15	-	-
	Germany (AGS)	10	30	20	60
	Germany (DFG)	5	16	10	32
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
2-chlorotoluene	Permissible exposure standards for workers in the workplace	50	259	75	323.75
	France	50	250	-	-
	Austria	50	250	-	-
	Belgium	50	263	-	-
	Denmark	50	285	100	570
	Finland	50	260	75	390
3-chlorotoluene	Finland	50	260	75	390
4-chlorotoluene	Finland	50	260	75	390
	Latvia	-	10	-	-
	Romania	30	150	50	250
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-dichlorobenzene	Germany (AGS)	2	12	4	24
	Germany (DFG)	2	12	4	24
	Austria	3	20	12	80
	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
	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
1,2,3-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	-
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
1,3,5-trichlorobenzene	Germany (DFG)	0.5	0.38	1	0.76
	Denmark	5	37	10	74
	Finland	5	38	10	75
	Poland	-	15	-	30

◆ Biological limit values

Component	Standard	Biological monitoring index	Biological limits value	Sampling time	Remark
Carbon disulphide	SCOEL(EU)	2-thiothiazolidine-4-carboxylic acid/urine	1.5mg/g creatinine	end of shift	
		2-Thiothiazolidine-4-carboxylic acid (TTCA)(Creatinine in urine)	0.5mg/g	End of shift	
Chlorobenzene	USA -ACGIH	4-Chlorocatechol, with	100mg/g	End of shift at end of work	

		hydrolysis(Creatinine in urine)		week	
		p-Chlorophenol, with hydrolysis(Creatinine in urine)	20mg/g	End of shift at end of work week	

◆ 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)
Carbon disulphide	Inhalation	No data available	No data available	No data available	15.8 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
2-chlorotoluene	Inhalation	No data available	No data available	No data available	4 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
3-chlorotoluene	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
4-chlorotoluene	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-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-dichlorobenzene	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
1,4-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
1,2,3-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
1,3,5-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

◆ Predicted No Effect Concentration (PNEC)

Component	A	B	C	D	E	F	G	H
Carbon disulphide	10 µg/L	1 µg/L	130 µg/L	70 µg/kg sediment dw	7 µg/kg sediment dw	No hazard identified	8.1 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
2-chlorotoluene	6.3 µg/L	630 ng/L	15 mg/L	240 µg/kg sediment dw	24 µg/kg sediment dw	No hazard identified	44.3 µg/kg soil dw	No potential for bioaccumulation
4-chlorotoluene	32 µg/L	3.2 µg/L	11.1 mg/L	1.16 mg/kg sediment dw	120 µg/kg sediment dw	No data available	214 µg/kg soil dw	No data available
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
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

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 respiratory protective equipment.
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	colorless liquid
Colour	colorless liquid
Odor	No information available
Odor threshold	No information available
pH	No information available
Melting point/freezing point(°C)	-111 (Carbon disulphide)
Initial boiling point and boiling range(°C)	46 (Carbon disulphide)
Flash point(Closed cup,°C)	-30 (Carbon disulphide)
Evaporation rate	No information available
Flammability	No information available
Upper/lower explosive limits[%(v/v)]	Upper limit : 50 (Carbon disulphide); Lower limit : 1 (Carbon disulphide)
Vapor pressure	48kPa (25°C,Carbon disulphide)
Vapor density(Air = 1)	2.63 (Carbon disulphide)
Relative density(Water=1)	1.26 (Carbon disulphide)
Solubility	2.9g/L (20 °C,Carbon disulphide)
n-octanol/water partition coefficient	1.84 (Carbon disulphide)
Auto-ignition temperature(°C)	90 (Carbon disulphide)
Decomposition temperature(°C)	No information available
Kinematic viscosity	No information available
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	May catch fire spontaneously in the air. Reactions with metals form metal organic coumpounds.
10.4 Conditions to avoid	Incompatible materials, heat, flame and spark.
10.5 Incompatible materials	Nitrate and nitrite, halogens oxyacid salts, potassium permanganate, persulfate, halogen and strong oxidants. Metal, oxidantss and alkali.
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

10 Mix chlorobenzenes in carbon disulfide	
Skin corrosion/irritation	Causes skin irritation(Category 2)
Serious eye damage/irritation	Causes serious eye irritation(Category 2)
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	Suspected of damaging fertility and the unborn child(Category 2)
STOT-single exposure	Based on available data, the classification criteria are not met
STOT-repeated exposure	Causes damage to organs through prolonged or repeated exposure(Category 1)
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)
4-chlorotoluene	2100mg/kg(Rat)	No information available	No information available
Chlorobenzene	1110mg/kg(Rat)	No information available	No information available
1,4-dichlorobenzene	500~5000mg/kg(Rat)	> 2000mg/kg(Rabbit)	No information available
1,2-dichlorobenzene	500mg/kg(Rat)	> 10000mg/kg(Rabbit)	No information available
1,2,4-trichlorobenzene	756mg/kg(Rat)	6139mg/kg(Rat)	No information available
2-chlorotoluene	3900mg/kg(Rat)	No information available	No information available
1,3,5-trichlorobenzene	800mg/kg(Rat)	No information available	No information available
1,2,3-trichlorobenzene	1830mg/kg(Rat)	No information available	No information available
Carbon disulphide	1200mg/kg(Rat)	No information available	No information available

Carcinogenicity

Component	List of carcinogens by the IARC Monographs	Report on Carcinogens by NTP

Carbon disulphide	Not Listed	Not Listed
Chlorobenzene	Not Listed	Not Listed
2-chlorotoluene	Not Listed	Not Listed
3-chlorotoluene	Not Listed	Not Listed
4-chlorotoluene	Not Listed	Not Listed
1,2-dichlorobenzene	Category 3	Not Listed
1,3-dichlorobenzene	Category 3	Not Listed
1,4-dichlorobenzene	Category 2B	Category R
1,2,3-trichlorobenzene	Not Listed	Not Listed
1,2,4-trichlorobenzene	Not Listed	Not Listed
1,3,5-trichlorobenzene	Not Listed	Not Listed

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

Component	Endocrine disrupting properties
Carbon disulphide	Existing research data indicates that this substance is not a reproductive or developmental toxicant, nor does it possess potential endocrine-disrupting properties; therefore, it is not considered a human endocrine disruptor.
Chlorobenzene	No information available
2-chlorotoluene	No information available
3-chlorotoluene	No information available
4-chlorotoluene	No information available
1,2-dichlorobenzene	No information available
1,3-dichlorobenzene	No information available
1,4-dichlorobenzene	No information available
1,2,3-trichlorobenzene	No information available
1,2,4-trichlorobenzene	No information available
1,3,5-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
4-chlorotoluene	LC_{50} : 5.92mg/L (96h)(Fish)	EC_{50} : 2.0mg/L (48h)(Crustaceans)	ErC_{50} : 6.1mg/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)

Chlorobenzene	LC_{50} : 6.6mg/L (96h)(Fish)	EC_{50} : 5.29mg/L (48h)(Crustaceans)	ErC_{50} : 202mg/L (96h)(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)
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-trichlorobenzene	LC_{50} : 2.4mg/L (96h)(Fish)	EC_{50} : 2.05mg/L (48h)(Crustaceans)	ErC_{50} : 5.7mg/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)
1,3,5-trichlorobenzene	LC_{50} : 3.2mg/L (96h)(Fish)	EC_{50} : 2.9mg/L (48h)(Crustaceans)	ErC_{50} : >4.8mg/L (72h)(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)
Carbon disulphide	LC_{50} : 3mg/L (96h)(Fish)	No information available	ErC_{50} : 21mg/L (96h)(Algae)

Chronic aquatic toxicity

Component	Fish	Crustaceans	Algae or other aquatic plants
4-chlorotoluene	No information available	NOEC : 0.32mg/L(Crustaceans)	NOEC : 2.2mg/L(Algae)
1,3-dichlorobenzene	NOEC : 0.7mg/L(Fish)	NOEC : <0.10mg/L(Crustaceans)	NOEC : 2.2mg/L(Algae)
Chlorobenzene	No information available	NOEC : 0.72mg/L(Crustaceans)	No information available
1,4-dichlorobenzene	NOEC : 0.9mg/L(Fish)	NOEC : 0.10mg/L(Crustaceans)	NOEC : 0.83mg/L(Algae)
1,2-dichlorobenzene	NOEC : 0.8mg/L(Fish)	NOEC : <0.10mg/L(Crustaceans)	NOEC : 2.6mg/L(Algae)
1,2,4-trichlorobenzene	NOEC : 0.04mg/L(Fish)	NOEC : 0.10mg/L(Crustaceans)	NOEC : 2.2mg/L(Algae)
2-chlorotoluene	No information available	NOEC : 0.31mg/L(Crustaceans)	NOEC : 2.6mg/L(Algae)
1,3,5-trichlorobenzene	No information available	NOEC : 0.32mg/L(Crustaceans)	NOEC : 0.59mg/L(Algae)
1,2,3-trichlorobenzene	NOEC : 0.32mg/L(Fish)	NOEC : 0.17mg/L(Crustaceans)	NOEC : 0.23mg/L(Algae)

12.2 Persistence and degradability

Component	Persistence (water/soil)	Persistence (air)
2-chlorotoluene	High	High
3-chlorotoluene	High	High
4-chlorotoluene	High	High
1,2-dichlorobenzene	High(Half-life = 360 days)	Medium(Half-life = 63.67 days)
1,3-dichlorobenzene	High(Half-life = 360 days)	Low(Half-life = 37.13 days)
1,2,3-trichlorobenzene	High	High
1,2,4-trichlorobenzene	High(Half-life = 360 days)	Low(Half-life = 53.5 days)

1,3,5-trichlorobenzene	High	High

12.3 Bioaccumulative potential

Component	Bioaccumulative potential	Comments
2-chlorotoluene	Low	BCF=112
3-chlorotoluene	Low	Log Kow=3.28
4-chlorotoluene	Low	BCF=101.6
1,2-dichlorobenzene	Low	BCF=260
1,3-dichlorobenzene	High	BCF=6918
1,2,3-trichlorobenzene	Medium	Log Kow=4.05
1,2,4-trichlorobenzene	High	BCF=4420
1,3,5-trichlorobenzene	Medium	Log Kow=4.19

12.4 Mobility in soil

Component	log Koc	Remark
Carbon disulphide	1.53	20 ℃
Chlorobenzene	2.369	MCI method
2-chlorotoluene	2.54	20 ℃
3-chlorotoluene	2.637	
4-chlorotoluene	2.637	
1,2-dichlorobenzene	2.65	20 ℃
1,3-dichlorobenzene	2.5	
1,2,3-trichlorobenzene	2.87	
1,2,4-trichlorobenzene	2.856	
1,3,5-trichlorobenzene	2.847	

12.5 Results of PBT and vPvB assessment

Component	Results of PBT and vPvB assessment [according to (EC) No 1907/2006]
Carbon disulphide	Not PBT/vPvB
Chlorobenzene	Not PBT/vPvB
2-chlorotoluene	Not PBT/vPvB
3-chlorotoluene	Insufficient information, temporarily unable to evaluate
4-chlorotoluene	Not PBT/vPvB
1,2-dichlorobenzene	Not PBT/vPvB
1,3-dichlorobenzene	Not PBT/vPvB
1,4-dichlorobenzene	Not PBT/vPvB
1,2,3-trichlorobenzene	Insufficient information, temporarily unable to evaluate
1,2,4-trichlorobenzene	Insufficient information, temporarily unable to evaluate

1,3,5-trichlorobenzene	Insufficient information, temporarily unable to evaluate

12.6 Endocrine disrupting properties

Component	Endocrine disrupting properties
Carbon disulphide	Existing research data indicates that this substance is not a reproductive or developmental toxicant, nor does it possess potential endocrine-disrupting properties; therefore, it is not considered an environmental endocrine disruptor.
Chlorobenzene	No information available
2-chlorotoluene	No information available
3-chlorotoluene	No information available
4-chlorotoluene	No information available
1,2-dichlorobenzene	No information available
1,3-dichlorobenzene	No information available
1,4-dichlorobenzene	No information available
1,2,3-trichlorobenzene	No information available
1,2,4-trichlorobenzene	No information available
1,3,5-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
Carbon disulphide	√	√	√	√	√	√	√	√	√	√	√	√	√
Chlorobenzene	√	√	√	√	√	√	√	√	√	√	√	√	√
2-chlorotoluene	√	√	√	√	√	√	√	√	√	×	√	√	√
3-chlorotoluene	√	√	√	×	√	√	×	√	√	×	×	√	√

4-chlorotoluene	√	√	√	×	√	√	√	√	√	×	×	√	√
1,2-dichlorobenzene	√	√	√	√	√	√	√	√	√	√	√	√	√
1,3-dichlorobenzene	√	√	√	√	√	√	√	√	√	×	√	√	√
1,4-dichlorobenzene	√	√	√	√	√	√	√	√	√	√	√	√	√
1,2,3-trichlorobenzene	√	√	√	√	√	√	√	√	√	√	×	√	√
1,2,4-trichlorobenzene	√	√	√	√	√	√	√	√	√	√	√	√	√
1,3,5-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
Carbon disulphide	×	×	×
Chlorobenzene	×	×	×
2-chlorotoluene	×	×	×
3-chlorotoluene	×	×	×
4-chlorotoluene	×	×	×
1,2-dichlorobenzene	×	×	×
1,3-dichlorobenzene	×	×	×
1,4-dichlorobenzene	×	×	×
1,2,3-trichlorobenzene	×	×	×
1,2,4-trichlorobenzene	×	×	×
1,3,5-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
Carbon disulphide	×	×	×	√	√	√	×	×	×
Chlorobenzene	×	×	×	√	√	×	×	×	×
2-chlorotoluene	×	×	×	√	√	×	×	×	×

3-chlorotoluene	×	×	×	√	√	×	×	×	×
4-chlorotoluene	×	×	×	√	√	×	×	×	×
1,2-dichlorobenzene	×	×	×	√	√	√	×	×	×
1,3-dichlorobenzene	×	×	×	√	√	×	×	×	×
1,4-dichlorobenzene	×	×	√	√	√	×	×	×	×
1,2,3-trichlorobenzene	×	×	×	√	√	×	×	×	×
1,2,4-trichlorobenzene	×	×	√	√	√	×	√	×	×
1,3,5-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
Carbon disulphide	WGK 2	
Chlorobenzene	WGK 2	
2-chlorotoluene	WGK 2	
4-chlorotoluene	WGK 2	
1,2-dichlorobenzene	WGK 2	
1,3-dichlorobenzene	WGK 2	
1,4-dichlorobenzene	WGK 2	
1,2,3-trichlorobenzene	WGK 3	
1,2,4-trichlorobenzene	WGK 3	
1,3,5-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
2-chlorotoluene	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	
3-chlorotoluene	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.	
4-chlorotoluene	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.	
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	
1,2,3-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.	
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.	

German technical rules for hazardous substances(TRGS)

Component	TRGS	Remark
Carbon disulphide	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|TRGS 523	
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	
2-chlorotoluene	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 401|TRGS 500|TRGS 509|TRGS 510|TRGS 800|TRGS 720|TRGS 721|TRGS 722|TRGS 723|TRGS 724	
3-chlorotoluene	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 500|TRGS 509|TRGS 510|TRGS 800|TRGS 720|TRGS 721|TRGS 722|TRGS 723|TRGS 724	
4-chlorotoluene	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 401|TRGS 500|TRGS 509|TRGS 510|TRGS 800|TRGS 720|TRGS 721|TRGS 722|TRGS 723|TRGS 724	
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-dichlorobenzene	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 402|TRGS 500|TRGS 509|TRGS 510|TRGS 800	
1,4-dichlorobenzene	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 402|TRGS 401|TRGS 500|TRGS 509|TRGS 510|TRGS 800	
1,2,3-trichlorobenzene	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 402|TRGS 401|TRGS 500|TRGS 509|TRGS 510|TRGS 800	
1,2,4-trichlorobenzene	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 402|TRGS 401|TRGS 500|TRGS 509|TRGS 510|TRGS 800	
1,3,5-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	

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	2026/01/18
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.