

Safety Data Sheet

10 Mix haloacetic acids in methyl-tert-butyl ether



Version : V2.0.0.1

Report No. : BWQ9208-2016-MSDS-US

Creation Date : 2025/10/13

Revision Date : -

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

1 Identification

Product identifier

Product Name	10 Mix haloacetic acids in methyl-tert-butyl ether
Cat No.	BWQ9208-2016
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
Skin Corrosion/Irritation	Category 2

Label elements

Hazard pictograms	 
Signal word	Danger

Hazard statements

H225	Highly flammable liquid and vapour
H315	Causes skin irritation

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.
P264	Wash hands and other parts of the body (if related) thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

◆ Response

P321	Specific treatment (see related instructions on the label).
P302+P352	IF ON SKIN: Wash with plenty of water.
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].

◆ Storage

P403+P235	Store in a well-ventilated place. Keep cool.
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◆ Disposal

P501	Dispose of contents/container in accordance with local/regional/national/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	Drowsiness. Dizziness. Headache. Weakness. Unconsciousness.
Ingestion	Abdominal pain. Nausea. Vomiting. (Further see Inhalation).
Skin Contact	Dry skin. Redness.
Eye	Redness.

◆ 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, %)
tert-butyl methyl ether	1634-04-4	216-653-1	99.87
Chloroacetic acid	79-11-8	201-178-4	0.013
Dichloroacetic acid	79-43-6	201-207-0	0.013
Trichloroacetic acid	76-03-9	200-927-2	0.013
Bromoacetic acid	79-08-3	201-175-8	0.013
Dibromoacetic acid	631-64-1	211-165-5	0.013
Tribromoacetic acid	75-96-7	200-919-9	0.013
Bromochloroacetic acid	5589-96-8	-	0.013
Bromodichloro-aceticaci	71133-14-7	-	0.013
Chlorodibromoacetic acid	5278-95-5	-	0.013
2,2-dichloropropionic acid	75-99-0	200-923-0	0.013

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 and then wash skin with water and soap.
Ingestion	Rinse mouth. Give a slurry of activated charcoal in water to drink. Do NOT induce vomiting. Refer for medical attention.
Inhalation	Fresh air, rest. Artificial respiration may be needed. 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.
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Unsuitable extinguishing media	Use of water spray when fighting fire may be inefficient.
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| 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.

| 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	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.

| 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	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.

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.
4	Store away from incompatible materials and foodstuff containers.

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
tert-butyl methyl ether	Permissible exposure standards for workers in the workplace	40	144	60	180
	Australia	25	92	75	275
	Canada - Ontario	40	-	-	-
	European Union	50	183.5	100	367
	New Zealand	25	92	75	275
	USA - ACGIH	50	-	-	-
Chloroacetic acid	Australia	0.3	1.2	-	-
	Canada - Ontario	0.5	-	-	-
	New Zealand	0.3	1.2	-	-
	USA - ACGIH	0.5(inhalable fraction and vapor)	-	-	-

	Austria	1	4	1	4
	Belgium	0.5	2	-	-
Dichloroacetic acid	USA - ACGIH	0.5	-	-	-
	Belgium	0.5	2.7	-	-
	Germany (AGS)	0.2	1.1	0.2	1.1
	Germany (DFG)	0.2	1.1	0.2	1.1
	Ireland	0.5	-	-	-
	Latvia	-	4	-	-
Trichloroacetic acid	Permissible exposure standards for workers in the workplace	1	6.7	2	13.4
	Australia	1	6.7	-	-
	Canada - Ontario	0.5	-	-	-
	New Zealand	1	6.7	-	-
	USA - ACGIH	0.5	-	-	-
	USA - NIOSH	1	7	-	-
2,2-dichloropropionic acid	Permissible exposure standards for workers in the workplace	1	5.8	2	11.6
	Australia	1	5.8	-	-
	Canada - Ontario	-	5	-	-
	New Zealand	7	5.8	-	-
	USA - ACGIH	-	5(inhalable fraction)	-	-
	USA - NIOSH	1	6	-	-

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 respiratory protective equipment.
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)	-109 (tert-butyl methyl ether)
Initial boiling point and boiling range(°C)	55 (tert-butyl methyl ether)
Flash point(Closed cup, °C)	-28 (tert-butyl methyl ether)
Evaporation rate	No information available
Flammability	No information available
Upper/lower explosive limits[% (v/v)]	Upper limit :15.1(tert-butyl methyl ether) ;Lower limit :1.6(tert-butyl methyl ether)
Vapor pressure	27kPa (20°C,tert-butyl methyl ether)
Vapor density(Air = 1)	3.0 (tert-butyl methyl ether)
Relative density(Water=1)	0.7 (tert-butyl methyl ether)
Solubility	42 g/L (20°C,tert-butyl methyl ether)
n-octanol/water partition coefficient	1.06 (tert-butyl methyl ether)
Auto-ignition temperature(°C)	375 (tert-butyl methyl ether)
Decomposition temperature(°C)	No information available
Kinematic viscosity	No information available

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	No information available.
Conditions to avoid	Incompatible materials, heat, flame and spark.
Incompatible materials	No information available.
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)
tert-butyl methyl ether	4000mg/kg(Rat)	No information available	84.999mg/L(Rat)
Bromoacetic acid	50mg/kg(Rat)	59.9mg/kg(Rabbit)	No information available
Trichloroacetic acid	400mg/kg(Rat)	No information available	No information available

Chloroacetic acid	650mg/kg(Rat)	305mg/kg(Rat)	0.18mg/L(Rat)
2,2-dichloropropionic acid	9330mg/kg(Rat)	> 5000mg/kg(Rat)	No information available
Dichloroacetic acid	2820mg/kg(Rat)	803mg/kg(Rabbit)	No information available

Carcinogenicity

Component	List of carcinogens by the IARC Monographs	Report on Carcinogens by NTP	OSHA Carcinogen List
tert-butyl methyl ether	Category 2B	Not Listed	Not Listed
Chloroacetic acid	Not Listed	Not Listed	Not Listed
Dichloroacetic acid	Category 2B	Category R	Not Listed
Trichloroacetic acid	Category 2B	Not Listed	Not Listed
Bromoacetic acid	Not Listed	Not Listed	Not Listed
Dibromoacetic acid	Category 2B	Category R	Not Listed
Tribromoacetic acid	Not Listed	Category R	Not Listed
Bromochloroacetic acid	Category 2B	Category R	Not Listed
Bromodichloro-aceticaci	Not Listed	Category R	Not Listed
Chlorodibromoacetic acid	Not Listed	Category R	Not Listed
2,2-dichloropropionic acid	Not Listed	Not Listed	Not Listed

Others

10 Mix haloacetic acids in methyl-tert-butyl ether	
Skin corrosion/irritation	Causes skin irritation(Category 2)
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-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
tert-butyl methyl ether	LC ₅₀ :672mg/L (96h)(Fish)	EC ₅₀ : >120mg/L (48h)(Crustaceans)	ErC ₅₀ : >110mg/L (72h)(Algae)
Bromoacetic acid	LC ₅₀ :103mg/L (96h)(Fish)	EC ₅₀ : 42mg/L (48h)(Crustaceans)	ErC ₅₀ : 0.22mg/L (96h)(Algae)
Trichloroacetic acid	LC ₅₀ : 2500mg/L (96h)(Fish)	EC ₅₀ : 2000mg/L (48h)(Crustaceans)	No information available
Chloroacetic acid	LC ₅₀ : 72mg/L (96h)(Fish)	EC ₅₀ : 77mg/L (48h)(Crustaceans)	ErC ₅₀ : 0.16mg/L (72h)(Algae)

2,2-dichloropropionic acid	LC ₅₀ :290mg/L (96h)(Fish)	EC ₅₀ : 13.5mg/L (48h)(Crustaceans)	No information available
Dichloroacetic acid	LC ₅₀ : 2000mg/L (96h)(Fish)	No information available	ErC ₅₀ : 17mg/L (72h)(Algae)

Chronic aquatic toxicity

Component	Fish	Crustaceans	Algae or other aquatic plants
tert-butyl methyl ether	No information available	NOEC : 11mg/L(Crustaceans)	NOEC : >110mg/L(Algae)
Bromoacetic acid	NOEC : ≥100mg/L(Fish)	No information available	No information available
Chloroacetic acid	No information available	No information available	NOEC : 0.033mg/L(Algae)
Dichloroacetic acid	No information available	No information available	NOEC : 0.093mg/L(Algae)

Persistence and degradability

Component	Persistence (water/soil)	Persistence (air)
Bromoacetic acid	Low	Low
Tribromoacetic acid	High	High

Bioaccumulative potential

Component	Bioaccumulative potential	Comments
Bromoacetic acid	Low	Log Kow=0.41
Tribromoacetic acid	Low	Log Kow=1.7109

Mobility in soil

Component	log Koc	Remark
tert-butyl methyl ether	0.96	20 °C
Chloroacetic acid	-0.14	20 °C
Dichloroacetic acid	0.35	20 °C
Trichloroacetic acid	0.00	20 °C
Bromoacetic acid	1.51	20 °C
Tribromoacetic acid	0.437	

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	2398
UN proper shipping name	METHYL tert-BUTYL ETHER
Transport hazard class	3
Transport subsidiary hazard class	None
Packing group	II
Marine pollutant (Yes or no)	No

| IATA-DGR

UN number	2398
UN proper shipping name	METHYL tert-BUTYL ETHER
Transport hazard class	3
Transport subsidiary hazard class	None
Packing group	II

| UN-ADR

UN number	2398
UN proper shipping name	METHYLtert-BUTYLETHER
Transport hazard class	3
Transport subsidiary hazard class	None
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	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
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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.

15 Regulatory information

International chemical inventory

Component	A	B	C	D	E	F	G	H	I	J	K	L	M
tert-butyl methyl ether	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Chloroacetic acid	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Dichloroacetic acid	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Trichloroacetic acid	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bromoacetic acid	✓	✓	✓	✗	✓	✓	✓	✓	✓	✗	✓	✓	✓
Dibromoacetic acid	✗	✓	✓	✗	✗	✗	✗	✗	✓	✗	✗	✓	✓
Tribromoacetic acid	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✓	✓
Bromochloroacetic acid	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✓
Bromodichloro-aceticaci	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✓
Chlorodibromoacetic acid	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✓
2,2-dichloropropionic acid	✗	✓	✓	✗	✓	✓	✓	✗	✓	✗	✓	✓	✓

- [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
tert-butyl methyl ether	✗	✗	✗
Chloroacetic acid	✗	✗	✗
Dichloroacetic acid	✗	✗	✗
Trichloroacetic acid	✗	✗	✗
Bromoacetic acid	✗	✗	✗
Dibromoacetic acid	✗	✗	✗
Tribromoacetic acid	✗	✗	✗
Bromochloroacetic acid	✗	✗	✗

Bromodichloro-acetic acid	x	x	x
Chlorodibromoacetic acid	x	x	x
2,2-dichloropropionic acid	x	x	x

[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
tert-butyl methyl ether	✓	x	✓	✓	✓	✓	✓	x
Chloroacetic acid	✓	✓	✓	✓	✓	✓	✓	x
Dichloroacetic acid	x	x	x	x	✓	x	✓	✓
Trichloroacetic acid	x	x	x	✓	✓	✓	✓	✓
Bromoacetic acid	x	x	x	x	✓	x	✓	x
Dibromoacetic acid	x	x	x	x	x	x	x	✓
Tribromoacetic acid	x	x	x	x	x	x	x	x
Bromochloroacetic acid	x	x	x	x	x	x	x	✓
Bromodichloro-acetic acid	x	x	x	x	x	x	x	✓
Chlorodibromoacetic acid	x	x	x	x	x	x	x	x
2,2-dichloropropionic acid	x	x	✓	✓	✓	✓	✓	x

[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.

“x” No data or not included in the regulations.

16 Other information

Information on revision

Creation Date	2025/10/13
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	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 responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.