

## SAFETY DATA SHEET

According to JIS Z 7253:2019  
**Revision date** 01-Mar-2024  
 Revision Number 1.06

## Section 1: PRODUCT AND COMPANY IDENTIFICATION

<b>Product Name</b>	14 VOC Mixture Standard Solution (each 1mg/mL Methanol Solution)
<b>Product Code</b>	220-02421

<b>Supplier</b>	FUJIFILM Wako Pure Chemical Corporation 1-2 Doshomachi 3-Chome, Chuo-ku, Osaka 540-8605, Japan Phone: +81-6-6203-3741 Fax: +81-6-6203-2029
<b>Emergency telephone number</b>	+81-6-6203-3741 / +81-3-3270-8571
<b>Recommended uses</b>	For research use only
<b>Restrictions on use</b>	Seek expert judgment when using for purposes other than those recommended.

## Section 2: HAZARDS IDENTIFICATION

## GHS classification

Classification of the substance or mixture

<b>Flammable liquids</b>	Category 2
<b>Acute toxicity - Oral</b>	Category 4
<b>Serious eye damage/eye irritation</b>	Category 2A
<b>Skin sensitization</b>	Category 1
<b>Carcinogenicity</b>	Category 1A
<b>Reproductive Toxicity</b>	Category 1B
<b>Specific target organ toxicity (single exposure)</b>	Category 1, Category 3
<b>Category 1</b> central nervous system, Visual organ, systemic toxicity	
<b>Category 3</b> Narcotic effects	
<b>Specific target organ toxicity (repeated exposure)</b>	Category 1
<b>Category 1</b> central nervous system, Visual organ	
<b>Acute aquatic toxicity</b>	Category 3
<b>Chronic aquatic toxicity</b>	Category 3
<b>Ozone</b>	Category 1

## Pictograms



Signal word

Danger

## Hazard statements

- H225 - Highly flammable liquid and vapor
- H319 - Causes serious eye irritation
- H302 - Harmful if swallowed
- H350 - May cause cancer
- H360 - May damage fertility or the unborn child
- H336 - May cause drowsiness or dizziness
- H317 - May cause an allergic skin reaction

H412 - Harmful to aquatic life with long lasting effects  
 H420 - Harms public health and the environment by destroying ozone in the upper atmosphere  
 H402 - Harmful to aquatic life  
 H370 - Causes damage to the following organs: central nervous system, Visual organ, systemic toxicity  
 H372 - Causes damage to the following organs through prolonged or repeated exposure: central nervous system, Visual organ

**Precautionary statements-(Prevention)**

- Obtain special instructions before use
- Do not handle until all safety precautions have been read and understood
- Use personal protective equipment as required
- Contaminated work clothing should not be allowed out of the workplace
- Wear protective gloves
- Do not breathe dust/fume/gas/mist/vapors/spray
- Wash face, hands and any exposed skin thoroughly after handling
- Do not eat, drink or smoke when using this product
- Use only outdoors or in a well-ventilated area
- Avoid release to the environment
- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
- Keep container tightly closed
- Ground/bond container and receiving equipment
- Use explosion-proof electrical/ ventilating / lighting / equipment
- Use only non-sparking tools
- Take precautionary measures against static discharge
- Keep cool

**Precautionary statements-(Response)**

- IF exposed: Call a POISON CENTER or doctor/physician
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- If eye irritation persists: Get medical advice/attention
- If skin irritation or rash occurs: Get medical advice/attention
- Wash contaminated clothing before reuse
- IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
- Call a POISON CENTER or doctor/physician if you feel unwell
- IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
- Rinse mouth
- In case of fire: Use suitable extinguishing media for extinction

**Precautionary statements-(Storage)**

- Store in a well-ventilated place. Keep container tightly closed
- Store locked up

**Precautionary statements-(Disposal)**

- Dispose of contents/container to an approved waste disposal plant
- Refer to manufacturer/supplier for information on recovery/recycling

**Others**

**Other hazards** Not available

**Section 3: COMPOSITION/INFORMATION ON INGREDIENTS**

**Single Substance or Mixture** Mixture

Chemical Name	Weight-%	Molecular weight	ENCS	ISHL No.	CAS RN
Methanol	98.60	32.04	(2)-201	*	67-56-1
Benzene	0.10	78.11	(3)-1	*	71-43-2
1,1,1-Trichloroethane	0.10	133.40	(2)-55	*	71-55-6
Vinyl chloride	0.10	62.49	(2)-102	*	75-01-4
Dichloromethane	0.10	84.93	(2)-36	*	75-09-2
1,1-Dichloroethylene	0.10	96.94	(2)-103	*	75-35-4

1,1,2-Trichloroethane	0.10	133.40	(2)-55	*	79-00-5
Trichloroethylene	0.10	131.39	(2)-105	*	79-01-6
cis-1,3-Dichloropropene	0.10	110.97	(2)-125	2-(13)-29	10061-01-5
trans-1,3-Dichloropropene	0.10	110.97	(2)-125	2-(13)-29	10061-02-6
1,2-Dichloroethane	0.10	98.96	(2)-54	2-(13)-23	107-06-2
Tetrachloroethylene	0.10	165.83	(2)-114	*	127-18-4
cis-1,2-Dichloroethylene	0.10	96.94	(2)-103	*	156-59-2
trans-1,2-Dichloroethylene	0.10	96.94	(2)-103	*	156-60-5
Carbon Tetrachloride	0.10	153.82	(2)-38	2-(13)-47	56-23-5

**Note on ISHL No.:** \* in the table means announced chemical substances.

## Section 4: FIRST AID MEASURES

### Inhalation

Remove to fresh air. If symptoms persist, call a physician.

### Skin contact

Wash off immediately with soap and plenty of water. If symptoms persist, call a physician.

### Eye contact

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediate medical attention is required.

### Ingestion

Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. Do not induce vomiting without medical advice.

### Protection of first-aiders

Use personal protective equipment as required.

## Section 5: FIRE FIGHTING MEASURES

### Suitable extinguishing media

Carbon dioxide (CO<sub>2</sub>), Foam, Extinguishing powder, Sand

### Unsuitable extinguishing media

No information available

### Specific hazards arising from the chemical product

Thermal decomposition can lead to release of irritating and toxic gases and vapors. Vapors may form explosive mixtures with air

### Special extinguishing method

No information available

### Special protective actions for fire-fighters

Use personal protective equipment as required. Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

## Section 6: ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

For indoor, provide adequate ventilation process until the end of working. Deny unnecessary entry other than the people involved by, for example, using a rope. While working, wear appropriate protective equipments to avoid adhering it on skin, or inhaling the gas. Work from windward, and retract the people downwind.

### Environmental precautions

To be careful not discharged to the environment without being properly handled waste water contaminated.

### Methods and materials for contaminant and methods and materials for cleaning up

Absorb dry sand, earth, sawdust and the waste. Collect empty container that can be sealed.

### Recovery, neutralization

No information available

#### Secondary disaster prevention measures

Clean contaminated objects and areas thoroughly observing environmental regulations.

## Section 7: HANDLING AND STORAGE

### Handling

#### Technical measures

Highly flammable. Avoid contact with high temperature objects, spark, and strong oxidizing agents. To cut with care and wear protective gloves and protective goggles to ampoule time of the opening (Cutting method to check the label). Use with local exhaust ventilation.

#### Precautions

Do not rough handling containers, such as upsetting, falling, giving a shock, and dragging. Prevent leakage, overflow, and scattering. Not to generate steam and dust in vain. Seal the container after use. After handling, wash hands and face, and then gargle. In places other than those specified, should not be smoking or eating and drinking. Should not be brought contaminated protective equipment and gloves to rest stops. Deny unnecessary entry of non-emergency personnel to the handling area.

#### Safety handling precautions

Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

### Storage

#### Safe storage conditions

**Storage conditions** Container protected from light, and store tightly closed in freezer (-20°C). Store locked up.

**Safe packaging material** Ampoule

**Incompatible substances** Strong oxidizing agents

## Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### Engineering controls

In case of indoor workplace, seal the source or use a local exhaust system. Provide the safety shower facility, and hand- and eye-wash facility. And display their position clearly.

### Exposure limits

Chemical Name	JSOH (Japan)	ISHL (Japan)	ACGIH
Methanol 67-56-1	TWA: 200 ppm OEL TWA: 260 mg/m <sup>3</sup> OEL Skin ISHL/ACL: 200 ppm	200ppm	TWA 200ppm(260mg/m <sup>3</sup> ) STEL 250ppm
Benzene 71-43-2	Skin ISHL/ACL: 1 ppm	ISHL/ACL: 1 ppm	STEL: 2.5 ppm TWA: 0.5 ppm Skin
1,1,1-Trichloroethane 71-55-6	TWA: 200 ppm OEL TWA: 1090 mg/m <sup>3</sup> OEL ISHL/ACL: 200 ppm	ISHL/ACL: 200 ppm	STEL: 450 ppm TWA: 350 ppm
Vinyl chloride 75-01-4	ISHL/ACL: 2 ppm	ISHL/ACL: 2 ppm	TWA: 1 ppm
Dichloromethane 75-09-2	Ceiling: 100 ppm Ceiling: 347 mg/m <sup>3</sup> TWA: 173 mg/m <sup>3</sup> OEL Skin ISHL/ACL: 50 ppm	ISHL/ACL: 50 ppm	TWA: 50 ppm
1,1-Dichloroethylene 75-35-4	N/A	N/A	TWA: 5 ppm
1,1,2-Trichloroethane 79-00-5	TWA: 10 ppm OEL TWA: 55 mg/m <sup>3</sup> OEL	N/A	TWA: 10 ppm Skin

	Skin		
Trichloroethylene 79-01-6	TWA: 25 ppm OEL TWA: 135 mg/m <sup>3</sup> OEL ISHL/ACL: 10 ppm	ISHL/ACL: 10 ppm	STEL: 25 ppm TWA: 10 ppm
trans-1,3-Dichloropropene 10061-02-6	N/A	N/A	TWA 1ppm(skin) 4.5mg/m <sup>3</sup>
1,2-Dichloroethane 107-06-2	TWA: 10 ppm OEL TWA: 40 mg/m <sup>3</sup> OEL ISHL/ACL: 10 ppm	ISHL/ACL: 10 ppm	TWA: 10 ppm
Tetrachloroethylene 127-18-4	TWA: OEL Skin ISHL/ACL: 25 ppm	ISHL/ACL: 25 ppm	STEL: 100 ppm TWA: 25 ppm
cis-1,2-Dichloroethylene 156-59-2	ISHL/ACL: 150 ppm	ISHL/ACL: 150 ppm	TWA: 200 ppm
trans-1,2-Dichloroethylene 156-60-5	ISHL/ACL: 150 ppm	ISHL/ACL: 150 ppm	TWA: 200 ppm
Carbon Tetrachloride 56-23-5	TWA: 5 ppm OEL TWA: 31 mg/m <sup>3</sup> OEL Skin ISHL/ACL: 5 ppm	ISHL/ACL: 5 ppm	STEL: 10 ppm TWA: 5 ppm Skin

Chemical Name	Concentration standard value set by the Minister of Health, Labor and Welfare (8hr)	Concentration standard value set by the Minister of Health, Labor and Welfare (Short-Term)
1,1-Dichloroethylene 75-35-4	5 ppm	N/A
cis-1,3-Dichloropropene 10061-01-5	1 ppm	N/A
trans-1,3-Dichloropropene 10061-02-6	1 ppm	N/A

**Personal protective equipment****Respiratory protection**

gas mask for organic gas ( JIS T 8152 )

**Hand protection**

chemical protective gloves ( JIS T 8116 )

**Eye protection**

protective eyeglasses or chemical safety goggles (JIS T 8147)

**Skin and body protection**

Long-sleeved work clothes

**General hygiene considerations**

Handle in accordance with good industrial hygiene and safety practice.

If this product is classified as "Chemical Substances Hazardous to Skin, etc.", use appropriate protective equipment to them.

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Since data of the mixture is not available, data as methanol is described.

**Form****Color**

colorless

**Turbidity**

clear

**Appearance**

liquid

**Odor**

characteristic odor

**Melting point/freezing point**

-98 °C

**Boiling point, initial boiling point and boiling range**

64 °C

**Flammability**

Highly flammable liquid and vapor

**Evaporation rate:**

no data available

**Flammability (solid, gas):**

no data available

**Upper/lower flammability or explosive limits**

Upper:	36.5 vol%
Lower:	6.0 vol%
Flash point	11 °C
Auto-ignition temperature:	464 °C
Decomposition temperature:	no data available
pH	no data available
Viscosity (coefficient of viscosity)	no data available
Dynamic viscosity	no data available
Solubilities	water , Ethanol , acetone : Very soluble.
n-Octanol/water partition coefficient:(log Pow)	-0.74
Vapour pressure	no data available
Specific Gravity / Relative density	0.789 - 0.792g/mL
Vapour density	no data available
Particle characteristics	no data available

## Section 10: STABILITY AND REACTIVITY

### Stability

Reactivity	no data available
Chemical stability	May be altered by light.
Hazardous reactions	None under normal processing
Conditions to avoid	Extremes of temperature and direct sunlight, Heat, flames and sparks, static electricity, spark
Incompatible materials	Strong oxidizing agents
Hazardous decomposition products	Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> ), Halides

## Section 11: TOXICOLOGICAL INFORMATION

### Acute toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Methanol	1400 mg/kg ( Human )	15800 mg/kg ( Rabbit )	>31500 ppm ( Rat ) 4 h ( vapor )
Benzene	3,400 - 5,600 mg/kg ( Rat )	>8,200 mg/kg ( Rabbit )	13,700 ppm ( Rat )
1,1,1-Trichloroethane	> 2000 mg/kg ( Rat )	> 2000 mg/kg ( Rat )	15588 ppm ( Rat ) 4 h
Vinyl chloride	>4000 mg/kg (Rat)	N/A	150000 ppm (Rat) 2 h
Dichloromethane	2120 mg/kg ( Rat Male )	N/A	18,371 ppm ( Rat ) 4 h
1,1-Dichloroethylene	1500 mg/kg ( Rat )	N/A	6350 ppm ( Rat ) 4 h
1,1,2-Trichloroethane	837 mg/kg ( Rat )	5,380 mg/kg ( Rabbit )	2000 ppm ( Rat ) 4 h
Trichloroethylene	4920 mg/kg ( Rat ) 4290 mg/kg ( Rat )	> 20 g/kg ( Rabbit ) 29000 mg/kg ( Rabbit )	26 mg/L ( Rat ) 4 h
trans-1,3-Dichloropropene	470mg/kg(Rat)	775mg/kg(Rat)	1000ppm/2h(Rat)
1,2-Dichloroethane	670 mg/kg (Rat)	2800 mg/kg (Rabbit)	1000 ppm (Rat) 4 h
Tetrachloroethylene	2629 mg/kg ( Rat )	N/A	27.8 mg/L ( Rat ) 4 h
cis-1,2-Dichloroethylene	N/A	N/A	13,700 ppm ( Rat ) 4 h
trans-1,2-Dichloroethylene	1,235 mg/kg ( Rat )	> 5,000 mg/kg ( Rabbit )	24,041 ppm ( Rat ) 4 h
Carbon Tetrachloride	2350 mg/kg ( Rat )	15000 mg/kg ( Rabbit ) 5070 mg/kg ( Rat )	8000 ppm ( Rat ) 4 h

Chemical Name	Acute toxicity -oral- source information	Acute toxicity -dermal- source information	Acute toxicity -inhalation gas-source information
Methanol	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
Benzene	Based on the NITE GHS	Based on the NITE GHS	Based on the NITE GHS



1,2-Dichloroethane	Based on the NITE GHS classification results.
Tetrachloroethylene	Based on the NITE GHS classification results.
cis-1,2-Dichloroethylene	Based on the NITE GHS classification results.
trans-1,2-Dichloroethylene	Based on the NITE GHS classification results.
Carbon Tetrachloride	Based on the NITE GHS classification results.

**Serious eye damage/ irritation**

Chemical Name	Serious eye damage/irritation source information
Methanol	Based on the NITE GHS classification results.
Benzene	Based on the NITE GHS classification results.
1,1,1-Trichloroethane	Based on the NITE GHS classification results.
Vinyl chloride	Based on the NITE GHS classification results.
Dichloromethane	Based on the NITE GHS classification results.
1,1-Dichloroethylene	Based on the NITE GHS classification results.
1,1,2-Trichloroethane	Based on the NITE GHS classification results.
Trichloroethylene	Based on the NITE GHS classification results.
trans-1,3-Dichloropropene	Based on the NITE GHS classification results.
1,2-Dichloroethane	Based on the NITE GHS classification results.
Tetrachloroethylene	Based on the NITE GHS classification results.
cis-1,2-Dichloroethylene	Based on the NITE GHS classification results.
trans-1,2-Dichloroethylene	Based on the NITE GHS classification results.
Carbon Tetrachloride	Based on the NITE GHS classification results.

**Respiratory or skin sensitization**

Chemical Name	Respiratory or Skin sensitization source information
Methanol	Based on the NITE GHS classification results.
Benzene	Based on the NITE GHS classification results.
1,1,1-Trichloroethane	Based on the NITE GHS classification results.
Vinyl chloride	Based on the NITE GHS classification results.
Dichloromethane	Based on the NITE GHS classification results.
1,1-Dichloroethylene	Based on the NITE GHS classification results.
1,1,2-Trichloroethane	Based on the NITE GHS classification results.
Trichloroethylene	Based on the NITE GHS classification results.
trans-1,3-Dichloropropene	Based on the NITE GHS classification results.
1,2-Dichloroethane	Based on the NITE GHS classification results.
Tetrachloroethylene	Based on the NITE GHS classification results.
cis-1,2-Dichloroethylene	Based on the NITE GHS classification results.
trans-1,2-Dichloroethylene	Based on the NITE GHS classification results.
Carbon Tetrachloride	Based on the NITE GHS classification results.

**Reproductive cell mutagenicity**

Chemical Name	germ cell mutagenicity source information
Methanol	Based on the NITE GHS classification results.
Benzene	Based on the NITE GHS classification results.
1,1,1-Trichloroethane	Based on the NITE GHS classification results.
Vinyl chloride	Based on the NITE GHS classification results.
Dichloromethane	Based on the NITE GHS classification results.
1,1-Dichloroethylene	Based on the NITE GHS classification results.
1,1,2-Trichloroethane	Based on the NITE GHS classification results.
Trichloroethylene	Based on the NITE GHS classification results.
1,2-Dichloroethane	Based on the NITE GHS classification results.
Tetrachloroethylene	Based on the NITE GHS classification results.
cis-1,2-Dichloroethylene	Based on the NITE GHS classification results.
trans-1,2-Dichloroethylene	Based on the NITE GHS classification results.
Carbon Tetrachloride	Based on the NITE GHS classification results.

**Carcinogenicity**

Chemical Name	Carcinogenicity source information
Methanol	Based on the NITE GHS classification results.
Benzene	Based on the NITE GHS classification results.
1,1,1-Trichloroethane	Based on the NITE GHS classification results.



Vinyl chloride	Based on the NITE GHS classification results.
Dichloromethane	Based on the NITE GHS classification results.
1,1-Dichloroethylene	Based on the NITE GHS classification results.
1,1,2-Trichloroethane	Based on the NITE GHS classification results.
Trichloroethylene	Based on the NITE GHS classification results.
1,2-Dichloroethane	Based on the NITE GHS classification results.
Tetrachloroethylene	Based on the NITE GHS classification results.
cis-1,2-Dichloroethylene	Based on the NITE GHS classification results.
trans-1,2-Dichloroethylene	Based on the NITE GHS classification results.
Carbon Tetrachloride	Based on the NITE GHS classification results.

Chemical Name	NTP	IARC	ACGIH	JSOH (Japan)
Benzene 71-43-2	Known	Group 1	A1	Group 1
1,1,1-Trichloroethane 71-55-6		Group 2A		
Vinyl chloride 75-01-4	Known	Group 1	A1	Group 1
Dichloromethane 75-09-2	Reasonably Anticipated	Group 2A	A3	Group 2A
1,1-Dichloroethylene 75-35-4		Group 2B		Group 2B
1,1,2-Trichloroethane 79-00-5	-	Group 3	A3	-
Trichloroethylene 79-01-6	Known Reasonably Anticipated	Group 1	A2	Group 1
trans-1,3-Dichloropropene 10061-02-6	R (ヒトに対して発がん性がある)	グループ2B (ヒトに対して発がん性がある可能性がある)	A3 (動物発がん性物質)	「第2群B」人間に対しておそらく発がん性があると考えられる物質(証拠が比較的十分でない物質)
1,2-Dichloroethane 107-06-2	Reasonably Anticipated	Group 2B		Group 2B
Tetrachloroethylene 127-18-4	Reasonably Anticipated	Group 2A	A3	Group 2B
Carbon Tetrachloride 56-23-5	Reasonably Anticipated	Group 2B	A2	Group 2B

**Reproductive toxicity**

Chemical Name	Reproductive toxicity source information
Methanol	Based on the NITE GHS classification results.
Benzene	Based on the NITE GHS classification results.
1,1,1-Trichloroethane	Based on the NITE GHS classification results.
Vinyl chloride	Based on the NITE GHS classification results.
Dichloromethane	Based on the NITE GHS classification results.
1,1-Dichloroethylene	Based on the NITE GHS classification results.
1,1,2-Trichloroethane	Based on the NITE GHS classification results.
Trichloroethylene	Based on the NITE GHS classification results.
1,2-Dichloroethane	Based on the NITE GHS classification results.
Tetrachloroethylene	Based on the NITE GHS classification results.
cis-1,2-Dichloroethylene	Based on the NITE GHS classification results.
trans-1,2-Dichloroethylene	Based on the NITE GHS classification results.
Carbon Tetrachloride	Based on the NITE GHS classification results.

**STOT-single exposure**

Chemical Name	STOT -single exposure- source information
Methanol	Based on the NITE GHS classification results.
Benzene	Based on the NITE GHS classification results.

1,1,1-Trichloroethane	Based on the NITE GHS classification results.
Vinyl chloride	Based on the NITE GHS classification results.
Dichloromethane	Based on the NITE GHS classification results.
1,1-Dichloroethylene	Based on the NITE GHS classification results.
1,1,2-Trichloroethane	Based on the NITE GHS classification results.
Trichloroethylene	Based on the NITE GHS classification results.
trans-1,3-Dichloropropene	Based on the NITE GHS classification results.
1,2-Dichloroethane	Based on the NITE GHS classification results.
Tetrachloroethylene	Based on the NITE GHS classification results.
cis-1,2-Dichloroethylene	Based on the NITE GHS classification results.
trans-1,2-Dichloroethylene	Based on the NITE GHS classification results.
Carbon Tetrachloride	Based on the NITE GHS classification results.

**STOT-repeated exposure**

Chemical Name	STOT -repeated exposure- source information
Methanol	Based on the NITE GHS classification results.
Benzene	Based on the NITE GHS classification results.
1,1,1-Trichloroethane	Based on the NITE GHS classification results.
Vinyl chloride	Based on the NITE GHS classification results.
Dichloromethane	Based on the NITE GHS classification results.
1,1-Dichloroethylene	Based on the NITE GHS classification results.
1,1,2-Trichloroethane	Based on the NITE GHS classification results.
Trichloroethylene	Based on the NITE GHS classification results.
trans-1,3-Dichloropropene	Based on the NITE GHS classification results.
1,2-Dichloroethane	Based on the NITE GHS classification results.
Tetrachloroethylene	Based on the NITE GHS classification results.
cis-1,2-Dichloroethylene	Based on the NITE GHS classification results.
trans-1,2-Dichloroethylene	Based on the NITE GHS classification results.
Carbon Tetrachloride	Based on the NITE GHS classification results.

**Aspiration hazard**

Chemical Name	Aspiration Hazard source information
Methanol	Based on the NITE GHS classification results.
Benzene	Based on the NITE GHS classification results.
1,1,1-Trichloroethane	Based on the NITE GHS classification results.
Vinyl chloride	Based on the NITE GHS classification results.
Dichloromethane	Based on the NITE GHS classification results.
1,1-Dichloroethylene	Based on the NITE GHS classification results.
1,1,2-Trichloroethane	Based on the NITE GHS classification results.
Trichloroethylene	Based on the NITE GHS classification results.
1,2-Dichloroethane	Based on the NITE GHS classification results.
Tetrachloroethylene	Based on the NITE GHS classification results.
cis-1,2-Dichloroethylene	Based on the NITE GHS classification results.
trans-1,2-Dichloroethylene	Based on the NITE GHS classification results.
Carbon Tetrachloride	Based on the NITE GHS classification results.

## Section 12: ECOLOGICAL INFORMATION

**Ecotoxicity**

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Methanol	N/A	LC50 : <i>Lepomis macrochirus</i> 15400 mg/L 96 h	LC50 : <i>Artemia</i> 1340 mg/L 96 h
Benzene	EC50 : <i>Pseudokirchneriella subcapitata</i> 29 mg/L 72 h	LC50 : <i>Oncorhynchus mykiss</i> 5.3 mg/L 96 h EC50 : <i>Fathead mino</i> 0.8 mg/L 32 h	EC50 : <i>Daphnia magna</i> 8.76 - 15.6 mg/L 48 h
1,1,1-Trichloroethane	EbC50 : <i>Chlamydomonas</i>	N/A	N/A

	0.536 mg/L 72 h		
Vinyl chloride	EC50:Chilomonas paramecium 943 mg/L 48 h	LC50:Danio rerio 210 mg/L 96 h	N/A
Dichloromethane	N/A	N/A	EC50:Daphnia magna 27 mg/L 48 h
1,1-Dichloroethylene	EbC50 : Chlamydomonas reinhardi 9.12 mg/L 72 h EC10 : Scenedesmus quadricauda 240 mg/L 96 h	N/A	EC50 : Daphnia magna 11.6 mg/L 48 h
1,1,2-Trichloroethane	EC50:Pseudokirchneriella subcapitata 51.4 mg/L 72h	LC50:Pimephales promelas 81.6 mg/L 96 h	EC50:Daphnia magna 18 mg/L 48 h
Trichloroethylene	EC50:Pseudokirchneriella subcapitata 175 mg/L 96 h EC50:Desmodesmus subspicatus 450 mg/L 96 h	LC50 : Pimephales promelas 31.4 - 71.8 mg/L 96 h LC50 : Lepomis macrochirus 39 - 54 mg/L 96 h	EC50:Daphnia magna 2.2 mg/L 48 h
1,2-Dichloroethane	EC50:Desmodesmus subspicatus 166 mg/L 96 h static EC50:Pseudokirchneriella subcapitata 433 mg/L 96 h	LC50:Pimephales promelas 110 - 123 mg/L 96 h LC50:Lepomis macrochirus 230 - 710 mg/L 96 h LC50:Oncorhynchus mykiss 225 mg/L 96 h	LC50 : Artemia salina 12.8 mg/L 48 h
Tetrachloroethylene	EC50:Pseudokirchneriella subcapitata 500 mg/L 96 h	LC50:Lepomis macrochirus 11.0 - 15.0 mg/L 96 h LC50:Pimephales promelas 12.4 - 14.4 mg/L 96 h LC50:Oncorhynchus mykiss 4.73 - 5.27 mg/L 96 h LC50:Pimephales promelas 8.6 - 13.5 mg/L 96 h	EC50:Daphnia magna 6.1 - 9.0 mg/L 48 h
cis-1,2-Dichloroethylene	N/A	LC50 : Oryzias latipes 67.2 mg/L 96 h	EC50 : Daphnia magna 40.2mg/L 48 h
trans-1,2-Dichloroethylene	N/A	LC50:Lepomis macrochirus 135 mg/L 96 h	LC50: Daphnia magna 220 mg/L 48 h
Carbon Tetrachloride	ErC50 : Pseudokirchneriella subcapitata 0.46 mg/L 72 h	LC50 : Oryzias latipes 7.6 mg/L 96 h	EC50:Daphnia magna 28 mg/L 24 h EC50:Daphnia magna 29 mg/L 48 h

## Other data

Chemical Name	Short-term (acute) hazardous to the aquatic environment source information	Long-term (chronic) hazardous to the aquatic environment source information
Methanol	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
Benzene	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
1,1,1-Trichloroethane	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
Vinyl chloride	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
Dichloromethane	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
1,1-Dichloroethylene	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
1,1,2-Trichloroethane	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
Trichloroethylene	Based on the NITE GHS classification	Based on the NITE GHS classification

	results.	results.
1,2-Dichloroethane	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
Tetrachloroethylene	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
cis-1,2-Dichloroethylene	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
trans-1,2-Dichloroethylene	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
Carbon Tetrachloride	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

**Persistence and degradability** No information available  
**Bioaccumulative potential** No information available  
**Mobility in soil** No information available  
**Hazard to the ozone layer**

### Section 13: DISPOSAL CONSIDERATIONS

#### Waste from residues

Disposal should be in accordance with applicable regional, national and local laws and regulations.

#### Contaminated container and contaminated packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations.

### Section 14: TRANSPORT INFORMATION

#### ADR/RID

**UN number** UN1230  
**Proper shipping name:** Methanol  
**UN classification** 3  
**Subsidiary hazard class** 6.1  
**Packing group** II  
**Marine pollutant** Not applicable

#### IMDG

**UN number** UN1230  
**Proper shipping name:** Methanol  
**UN classification** 3  
**Subsidiary hazard class** 6.1  
**Packing group** II  
**Marine pollutant (Sea)** Not applicable  
**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** No information available

#### IATA

**UN number** UN1230  
**Proper shipping name:** Methanol  
**UN classification** 3  
**Subsidiary hazard class** 6.1  
**Packing group** II  
**Environmentally Hazardous Substance** Not applicable

### Section 15: REGULATORY INFORMATION

**Japanese regulations**

<b>Fire Service Act</b>	Category IV, alcohols, dangerous grade 2 water-soluble
<b>Poisonous and Deleterious Substances Control Law</b>	Deleterious Substances 2nd. Grade
<b>Industrial Safety and Health Act</b>	Harmful Substances Whose Names Are to be Indicated on the Label (Law Art.57) Notifiable Substances (Law Art.57-2) Class 2 Organic Solvents (Enforcement Order Attached Table No.6-2, Ordinance on Prevention of Organic Solvent Poisoning Art.1, Para.1, Item 5) Dangerous Substances - Flammable Substance (Enforcement Order Attached Table 1 Item 4) Working Environment Evaluation Standards, Administrative Control Levels (Law Art.65-2, Para.1) Substances designated by the Minister of Health, Labor and Welfare as carcinogenic(Ordinance on Industrial Safety and Health Art.577, Para.2) 【2024.4.1~】 Chemical Substances Hazardous to Skin, etc.(Regulations Article 594-2 Paragraph 1)
<b>Industrial Safety and Health Act (2024~)</b>	Class II Specified Chemical Substances (Law Art.2, Para.3, Enforcement Order Art.1-2)
<b>Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc</b>	Flammable Liquids (Ordinance Art.3, Ministry of Transportation Ordinance Regarding Transport by Ship and Storage, Attached Table 1)
<b>Regulations for the carriage and storage of dangerous goods in ship</b>	Flammable Liquids (Ordinance Art.194, MITL Notification for Air Transportation of Explosives etc., Attached Table 1)
<b>Civil Aeronautics Law</b>	Enforcement ordinance Appendix No. 1 Noxious liquid substance Category Y
<b>Marine Pollution Prevention Law</b>	Specified Class 1 No.
<b>Pollutant Release and Transfer Register Law (2023.4.1-)</b>	Specified Class 1-No. 94,400,281
<b>Export Trade Control Order</b>	Appendix 2 Export Approval Item
<b>Ozon protection act.(Japan)</b>	B-2 B-3
<b>Air Pollution Control Law</b>	Specified Substances, Designated Chemical Substances, Priority Chemical Substances
<b>Soil Contamination Control Law</b>	Designated Hazardous Substances

Chemical Name	Poisonous and Deleterious Substances Control Law	Industrial Safety and Health Act Substances (Law Art.57-2)	Pollutant Release and Transfer Register Law (2023.4.1-)
Methanol 67-56-1 ( 98.60 )	-	Applicable	-
Benzene 71-43-2 ( 0.10 )	-	Applicable	Applicable
1,1,1-Trichloroethane 71-55-6 ( 0.10 )	-	Applicable	-
Vinyl chloride 75-01-4 ( 0.10 )	-	Applicable	Applicable
Dichloromethane 75-09-2 ( 0.10 )	-	Applicable	-
1,1-Dichloroethylene 75-35-4 ( 0.10 )	-	Applicable	-
1,1,2-Trichloroethane 79-00-5 ( 0.10 )	-	Applicable	-
Trichloroethylene 79-01-6 ( 0.10 )	-	Applicable	Applicable
cis-1,3-Dichloropropene 10061-01-5 ( 0.10 )	Applicable	Applicable	-
trans-1,3-Dichloropropene 10061-02-6 ( 0.10 )	Applicable	Applicable	-
1,2-Dichloroethane 107-06-2 ( 0.10 )	-	Applicable	-
Tetrachloroethylene	-	Applicable	-

Chemical Name	Poisonous and Deleterious Substances Control Law	Industrial Safety and Health Act Substances (Law Art.57-2)	Pollutant Release and Transfer Register Law (2023.4.1-)
127-18-4 ( 0.10 )			
cis-1,2-Dichloroethylene 156-59-2 ( 0.10 )	-	Applicable	-
trans-1,2-Dichloroethylene 156-60-5 ( 0.10 )	-	Applicable	-
Carbon Tetrachloride 56-23-5 ( 0.10 )	Applicable	Applicable	-

## Section 16: OTHER INFORMATION

### Key literature references and sources for data etc.

NITE: National Institute of Technology and Evaluation (JAPAN)  
<http://www.safe.nite.go.jp/japan/db.html>  
 IATA dangerous Goods Regulations  
 RTECS:Registry of Toxic Effects of Chemical Substances  
 Japan Industrial Safety and Health Association GHS Model SDS  
 Dictionary of Synthetic Organic Chemistry , SSOCJ, Koudansha Scientific Co.Ltd.  
 Chemical Dictionary, Kyouritsu Publishing Co., Ltd.  
 etc

### Record of SDS revisions

The following contents were revised. Regulatory information.

### Disclaimer

This SDS is according to JIS Z 7253: 2019. The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

GHS Classification is according to JIS Z 7252:2019. \*JIS: Japanese Industrial Standards

**End of Safety Data Sheet**