

SAFETY DATA SHEET

SDS No.1021-58503

Date May 24, 2021

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1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : VOC22 Mixture in Methanol, each 2500ppm
NAME OF SUPPLIER : GL Sciences Inc.
ADDRESS : 22-1 Nishishinjuku 6-chome Shinjuku-ku Tokyo 163-1130, Japan
CHARGE SECTION : International Sales Section
TELEPHONE No. : +81-3-5323-6620
FACSIMILE No. : +81-3-5323-6621
PRODUCT No. : 1021-58503
SDS No. : 1021-58503
Research use only.

2. HAZARDS IDENTIFICATION

GHS CLASSIFICATION : Flammable liquid : Category 2
Acute toxicity - oral - : Category 4
Serious eye damage/eye irritation : Category 2A
Reproductive toxicity : Category 1B
Specific target organ toxicity (Single exposure) : Category 1(Central nervous system, optic organ, systemic toxicity)
: Category 3(anesthesia)
Specific target organ toxicity (Repeated exposure) : Category 1(Central nervous system, optic organ)
Hazardous to the aquatic environment - Acute hazard : Category 3
Hazardous to the aquatic environment - Chronic hazard : Category 3
Hazardous to the Ozone layer : Category 1

LABEL ELEMENTS

HAZARD SYMBOL



SIGNAL WORD : Danger

HAZARD STATEMENTS

H225 : Highly flammable liquid and vapor
H302 : Harmful if swallowed
H319 : Cause serious eye irritation
H350 : May cause cancer
H360 : May damage fertility or the unborn child
H370 : Cause damage to organs(Central nervous system, optic organ, systemic toxicity)
H336 : May cause drowsiness or dizziness
H372 : Cause damage to organs through prolonged or repeated exposure
H402 : Harmful to aquatic life
H412 : Harmful to aquatic life with long lasting effects
H420 : Harms public health and the environment by destroying ozone in the upper atmosphere

PRECAUTIONARY STATEMENTS

[Prevention]

P201 : Obtain special instructions before use.
P202 : Do not handle until all safety precautions have been read and understood.
P210 : Keep away from heat, hot surface, 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 equipment.
P242	Use non-sparking tools.
P243	Take action to prevent static discharges.
P260	Do not breathing dust/fume/gas/mist/vapours/spray.
P261	Avoid breathing dust/fume/gas/mist/vapour/spray.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
[Response]	
P301+P312	IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
P303+P361+P353	IF ON SKIN or hair: Take off immediately all contaminated clothing. Rinse skin with water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P311	IF exposed or concerned: Call a POISON CENTER or doctor.
P308+P313	IF exposed or concerned: Get medical attention.
P312	Call a POISON CENTER or doctor if you feel unwell.
P314	Get medical attention if you feel unwell.
P330	Rinse mouth.
P337+P313	If eye irritation persists: Get medical attention.
P370+P378	In case of fire: Use appropriate medias to extinguish.
[Storage]	
P403+P233+P235	Store in a well-ventilated place. Keep container tightly closed. Keep cool.
P405	Store locked up.
[Disposal]	
P501	Dispose of contents/container in accordance with all applicable regulations.

3. COMPOSITION / INFORMATION ON INGREDIENTS

SUBSTANCE / MIXTURE : Mixture

COMMON CHEMICAL NAME : VOC22 Mixture in Methanol, each 2500ppm

CHEMICAL IDENTITY	CONTENT	CHEMICAL FORMULA	CAS No.	TSCA INVENTORY	EINECS No.
Methanol	>94%	CH ₃ OH	67-56-1	Listed	200-659-6
1,1-Dichloroethylene	0.25 %	CCl ₂ =CH ₂	75-35-4	Listed	200-864-0
Dichloromethane	0.25 %	CH ₂ Cl ₂	75-09-2	Listed	200-838-9
trans-1,2-Dichloroethylene	0.25 %	CHCl=CHCl	156-60-5	Listed	205-860-2
cis-1,2-Dichloroethylene	0.25 %	CHCl=CHCl	156-59-2	Listed	205-859-7
Chloroform	0.25 %	CHCl ₃	67-66-3	Listed	200-663-8
1,1,1-Trichloroethane	0.25 %	CH ₃ CCl ₃	71-55-6	Listed	200-756-3
Tetrachloromethane	0.25 %	CCl ₄	56-23-5	Listed	200-262-8
1,2-Dichloroethane	0.25 %	CH ₂ ClCH ₂ Cl	107-06-2	Listed	203-458-1
Benzene	0.25 %	C ₆ H ₆	71-43-2	Listed	200-753-7
Trichloroethylene	0.25 %	CHCl=CCl ₂	79-01-6	Listed	201-167-4
1,2-Dichloropropane	0.25 %	CH ₃ CHClCH ₂ Cl	78-87-5	Listed	201-152-2
Bromodichloromethane	0.25 %	CHBrCl ₂	75-27-4	Listed	200-856-7
cis-1,3-Dichloropropene	0.25 %	ClCH ₂ CH=CHCl	10061-01-5	Not Listed	233-195-8
Toluene	0.25 %	C ₆ H ₅ CH ₃	108-88-3	Listed	203-625-9
trans-1,3-Dichloropropene	0.25 %	ClCH ₂ CH=CHCl	10061-02-6	Not Listed	—
1,1,2-Trichloroethane	0.25 %	ClCH ₂ CHCl ₂	79-00-5	Listed	201-166-9
Tetrachloroethylene	0.25 %	Cl ₂ C=CCl ₂	127-18-4	Listed	204-825-9
Dibromochloromethane	0.25 %	CHBr ₂ Cl	124-48-1	Listed	204-704-0
o-Xylene	0.25 %	C ₆ H ₄ (CH ₃) ₂	95-47-6	Listed	202-422-2
m-Xylene	0.25 %	C ₆ H ₄ (CH ₃) ₂	108-38-3	Listed	203-576-3
p-Xylene	0.25 %	C ₆ H ₄ (CH ₃) ₂	106-42-3	Listed	203-396-5
Bromoform	0.25 %	CHBr ₃	75-25-2	Listed	200-854-6
p-Dichlorobenzene	0.25 %	C ₆ H ₄ Cl ₂	106-46-7	Listed	203-400-5

4. FIRST AID MEASURES

- GENERAL ADVICE : Consult a physician. Show this safety data sheet to the doctor in attendance.
- INHALATION : Move victim to fresh air. If breathing is difficult, give oxygen.
If irritation persists, consult a physician.
- SKIN CONTACT : Remove contaminated clothes and shoes, rinse skin with plenty of water or shower. Use soap to help assure removal. Consult a physician immediately.
- EYE CONTACT : Flush eyes well with flooding large amounts of running water for at least 15 minutes. Assure adequate flushing by separating the eyelids with sterile fingers. If possible, remove any contact lenses. Consult a physician immediately.
- INGESTION : Rinse mouth, give plenty of water to dilute the substance. Do not induce vomiting. Never give anything by mouth to an unconscious person. Consult a physician immediately.
- GENERAL ADVICE : Wash off immediately with soap and plenty of water. In the case of respirable dust and/or fumes, use self-contained breathing apparatus and dust impervious protective suit. Use personal protective equipment.

5. FIRE FIGHTING MEASURES

- EXTINGUISHING MEDIA : Carbon dioxide, dry chemical powder, foam, water spray
- FIRE & EXPLOSION HAZARDS : Toxic, irritating, dust/fume/smoke may be emitted. Carbon monoxide may be foamed.
- SPECIAL PROTECTIVE EQUIPMENT
FOR FIRE FIGHTERS : Firemen should wear normal protective equipment(full bunker gear) and positive-pressure self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

- PERSONAL PRECAUTIONS : Remove ignition sources and ventilate the area. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid raising dust and avoid contact with skin and eyes.
- ENVIRONMENTAL PRECAUTIONS : Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
- METHODS FOR CLEAN UP : Do not touch spilled material without suitable protection. Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

- HANDLING : Keep away from ignition sources and ventilate the area –No smoking. In case of insufficient ventilation, wear suitable respiratory equipment.
Avoid contact with eyes, skin, and clothing. Avoid inhalation of vapour or mist. Avoid prolonged or repeated exposure. Handle this product with suitable protection.
- STORAGE : Store away from sunlight, heat and all ignition sources in well-ventilated dry place. Keep container tightly closed. Keep in freezer (-10°C).
- INCOMPATIBLE PRODUCTS : Strong oxidizers, acids

8. EXPOSURE CONTROL/PERSONAL PROTECTION

- ENGINEERING MEASURES : Use exhaust ventilation to keep airborne concentrations below exposure limits. Use adequate ventilation.
- VENTILATION : Local Exhaust ; Necessary, Mechanical(General) ; Necessary

CONTROL PARAMETERS

CHEMICAL NAME	ACGIH TLV-TWA	OSHA PEL-TWA	NIOSH REL
Methanol	200 ppm	200 ppm	200 ppm
1,1-Dichloroethylene	5 ppm	--	--
Dichloromethane	50 ppm	25 ppm	--
trans-1,2-Dichloroethylene	Not established	Not established	Not established
cis-1,2-Dichloroethylene	Not established	Not established	Not established
Chloroform	10 ppm	50 ppm	2 ppm
1,1,1-Trichloroethane	350 ppm	350 ppm	350 ppm
Tetrachloromethane	5 ppm	10 ppm	ST 2 ppm
1,2-Dichloroethane	10 ppm	50 ppm	1 ppm
Benzene	0.5 ppm	1 ppm	0.1 ppm
Trichloroethylene	10 ppm	100 ppm	--
1,2-Dichloropropane	10 ppm	75 ppm	--
Bromodichloromethane	Not established	Not established	Not established
cis-1,3-Dichloropropene	1 ppm	--	1 ppm
Toluene	50 ppm	200 ppm	100 ppm
trans-1,3-Dichloropropene	1 ppm	--	1 ppm
1,1,2-Trichloroethane	10 ppm	10 ppm	10 ppm
Tetrachloroethylene	25 ppm	100 ppm	--
Dibromochloroethane	Not established	Not established	Not established
o-Xylene	100 ppm	100 ppm	100 ppm
m-Xylene	100 ppm	100 ppm	100 ppm
p-Xylene	100 ppm	100 ppm	100 ppm
Bromoform	0.5 ppm	0.5 ppm	0.5 ppm
p-Dichlorobenzene	10 ppm	75 ppm	--

PERSONAL PROTECTION

- Respiratory protection : Use respirators approved under appropriate government standards and follow all regulations.
- HAND PROTECTION : Chemical resistant gloves
- EYE PROTECTION : Safety glasses(goggles)
- SKIN PROTECTION : Protective clothing

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	: Liquid
COLOUR	: Colorless, clear
ODOR	: Characteristic odor
MELTING POINT / FREEZING POINT	: -98 °C(Methanol)
BOILING POINT OR INITIAL BOILING POINT AND BOILING RANGE	: 64.7 °C(Methanol)
FLAMMABILITY	: Flammable
LOWER AND UPPER EXPLOSION LIMIT / FLAMMABILITY LIMIT	: 6.0 ~ 36.0 % (Methanol)
FLASH POINT	: 11 °C (TCC)(Methanol)
AUTO-IGNITION TEMPERATURE	: 464 °C(Methanol)
DECOMPOSITION TEMPERATURE	: No data available
pH	: No data available
KINEMATIC VISCOSITY	: Not applicable
SOLUBILITY	
Water	: Miscible
Organic solvent	: Miscible
PARTITION COEFFICIENT n-octanol/water (log value)	: log Pow: -0.82 / -0.66 (Methanol)
VAPOUR PRESSURE	: No data available
DENSITY AND/OR RELATIVE DENSITY	: 0.79 - 0.792 g/cm ³ (20 °C)(Methanol)
RELATIVE VAPOUR DENSITY	: 1.1(Methanol)
PARTICLE CHARACTERISTICS	: Not applicable

10. STABILITY AND REACTIVITY

REACTIVITY	: Stable under recommended storage conditions.
CHEMICAL STABILITY	: Reacts with strong oxidizers.
CONDITION TO AVOID	: Sunlight, heat, open flames, high temperature, sparks, static electrical charge, other ignition sources, moisture
INCOMPATIBLE MATERIALS	: Oxidizers and strong acids
HAZARDOUS DECOMPOSITION PRODUCTS	: CO, CO ₂ , Cyanohydrin, Hydrogen cyanide be formed.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY -oral-	: Since all known components are in the same classification category, it falls under category 4.
(Methanol)	: Acute toxicity of Methanol affects primates stronger than rodents(EHC 196,1997). rat; LD50=6200mg/kg, 9100mg/kg(EHC 196,1997).
ACUTE TOXICITY (Dermal)	: Since the toxicity unknown component is 0.1% or more, it cannot be classified.
(Methanol)	: rabbits: LD50 = 15800 mg/kg (DFGOT vol. 16 (2001)).
ACUTE TOXICITY (Inhalation: Vapors)	: Since the toxicity unknown component is 0.1% or more, it cannot be classified.
(Methanol)	: rat: LC50 > 22,500 ppm (4-hour equivalence: 31,500 ppm) (DFGOT vol. 16 (2001)).
ACUTE TOXICITY (Inhalation: Dusts and mists)	: Since the toxicity unknown component is 0.1% or more, it cannot be classified.
SKIN CORROSION/IRRITATION	: Cannot be classified due to lack of data.
EYE DAMAGE/EYE IRRITATION	: This mixture is classified in category 2.
(Methanol)	: Draize score; 2.1(average), 2.00(4hr), 0.50(72hr)(EHC 196,1997)
(Chloroform)	: Strongly irritating to rabbit. (EHC 163,1994)
RESPIRATORY SENSITIZATION	: No data available
SKIN SENSITIZATION	: No data available

GERM CELL MUTAGENICITY (1,2-Dichloroethane)	: No data available : Human Lymphocyte micronucleus test (CERI/NITE hazard assessment report No.3,2004)
CARCINOGENICITY (Benzene) (Trichloroethylene) (Tetrachloroethylene)	: This mixture is classified in category 1A. : K(NTP,2005), 1(IARC,1987), A1(ACGIH,2001), A(EPA,2000) : 2A(IARC), R(NTP,2005) : 2A(IARC vol.63,1995), R(NTP RoC,11th,2005)
REPRODUCTIVE TOXICITY (Methanol) (Trichloroethylene) (Toluene) (Tetrachloroethylene) (p-Xylene) (p-Dichlorobenzene)	: This mixture is classified in category 1B. : Methanol has a potential impact on human development(NTP-CHRHR Monograph,2003). : Effect to fetal behavioral changes (CERI/NITE hazard assessment report,2003). : Human: fetal alcohol syndrome(IARC 71,1999) : Detect from human breast milk and parents blood(IARC vol.63,1995). : Teratogenesis assay: Positive(CERI/NITE,2004) : Reproductive toxicity assay: Positive.(OECDTG416, EU-RARNo.48(2004))
SPECIFIC TARGET ORGAN TOXICITY-Single exposure (Methanol)	: This mixture is classified in category 1(Central nervous system, optic organ, systemic toxicity), category 3(anesthesia). : Central nervous system depression is seen as a symptom of acute poisoning in humans, and accumulation of formic acid in the blood leads to metabolic acidosis. It has been described as having symptoms such as visual impairment, blindness, headache, dizziness, nausea, vomiting, Kussmaul breathing, and Kussmaul coma, sometimes leading to death (DFGOT vol.16 (2001), EHC 196 (1997)). In addition, there is a description of central nervous system disorders, especially extrapyramidal system symptoms like tremor paralysis, and necrosis of the white matter of the brain has been reported as a morphological change (DFGOT vol.16 (2001)). Furthermore, as the target organ, the visual organ was adopted because the disorder to the eye is characteristic, and the systemic toxicity was adopted because the symptoms supporting metabolic acidosis include headache, nausea, vomiting, tachypnea, and coma. On the other hand, "anesthesia" was described in the findings of inhalation exposure in mice and rats (EHC 196 (1997), PATTY (5th, 2001)), and the findings regarding acute human intoxication also showed anesthesia due to suppression of the central nervous system. Is described as occurring (PATTY (5th, 2001)).
SPECIFIC TARGET ORGAN TOXICITY-Repeated exposure (Methanol)	: This mixture is classified in category 1((Central nervous system, optic organ) : A statement that the prominent symptom of long-term exposure to low-concentration methanol in humans was widespread eye damage (EHC 196 (1997)), a statement that insomnia was observed as a chronic toxicity effect of occupational methanol exposure, and it is described that headache, dizziness, insomnia, and gastric disorders appeared in chronic toxicity cases due to repeated exposure to methanol steam (ACGIH (7th, 2001)).
ASPIRATION TOXICITY	: No data available

12. ECOLOGICAL INFORMATION

HAZARDOUS TO THE AQUATIC ENVIRONMENT Short-term (acute) (Methanol)	: (M x 100 x category 1) + (10 x category 2) + category 3 is 146.75%, which is above the concentration limit (25%) and it is category 3. : Fish (Blue gill): 96hr, LC50=15,400 mg / L (EHC 196, 1998) : Crustacean (Brown shrimp): 96hr, LC50=1,340 mg / L (EHC 196,1998)
HAZARDOUS TO THE AQUATIC ENVIRONMENT Long-term (chronic) (Methanol)	: (M x 100 x category 1) + (10 x category 2) + category 3 is 161.75%, which is above the concentration limit (25%) and it is category 3. : This is "Not classified" in the Acute toxicity and is not poorly water-soluble (water-solubility = 1,000,000 mg / L (PHYSPROP Database, 2009).
BIODEGRADABILITY	: This mixture includes some non-rapidly degradable components.
BIOACCUMULATION POTENTIAL	: No data available
MOBILITY IN SOIL	: No data available
HAZARDOUS TO THE OZONE LAYER	: Some components which are included in this product is listed in Annex of the Montreal Protocol(1,1,1-Trichloroethane, Tetrachloromethane).

13. DISPOSAL INFORMATION

Dispose in a hazardous-waste site in accordance with all applicable regulations. Any disposal practice must be in compliance with country, local, state, and federal laws and regulations (contact country, local or state environment agency for specific rules).

14. TRANSPORT INFORMATION

International Regulations

Marine regulatory information : Comply the provisions of IMO.

UN Number : 1230

Proper Shipping Name : METHANOL

Class : 3

Sub Risk : 6.1

Packing Group : II

Marine Pollutant : Not applicable

Aviation regulatory information : Comply the provisions of ICAO/IATA.

UN Number : 1230

Proper Shipping Name : METHANOL

Class : 3

Sub Risk : 6.1

Packing Group : II

Emergency Response Guide Number : 131

15. REGULATORY INFORMATION

For classification and labeling of chemicals in accordance with the applicable rules and regulations in the EU or each country, refer to GHS classification of this product (See Section 2).

US REGULATION : OSHA HCS 2012/29 CFR 1910.1200

EU REGULATION : CLP Regulation ((EC) No. 1272/2008)

16. OTHER INFORMATION**NOTICE:**

The information contained in the SDS description is applicable exclusively to the chemical substance identified herein and for its intended use as an analytical reference standard or reagent and to the unit quantity intended for that purpose. The information does not relate to, and may not be appropriate for, any application or larger quantity of the substance described. Our products are intended for the use by individuals possessing sufficient technical skill and qualification on use the material potential hazardous chemical. Accordingly, no representation or warranty, express or implied, with respect to merchantability and fitness for a particular purpose is made with respect to the information contained herein.

Attention:

This product in terms of chemical identity and the unit amount provide is intended for use in chemical analysis and not for human consumption, nor any other purpose.