

SAFETY DATA SHEET

SDS No.1021-58023

Date

October 30, 2023

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1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : Mix standard, VOC 11 compounds, 1000ppm each in Ethanol
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. : 1021-58023
SDS No. : 1021-58023
Research use only.

2. HAZARDS IDENTIFICATION

GHS CLASSIFICATION : Flammable liquid : Category 2
Serious eye damage/eye irritation : Category 2
Carcinogenicity : Category 1A
Reproductive toxicity : Category 1A
Specific target organ toxicity (Single exposure) : Category 3(respiratory irritation, narcotic effects)
Specific target organ toxicity (Repeated exposure) : Category 1(Liver)
: Category 2(Central nervous system)

HAZARD SYMBOL :



SIGNAL WORD : Danger

HAZARD STATEMENTS :

H225 Highly flammable liquid and vapour
H317 May cause allergic skin reactions
H319 Cause serious eye irritation
H340 Risk of hereditary disease
H350 May cause cancer
H360 May damage fertility or the unborn child
H335 May cause respiratory irritation
H336 May cause drowsiness or dizziness
H372 Cause damage to organs through prolonged or repeated exposure Liver
H373 May cause damage to organs through prolonged or repeated exposure Central nervous system
H402 Harmful to aquatic life.

PRECAUTIONARY STATEMENTS :

[Prevention]

P201 Obtain special instructions before use.
P210 Keep away from heat/sparks/open flames/hot surfaces. –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 breathe fume/gas/mist/vapours.
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.
P272 Keep contaminated work clothing out of the work area.

P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
[Response]	
P302+P352	IF ON SKIN: Wash with plenty of water Wash with a large amount of water.
P303+P361+ P353	IF ON SKIN: Take off immediately all contaminated clothing. Rinse skin with water/shower.
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+P313	IF exposed or concerned: Get medical advice/attention.
P314	Get medical attention if you feel unwell.
P333+P313	IF SKIN IRRITATION ON RASH OCCURS: Seek medical attention/attention.
P337+P313	IF Eye IRRITATION PERSISTS: Get medical attention.
P362+P364	Take off contaminated clothing and wash it if it is to be reused.
P370+P378	IN CASE OF FIRE: Use appropriate media such as chemical powder or carbon dioxide 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

CHEMICAL IDENTITY : Mixture

CHEMICAL IDENTITY	CONTENT	CHEMICAL FORMULA	CAS No.	TSCA INVENTORY	EINECS No.	EC INDEX No.
Ethanol	98.9%	C ₂ H ₅ OH	64-17-5	Listed	200-578-6	603-002-00-5
Formaldehyde	0.1%	HCHO	50-00-0	Listed	200-001-8	605-001-00-5
Acetaldehyde	0.1%	CH ₃ CHO	75-07-0	Listed	200-836-8	605-003-00-6
Toluene	0.1%	C ₆ H ₅ CH ₃	108-88-3	Listed	203-625-9	601-021-00-3
Ethylbenzene	0.1%	C ₂ H ₅ C ₆ H ₅	100-41-4	Listed	202-849-4	601-023-00-4
o-Xylene	0.1%	C ₆ H ₄ (CH ₃) ₂	95-47-6	Listed	202-422-2	601-022-00-9
m-Xylene	0.1%	C ₆ H ₄ (CH ₃) ₂	108-38-3	Listed	203-576-3	601-022-00-9
p-Xylene	0.1%	C ₆ H ₄ (CH ₃) ₂	106-42-3	Listed	203-396-5	601-022-00-9
Styrene	0.1%	C ₆ H ₅ CH=CH ₂	100-42-5	Listed	202-851-5	601-026-00-0
n-Tetradecane	0.1%	CH ₃ (CH ₂) ₁₂ CH ₃	629-59-4	Listed	211-096-0	Not listed
Benzene	0.1%	C ₆ H ₆	71-43-2	Listed	200-753-7	601-020-00-8
p-Dichlorobenzene	0.1%	C ₆ H ₄ Cl ₂	106-46-7	Listed	200-400-5	602-035-00-2

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 : Water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- 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 cool(2 ~ 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
- 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
- CONTROL PARAMETERS

COMPONENTS	ACGIH	OSHA Final Limits	NIOSH REL
Ethanol	TWA= 1000 ppm	TWA= 1000 ppm	TWA= 1000 ppm
Formaldehyde	Ceiling 0.3 ppm	3 ppm	Not established
Acetaldehyde	25 ppm	Not established	
Toluene	50 ppm	TWA 200 ppm	TWA 100 ppm
Ethylbenzene	100 ppm	TWA 100 ppm	TWA 100 ppm
o-Xylene	100 ppm		
m-Xylene			
p-Xylene			
Styrene	20 ppm	TWA 100 ppm	TWA 50 ppm
n-Tetradecane	Not established		
Benzene	TWA 0.5ppm	8-h TWA 1ppm	10-h TWA 0.1ppm
p-Dichlorobenzene	TWA 10ppm	TWA 75ppm	Not established

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	: Liquid
COLOUR	: Colorless, clear
ODOR	: Characteristic odor
MELTING POINT / FREEZING POINT	: -117 °C(Ethanol)
BOILING POINT OR INITIAL BOILING POINT AND BOILING RANGE	: approx.78 °C(Ethanol)
FLAMMABILITY	: Flammable
LOWER AND UPPER EXPLOSION LIMIT / FLAMMABILITY LIMIT	: 3.3% (lower), 19 % (upper)(Ethanol)
FLASH POINT	: 12.8 °C (TCC) (Ethanol)
AUTOIGNITION TEMPERATURE	: 371 - 427 °C (Ethanol)
DECOMPOSITION TEMPERATURE	: No data available(Ethanol)
pH	: No data available
KINEMATIC VISCOSITY	: Not applicable
SOLUBILITY	
Water	: Miscible
Organic solvent	: Miscible
PARTITION COEFFICIENT n-octanol/water (log value)	: -0.32 (Ethanol)
VAPOR PRESSURE	: 5.33 kPa (at 20°C) (Ethanol)
DENSITY AND/OR RELATIVE DENSITY	: 0.81 g/cm ³ (at 20° C)(Ethanol)
RELATIVE VAPOUR DENSITY	: 1.6(Ethanol)
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 may be formed.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY	: oral, dermal, inhalation: Not classified
SKIN CORROSION/IRRITATION	: Not classified
EYE DAMAGE/EYE IRRITATION (Ethanol)	: 11 components (except n-Tetradecane) are classified in Category 2. Rat: moderate irritating(SIDS(2009),DFGOT Vol.12(1999)
RESPIRATORY SENSITIZATION	: This product was classified depend on Formaldehyde.
SKIN SENSITIZATION	: 2 component is classified in Category 1.
GERM CELL MUTAGENICITY	: This product was classified in Category 1B depending on Ethanol.
CARCINOGENICITY (Formaldehyde)	: This product was classified in Category 1 depending on Formaldehyde Benzene. IARC: Group 1(IARC,2005)
(Benzene)	: Category K by NTP (2005), Group 1 by IARC (1987), Category A1 by ACGIH (2001), and Category A by EPA (2000).
REPRODUCTIVE TOXICITY (Ethanol)	: 5 components are classified in Category 1A - 1B. Human: fetal alcohol syndrome(PATY(6th,2012))
(Toluene)	: Human: fetal alcohol syndrome(IARC 71,1999)

SPECIFIC TARGET ORGAN TOXICITY - single exposure -

- : This product was classified in Category 3 depending on Ethanol.
- (Ethanol) : Human: eye and respiratory tract irritation, induce a toxicity and death(PATY(6th, 2012)
- (Benzene) : Based on the human evidence including "irritation to the skin, nose, mouth and larynx; tracheitis, laryngitis, bronchitis, massive pulmonary hemorrhage" ((NICNAS (2001)), and the evidence from animal studies including "respiratory depression during anesthetization" (EHC 150 (1993)).

SPECIFIC TARGET ORGAN TOXICITY - repeated exposure -

- : This product was classified in Category 1 and 2 depending on Ethanol.
- (Ethanol) : Human: very harmful to all organ, especially liver.(DFGOT vol.12(1999),HSDB (Access on June 2013), SIDS(2005)m PATY(6th,2012))
- (Benzene) : Based on the human evidence including "bone marrow hypoplasia/hyperplasia, hypocytosis associated with normoblast," "blood toxicity," "fatal cases due to aplastic anemia" (EHC 150 (1993)), "transverse myelitis" (IRIS (2002)), "frequent headache, exhaustion, somniphathy, dysmnnesia," "a decrease in white/red blood cell counts, an increase in mean cell volume" (NICNAS (2001)), and the evidence from animal studies including "a decrease in lymphocyte/red blood cell counts," "abnormal configuration of circulating erythrocytes and leukocytes," "a decrease in splenic nucleated cells, circulating erythrocytes and lymphocytes; a decrease in white blood cell count," "a decrease in bone marrow cellularity and bone marrow pluripotent cells" (EHC 150 (1993)), "a decrease in red blood cell, white blood cell and lymphocyte counts, a decrease in hematocrit value, an increase in mean cell volume" (IRIS (2002)). The effects on experimental animals were observed at dosing levels within the guidance value ranges for Category 1.

12. ECOLOGICAL INFORMATION

HAZARDOUS TO THE AQUATIC ENVIRONMENT Short-term (acute)

- : This product was classified in Category 3.
- (Ethyl benzene) : Brown shrimp: LC50=0.4mg/L/96h(CERI·NITE,2006)
- (o-Xylene) : Selenastrum: LC50=0.8mg/L/72h

HAZARDOUS TO THE AQUATIC ENVIRONMENT Long-term (chronic)

: This mixture is not classified.

BIODEGRADABILITY : Acrolein: TOC=0%

BIOACCUMULATIVE POTENTIAL : No data available

MOBILITY IN SOIL : No data available

HAZARDOUS TO THE OZONE LAYER

: Not listed in Montreal Protocol list.

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 : 1170
- Proper Shipping Name : ETHANOL SOLUTION
- Class : 3, flammable liquid
- Packing Group : II
- Marine Pollutant : Not applicable
- Aviation regulatory information : Comply the previsions of ICAO/IATA.
- UN Number : 1170
- Proper Shipping Name : ETHANOL SOLUTION
- Class : 3, flammable liquid
- Packing Group : II

Regulations in Japan

Land regulatory information	: Not applicable
Marine regulatory information	: Comply the provisions of the Ship Safety Act..
UN Number	: 1170
Proper Shipping Name	: Ethanol solution
Class	: 3, flammable liquid
Packing Group	: II
Marine Pollutant	: Not applicable
Aviation regulatory information	: Comply the provisions of the Civil Aeronautics Act.
UN Number	: 1170
Proper Shipping Name	: Ethanol solution
Class	: 3, flammable liquid
Packing Group	: II
Emergency Response Guide Number	: 127

15. REGULATORY INFORMATION

US REGULATIONS	: Labeling according to EC Directives; See section 2
EU REGULATIONS	: Labeling according to EC Directives; See section 2

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.