

SAFETY DATA SHEET
According to OSHA Hazcom Standard 29 CFR 1910.1200
Benzene 1.5 µmol/mol and 6 others mix / Nitrogen

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1. IDENTIFICATION

A. Product name

- Benzene 1.5 µmol/mol and 6 others mix / Nitrogen

B. Recommended use and restriction on use

- General use : Not available
- Restriction on use : Not available

C. Manufacturer / Supplier / Distributor information

○ **Manufacturer information**

- Company name : RIGAS Co.,Ltd
- Address : 46,Munpyeongseo-ro 17 beon-gil, Daedeok-gu,Daejeon, KOREA
- Emergency telephone number : 82-42-934-6900

○ **Supplier/Distributor information**

- Company name : RIGAS Co.,Ltd
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2. HAZARD IDENTIFICATION

A. GHS Classification

- Gases under pressure : Compressed gas

B. GHS label elements

○ **Hazard symbols**



○ **Signal words**

- Warning

○ **Hazard statements**

- H280 Compressed gas ; Contains gas under pressure; may explode if heated

○ **Precautionary statements**

1) Prevention

- Not applicable

2) Response

- Not applicable

3) Storage

- P410+P403 Protect from sunlight. Store in a well-ventilated place.

4) Disposal

- Not applicable

C. Other hazards which do not result in classification

- Not available

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical Name | Trade names and Synonyms | CAS No. | Content(%) |
|-----------------------|---|-----------|------------|
| Nitrogen | Nitrogen, Elemental ; Diazyne ; Dinitrogen ; Diatomic nitrogen ; | 7727-37-9 | Balance |
| Methanol | Wood alcohol ; Methyl alcohol ; Monohydroxymethane ; Methyl hydroxide ; Methyl hydrate ; Methyl hydrid ; Wood naphtha ; | 67-56-1 | 1.5E-4 |
| Benzene | Benzol ; Benzole ; Bicarburet of hydrogen ; Coal naphtha ; Clohexatriene ; Phene ; Phenyl hydride ; Polystream ; Pyrobenzol ; Pyrobenzole ; Cyclohexatriene ; Benzine ; 1,3,5-Cyclohexatriene ; | 71-43-2 | 1.5E-4 |
| Vinyl chloride | Ethene, chloro- ; Chloroethylene ; Chloroethene ; Monochloroethylene ; Monochloroethene ; Ethylene, chloro- ; Ethylene monochloride ; Monovinyl chloride (MVC) ; Vinyl chloride monomer ; 1-Chloroethene ; 1-Chloroethylene ; | 75-01-4 | 1.5E-4 |
| Methylene chloride | Methylene chloride ; Methylene chloratum ; | 75-09-2 | 1.5E-4 |
| Ethylene trichloride | Ethene, trichloro- ; Trichloroethylene ; 1,1,2-Trichloroethylene ; 1,1-Dichloro-2-chloroethylene ; 1-Chloro-2,2-dichloroethylene ; Acetylene trichloride ; | 79-01-6 | 1.5E-4 |
| Styrene; Vinylbenzene | Ethenylbenzene ; phenylethylene ; Vinylbenzol ; Phenethylene ; Phenylethene ; Cinnamene | 100-42-5 | 1.5E-4 |
| Toluene | Methylbenzene ; Methylbenzol ; Phenyl methane ; Methacide ; Toluol ; 1-Methylbenzene | 108-88-3 | 1.5E-4 |

4. FIRST AID MEASURES

A. Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

B. Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Wash contaminated clothing thoroughly before re-using.

C. Inhalation contact

- Take specific treatment if needed.
- When exposed to large amounts of steam and mist, move to fresh air.

D. Ingestion contact

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

E. Delayed and immediate effects and also chronic effects from short and long term exposure

- Not available

F. Notes to physician

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

5. FIREFIGHTING MEASURES

A. Suitable (Unsuitable) extinguishing media

- Avoid use of water jet for extinguishing
- Dry chemical, carbon dioxide, regular foam extinguishing agent, spray

B. Specific hazards arising from the chemical

- Compressed gas ; Contains gas under pressure; may explode if heated

C. Special protective actions for firefighters

- Avoid inhalation of materials or combustion by-products.
- Cool containers with water until well after fire is out.
- Do not approach the tank surrounded by fire until it is extinguished.
- In case of conflagration, use automatic fire sprinkler. Major fire may require withdrawal, allowing the object itself to burn.
- Keep unauthorized personnel out.

6. ACCIDENTAL RELEASE MEASURES

A. Personal precautions, protective equipment and emergency procedures

- Do not touch spilled material. Stop leak if you can do it without risk.
- Handle the damaged containers or spilled material after wearing appropriate protective equipment
- Move container to safe area from the leak area.
- Must work against the wind, let the upwind people to evacuate.
- Remove all sources of ignition.

B. Environmental precautions

- If large amounts have been spilled, inform the relevant authorities.
- Prevent runoff and contact with waterways, drains or sewers.

C. Methods and materials for containment and cleaning up

- Appropriate container for disposal of spilled material collected.
- Disposal of waste shall be in compliance with the Wastes Control Act
- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notify the central and local government if the emission reach the standard threshold.

7. HANDLING AND STORAGE

A. Precautions for safe handling

- Avoid contact with incompatible materials.
- Avoid direct physical contact.
- Comply with all applicable laws and regulations for handling
- Dealing only with a well-ventilated place.
- Do not handle until all safety precautions have been read and understood.

B. Conditions for safe storage, including any incompatibilities

- Avoid direct sunlight.
- Check regularly for leaks.
- Do not apply any physical shock to container.
- Do not apply direct heat.
- Do not use damaged containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

A. Exposure limits

- ACGIH TLV
 - [Nitrogen] : Asphyxia
 - [Methanol] : TWA, 200 ppm (262 mg/m³) STEL, 250 ppm (328 mg/m³) Skin
 - [Benzene] : TWA, 0.5 ppm (1.6 mg/m³) STEL, 2.5 ppm (8 mg/m³)
 - [Vinyl chloride] : TWA 1 ppm (2.6 mg/m³)
 - [Methylene chloride] : TWA, 50 ppm (174 mg/m³)
 - [Ethylene trichloride] : TWA 10 ppm (54 mg/m³) STEL 25 ppm (135 mg/m³)
 - [Styrene; Vinylbenzene] : TWA 10 ppm, STEL 20 ppm
 - [Toluene] : TWA 20 ppm (75 mg/m³)
- OSHA PEL
 - [Methanol] : 260
 - [Ethylene trichloride] : 100 ppm, C 200 ppm
 - [Styrene; Vinylbenzene] : 100 ppm, C 200 ppm
 - [Toluene] : 200 ppm, C 300 ppm

B. Engineering controls

- Business owner is recommended to maintain below recommended exposure limits for the working place with general exhaust of gas/vapour/mist/fume.

C. Individual protection measures, such as personal protective equipment

- Respiratory protection
 - Consider warning properties before use.
 - Respiratory protection is ranked in order from minimum to maximum.

- **Eye protection**
 - Provide an emergency eye wash station and quick drench shower in the immediate work area.
 - Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- **Hand protection**
 - Wear appropriate chemical resistant glove.
- **Skin protection**
 - Wear appropriate chemical resistant protective clothing.
- **Others**
 - Not available

9. PHYSICAL AND CHEMICAL PROPERTIES

| A. Appearance | C₆H₆ |
|---|-----------------------------------|
| - Appearance | Liquid |
| - Color | Colorless - yellow |
| B. Odor | Peculiar smell |
| C. Odor threshold | 4.68 ppm |
| D. pH | Not available |
| E. Melting point/Freezing point | 5.5 °C |
| F. Initial Boiling Point/Boiling Ranges | 80.1 °C |
| G. Flash point | Not available |
| H. Evaporation rate | Not available |
| I. Flammability(solid, gas) | Not available |
| J. Upper/Lower Flammability or explosive limits | 7.8 / 1.2 % |
| K. Vapour pressure | 94.8 mmHg (25°C) |
| L. Solubility | 0.18 g/100mℓ (25°C) |
| M. Vapour density | 2.8 (air=1) |
| N. Specific gravity | 0.88 (water=1) |
| O. Partition coefficient of n-octanol/water | 2.13 |
| P. Autoignition temperature | 498 °C |
| Q. Decomposition temperature | Not available |
| R. Viscosity | 0.604 cP (25°C) |
| S. Molecular weight | 78.11 |

| A. Appearance | Ethyl benzene |
|---|---------------------------|
| - Appearance | Liquid |
| - Color | Colorless |
| B. Odor | Aromatic |
| C. Odor threshold | 2 mg/m ³ (Air) |
| D. pH | Not available |
| E. Melting point/Freezing point | -95 °C |
| F. Initial Boiling Point/Boiling Ranges | 136 °C |
| G. Flash point | 18 °C |
| H. Evaporation rate | Not available |
| I. Flammability(solid, gas) | Not available |
| J. Upper/Lower Flammability or explosive limits | 6.7 / 1 % |
| K. Vapour pressure | 0.9 kPa (20°C) |
| L. Solubility | 0.015 g/100mℓ (20 °C) |
| M. Vapour density | 3.7 |
| N. Specific gravity | 0.9 |
| O. Partition coefficient of n-octanol/water | 3.2 |
| P. Autoignition temperature | 432 °C |
| Q. Decomposition temperature | Not available |
| R. Viscosity | 0.64 cP (25°C) |
| S. Molecular weight | 106.17 |

| A. Appearance | C₇H₈ |
|---------------|-----------------------------------|
| - Appearance | Liquid |

| | |
|---|-------------------------|
| - Color | Colorless (transparent) |
| B. Odor | Benzene odor |
| C. Odor threshold | 2.14 ppm |
| D. pH | Not available |
| E. Melting point/Freezing point | -95 °C |
| F. Initial Boiling Point/Boiling Ranges | 111 °C |
| G. Flash point | 4 °C (c.c.) |
| H. Evaporation rate | Not available |
| I. Flammability(solid, gas) | Not available |
| J. Upper/Lower Flammability or explosive limits | 7.1 / 1.1 % |
| K. Vapour pressure | 28.4 mmHg (25°C) |
| L. Solubility | 0.0526 g/100ml (25 °C) |
| M. Vapour density | 3.1 (air = 1) |
| N. Specific gravity | 0.8636 |
| O. Partition coefficient of n-octanol/water | 2.73 |
| P. Autoignition temperature | 480 °C |
| Q. Decomposition temperature | Not available |
| R. Viscosity | 0.56 cP (25 °C) |
| S. Molecular weight | 92.14 |

| | |
|---|-----------------------|
| A. Appearance | o-Xylene |
| - Appearance | Etc. |
| - Color | Not available |
| B. Odor | Sweet smell |
| C. Odor threshold | (<1 ppm) |
| D. pH | Not available |
| E. Melting point/Freezing point | -25 °C |
| F. Initial Boiling Point/Boiling Ranges | 144 °C |
| G. Flash point | 32 °C |
| H. Evaporation rate | 0.7 (butyl acetate=1) |
| I. Flammability(solid, gas) | Not available |
| J. Upper/Lower Flammability or explosive limits | 6.7 / 0.9 % |
| K. Vapour pressure | 0.7 kPa (20°C) |
| L. Solubility | 0.0178 g/100ml (25°C) |
| M. Vapour density | 3.7 |
| N. Specific gravity | 0.88 |
| O. Partition coefficient of n-octanol/water | 3.12 |
| P. Autoignition temperature | 463 °C |
| Q. Decomposition temperature | Not available |
| R. Viscosity | Not available |
| S. Molecular weight | 106.2 |

| | |
|---|-----------------------|
| A. Appearance | p-Xylene |
| - Appearance | Liquid |
| - Color | Not available |
| B. Odor | Sweet smell |
| C. Odor threshold | Not available |
| D. pH | Not available |
| E. Melting point/Freezing point | 13 °C |
| F. Initial Boiling Point/Boiling Ranges | 138 °C |
| G. Flash point | 27 °C |
| H. Evaporation rate | 0.7 (butyl acetate=1) |
| I. Flammability(solid, gas) | Not available |
| J. Upper/Lower Flammability or explosive limits | 7 / 1.1 % |
| K. Vapour pressure | 405.033 mmHg (20°C) |
| L. Solubility | 0.016 g/100ml (25°C) |
| M. Vapour density | 3.7 |
| N. Specific gravity | 0.86 |

| | |
|---|-----------------------|
| O. Partition coefficient of n-octanol/water | 3.15 |
| P. Autoignition temperature | 528 °C |
| Q. Decomposition temperature | Not available |
| R. Viscosity | Not available |
| S. Molecular weight | Not available |
| | |
| A. Appearance | m-Xylene |
| - Appearance | Not available |
| - Color | Not available |
| B. Odor | Sweet smell |
| C. Odor threshold | Not available |
| D. pH | Not available |
| E. Melting point/Freezing point | -48 °C |
| F. Initial Boiling Point/Boiling Ranges | 139 °C |
| G. Flash point | 27 °C (c.c.) |
| H. Evaporation rate | 0.7 (butyl acetate=1) |
| I. Flammability(solid, gas) | Not available |
| J. Upper/Lower Flammability or explosive limits | 7 / 1.1% |
| K. Vapour pressure | 397.533 mmHg (20 °C) |
| L. Solubility | 0.016 g/100mℓ (25 °C) |
| M. Vapour density | 3.7 |
| N. Specific gravity | 0.86 |
| O. Partition coefficient of n-octanol/water | 3.2 |
| P. Autoignition temperature | 527 °C |
| Q. Decomposition temperature | Not available |
| R. Viscosity | Not available |
| S. Molecular weight | Not available |

| | |
|---|---|
| A. Appearance | N₂ |
| - Appearance | gas |
| - Color | Colorless |
| B. Odor | odorless |
| C. Odor threshold | Not available |
| D. pH | Not available |
| E. Melting point/Freezing point | -210 °C |
| F. Initial Boiling Point/Boiling Ranges | -196 °C |
| G. Flash point | Not available |
| H. Evaporation rate | Not available |
| I. Flammability(solid, gas) | Not available |
| J. Upper/Lower Flammability or explosive limits | Not available |
| K. Vapour pressure | 1 atm (77.347 deg K) |
| L. Solubility | (1.18E+004mg/L(25°C)) |
| M. Vapour density | 0.97 ((air = 1)) |
| N. Specific gravity | 0.808 (kg / l at the boiling point of the liquid) |
| O. Partition coefficient of n-octanol/water | 0.67 |
| P. Autoignition temperature | Not available |
| Q. Decomposition temperature | Not available |
| R. Viscosity | Not available |
| S. Molecular weight | 28 |

10. STABILITY AND REACTIVITY

A. Chemical Stability

- high-pressure gas; May explode when heated.

B. Possibility of hazardous reactions

- Contact with other combustible material may cause fire.

C. Conditions to avoid

- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces
- Avoid contact with incompatible materials and condition.
- Avoid contact with heat, sparks, flame or other ignition sources.

D. Incompatible materials

- Not available

E. Hazardous decomposition products

- May emit flammable vapour if involved in fire.

11. TOXICOLOGICAL INFORMATION

A. Information on the likely routes of exposure

- **Respiratory tracts**
 - Not available
- **Oral**
 - Not available
- **Eye/Skin**
 - Not available

B. Delayed and immediate effects and also chronic effects from short and long term exposure

- **Acute toxicity**
 - * **Oral**
 - Product (ATEmix) : Not available
 - [Methanol] : LD50 50~300 mg/kg Rat (NIER)
 - [Benzene] : LD50 >2000 mg/kg Rat (OECD TG 401)
 - [Vinyl chloride] : LD50 > 4000 mg/kg Rat (ECHA)
 - [Methylene chloride] : LD50 >2000 mg/kg Rat (ECHA)
 - [Ethylene trichloride] : LD50 >5620 mg/kg Rat (NIER)
 - [Styrene; Vinylbenzene] : LD50 ca. 5000 mg/kg Rat (ECHA)
 - [Toluene] : LD50 5580 mg/kg Rat (EU Method B.1) (ECHA)
 - * **Dermal**
 - Product (ATEmix) : Not available
 - [Methanol] : LD50 200~1000 mg/kg (NIER)
 - [Benzene] : LD50 > 8260 mg/kg Rabbit (LD50 >9400 mg/kg Guinea pig, Rabbit (OECD TG 402, ECHA)
 - [Methylene chloride] : LD50 >2000 mg/kg Rat (ECHA)
 - [Ethylene trichloride] : LD50 >20,000 mg/kg Guinea pig (ECHA)
 - [Styrene; Vinylbenzene] : LD50 >2000 mg/kg Rat (OECD TG 402, GLP) (ECHA)
 - [Toluene] : LD50 >5000 mg/kg Rabbit (ECHA)
 - * **Inhalation**
 - Product (ATEmix) : Not available
 - [Methanol] : 蒸气 LC50 2 ~ 10 mg/L/4hr (NIER)
 - [Benzene] : Vapor LC50 43.8 mg/ℓ 4 hr Rat (OECD TG 403, ECHA)
 - [Vinyl chloride] : Gas LC50 107971 ppm/4hr (390 mg/L 2h) Rat (NIER)
 - [Methylene chloride] : LC50 64.82 mg/ℓ/4hr(49 mg/ℓ/7hr) Mouse (ECHA)
 - [Ethylene trichloride] : LC50 26 mg/ℓ 4 hr Rat
 - [Styrene; Vinylbenzene] : Vapour LC50 11.8 mg/L 4 hr Rat (ECHA)
 - [Toluene] : Vapor LC50 28.1 mg/L 4 hr Rat (OECD TG 403) (ECHA)
- **Skin corrosion/irritation**
 - Not available
- **Serious eye damage/irritation**
 - Not available
- **Respiratory sensitization**
 - Not available
- **Skin sensitization**
 - Not available
- **Carcinogenicity**
 - * **IARC**
 - [Benzene] : Group 1

- [Vinyl chloride] : Group 1
- [Methylene chloride] : Group 2A
- [Ethylene trichloride] : Group 1
- [Styrene; Vinylbenzene] : Group 2A
- [Toluene] : Group 3
- * **OSHA**
 - [Vinyl chloride] : Applicable
 - [Methylene chloride] : Applicable
- * **ACGIH**
 - [Benzene] : A1
 - [Vinyl chloride] : A1
 - [Methylene chloride] : A3
 - [Ethylene trichloride] : A2
 - [Styrene; Vinylbenzene] : A3
 - [Toluene] : A4
- * **NTP**
 - [Benzene] : K
 - [Vinyl chloride] : K
 - [Methylene chloride] : R
 - [Ethylene trichloride] : R
 - [Styrene; Vinylbenzene] : R
- * **EU CLP**
 - [Methylene chloride] : Carc.2
 - [Ethylene trichloride] : Carc. 1B
- **Germ cell mutagenicity**
 - Not available
- **Reproductive toxicity**
 - Not available
- **STOT-single exposure**
 - Not available
- **STOT-repeated exposure**
 - Not available
- **Aspiration hazard**
 - Not available

12. ECOLOGICAL INFORMATION

A. Ecotoxicity

- **Fish**
 - [Methanol] : LC50 15400 mg/l 96 hr Bluegill (NITE: EHC 196, 1998)
 - [Benzene] : LC50 5.3 mg/l 96 hr Rainbow Trout (NITE: EU-RAR, 2003, ECHA)
 - [Vinyl chloride] : LC50 210 mg/l 96 hr Brachydanio rerio (GLP) (IUCLID)
 - [Methylene chloride] : LC50 5.2 mg/l 72 hr Other (EHC 164 (1996))
 - [Ethylene trichloride] : LC50 38 mg/l 96 hr, NOEC(21d) 2.7 mg/L O. latipes (NIER)
 - [Styrene; Vinylbenzene] : LC50 10 mg/L 96 hr Pimephales promelas (OECD TG 201, GLP) (ECHA)
 - [Toluene] : LC50 5.5 mg/l 96 hr Oncorhynchus kistutch (ECHA)
- **Crustaceans**
 - [Methanol] : LC50 1340 mg/L Brown shrimp (NITE: EHC 196, 1998)
 - [Benzene] : EC50 10 mg/l 48 hr Daphnia magna (EC50=20.6ppm, 48h NIER OECD TG 202, ECHA)
 - [Vinyl chloride] : LC50 80.7 mg/l 24 hr Daphnia magna (EHC215, 1999)
 - [Methylene chloride] : LC50 27 mg/l 48 hr Daphnia magna (ECHA)
 - [Ethylene trichloride] : EC50 11 mg/l 48 hr, NOErC(21d) 2.1 mg/L Daphnia magna (NIER)
 - [Styrene; Vinylbenzene] : EC50 4.7 mg/L 48 hr Daphnia magna (OECD TG 202, GLP) (ECHA)
 - [Toluene] : EC50 3.78mg/L 48hr (ECHA)
- **Algae**
 - [Methanol] : ECHA EC50 22000 mg/l 96 hr Selenastrum capricornutum(OECD TG 201)
 - [Benzene] : EC50 29 mg/l 72 hr Selenastrum capricornutum (NITE), Selenastrum capricornutum, EC50=32 mg/L 72h, (ECHA)
 - [Vinyl chloride] : EC50 118 mg/l 96 hr (SIDS UNEP)
 - [Methylene chloride] : ErC50>100mg/L(P. subcapitata)(NIER)

- [Ethylene trichloride] : EC50 36.5 mg/ℓ 72 hr C. reinhardtii (NIER)
- [Styrene; Vinylbenzene] : EC50 4.9 mg/L 72 hr Raphidocelis subcapitata (EPA OTS 797.1050, GLP)
- [Toluene] : NOEC 0.74 mg/L Ceriodaphnia dubia 7d (ECHA)

B. Persistence and degradability

○ Persistence

- [Nitrogen] : log Kow 0.67 (NLM/HSDB)
- [Methanol] : log Kow -0.77
- [Benzene] : log Kow 2.13 (HSDB,ChemIDplus,IPCS)
- [Vinyl chloride] : log Kow 1.58 (IUCLID)
- [Methylene chloride] : log Kow 1.25
- [Ethylene trichloride] : log Kow 2.53 (NIER)
- [Styrene; Vinylbenzene] : log Kow 2.95 log Kow (OECD TG 107)(ECHA)
- [Toluene] : log Kow 2.73 (20 °C) (ECHA)

○ Degradability

- [Benzene] : degradable in the non-oxygen condition (NITE)

C. Bioaccumulative potential

○ Bioaccumulative potential

- [Benzene] : 5.88 ~ 43.2 (30 fresh water, green algae, 3.5 conger, 4.3 gold fish, EPA)
- [Vinyl chloride] : BCF 5.471
- [Methylene chloride] : BCF 2~40 (HSDB)
- [Ethylene trichloride] : BCF 17 (IUCLID)
- [Styrene; Vinylbenzene] : BCF 74 (ECHA)
- [Toluene] : BCF 90 (ECHA)

○ Biodegradation

- [Benzene] : 50 % 28 day (degradable in the non-oxygen condition (NITE))
- [Vinyl chloride] : 30 (%) 40 day (After 108 days 99% Biodegradation) (SIDS SIAP)
- [Methylene chloride] : 68 % 28 day (ECHA)
- [Ethylene trichloride] : 19(%) 28 day (ECHA)
- [Styrene; Vinylbenzene] : 100 % 28 d, Readily biodegradable (ISO DIS 9408, GLP) (ECHA)
- [Toluene] : 69 % 5 day (Readily biodegradable) (ECHA)

D. Mobility in soil

- [Benzene] : 134.1 Koc (Estimate)
- [Styrene; Vinylbenzene] : Koc 352 (ECHA)

E. Other adverse effects

- [Methanol] : Fish: 28d-NOEC Pimephales promelas=446.7 mg/L QSAR Crustacean: 21d-NOECDaphnia magna=208 mg/L QSAR
- [Benzene] : Fish, Pimephales promelas: NOEC=0.8mg/L 32d, Crustaceans, Ceriodaphnia dubia: NOEC=3mg/L 7d, Algae, Selenastrum capricornutum. NOEC : 34mg/L 72h (ECHA)
- [Methylene chloride] : Fish Pimephales promelas : LC50 8d = 471 mg/L, NOEC 28d = 83 mg/L ASTM E729 - 80 (ECHA)

13. DISPOSAL CONSIDERATIONS

A. Disposal methods

- It shall be treated by incineration
- Oil water separation technology shall be applied as pre-waste treatment if it is applicable
- Stabilization and minimization treatment by incineration or similar method can be applied, if more than two kinds of designated wastes are in mixture state and it is impractical to separate them

B. Special precautions for disposal

- Anyone with business license number who generates industrial wastes shall treat the waste by him/herself or by entrusting to the legal entities who treat the wastes, recycle the wastes of others or install and operate the waste treatment facilities according to the Wastes Control Act
- Dispose of waste in accordance with all applicable laws and regulations.

14. TRANSPORT INFORMATION

A. UN No. (IMDG)

- 1956

B. Proper shipping name

- COMPRESSED GAS, N.O.S.

C. Hazard Class

- 2.2

D. IMDG CODE/IATA DGR Packing group

- Not applicable

E. Marine pollutant

- Not applicable

F. Special precautions for user related to transport or transportation measures

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE : F-C (Non-flammable gases)
- EmS SPILLAGE SCHEDULE : S-V (Gases (non-flammable, non-toxic))

15. REGULATORY INFORMATION**A. National and/or international regulatory information**

- o **POPs Management Law**

- [Nitrogen] : Not applicable
- [Methanol] : Not applicable
- [Benzene] : Not applicable
- [Vinyl chloride] : Not applicable
- [Methylene chloride] : Not applicable
- [Ethylene trichloride] : Not applicable
- [Styrene; Vinylbenzene] : Not applicable
- [Toluene] : Not applicable

- o **Information of EU Classification**

- * **Classification**

- [Methanol] : H225,H301,H311,H331,H370
- [Benzene] : H225,H304,H315,H319,H340,H350,H372
- [Vinyl chloride] : H220,H280,H350
- [Methylene chloride] : H351
- [Ethylene trichloride] : H315,H319,H336,H341,H350,H412
- [Styrene; Vinylbenzene] : H226,H315,H319,H332,H361,H372
- [Toluene] : H225,H304,H315,H336,H361,H373

- o **U.S. Federal regulations**

- * **OSHA PROCESS SAFETY (29CFR1910.119)**

- Not applicable

- * **CERCLA Section 103 (40CFR302.4)**

- [Methanol] : 2267.995 kg 5000 lb
- [Benzene] : 4.53599 kg 10 lb
- [Vinyl chloride] : 0.453599 kg 1 lb
- [Methylene chloride] : 453.599 kg 1000 lb
- [Ethylene trichloride] : 45.3599 kg 100 lb
- [Styrene; Vinylbenzene] : 453.599 kg 1000 lb
- [Toluene] : 453.599 kg 1000 lb

- * **EPCRA Section 302 (40CFR355.30)**

- Not applicable

- * **EPCRA Section 304 (40CFR355.40)**

- Not applicable

- * **EPCRA Section 313 (40CFR372.65)**

- [Methanol] : Applicable
- [Benzene] : Applicable
- [Vinyl chloride] : Applicable

- [Methylene chloride] : Applicable
- [Ethylene trichloride] : Applicable
- [Styrene; Vinylbenzene] : Applicable
- [Toluene] : Applicable
- **Rotterdam Convention listed ingredients**
 - Not applicable
- **Stockholm Convention listed ingredients**
 - Not applicable
- **Montreal Protocol listed ingredients**
 - Not applicable

16. OTHER INFORMATION

A. Reference

- The information contained herein is believed to be accurate. It is provided independently of any sale of the product for purpose of hazard communication. It is not intended to constitute performance information concerning the product. No express warranty, or implied warranty of merchantability or fitness for a particular purpose is made with respect to the product or the information contained herein.
- This Safety Data Sheet was compiled with data and information from the following sources: KOSHA, NITE, ESIS, NLM, SIDS, IPCS

B. Issue date

- 2022-08-30

C. Revision number and Last date revised

- 3 times, 2020-01-16

D. Other

- This SDS is prepared according to the Globally Harmonized System (GHS).