Samchun Chemicals

# Material Safety Data Sheet

# 2-Ethoxyethanol

## Section 1 – PRODUCT AND COMPANY IDENTIFICATION

**1. Product Identifier** 2-Ethoxyethanol; Ethylene glycol ethyl ether

**2. Recommended Use & Uses advised against** Uses for Laboratory and R&D only

**3. Information of Supplier**

SAMCHUN PURE CHEMICAL CO.,LTD
ADDRESS; (Mogok-dong) 117, Sandan-ro 16Beon-gil, Pyeongtaek-si, Gyeonggi-do, Korea
Emergency Phone; 82-31-668-0700/3
Department; Safety & Environment dep.
Web site; http://www.samchun.com

## Section 2 – HAZARDS and DANGER IDENTIFICATION

**1.GHS Classification· Identification**

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|---|---|
| Flammable liquid | Category3 |
| Acute toxic(Inhalation) | Category4 |
| Skin Corrosion/Skin Irritation | Category2 |
| Serious Eye Damage/Eye Irritation | Category2 |
| Reproductive toxic | Category1B |
| Specific Target Organ Toxicity (Single Exposure) | Category1 |
| Specific Target Organ Toxicity (Repeated Exposure) | Category1 |

**2. Label and Mark including Precautionary Statement**

◦**Label elements**

◦**Signal word** Danger

◦**Hazard · Danger statement**

H226 Flammable liquid and vapour
H332 Harmful if inhaled
H315 Causes skin irritation
H319 Causes serious eye irritation
H360 May damage fertility or the unborn child
H370 Causes damage to organs (CNS, Kidney, liver)
H372 Causes damage to organs (Testicular) through prolonged or repeated exposure

◦**Precautionary statement**

**Precaution**

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P280 Wear protective gloves/protective clothing/eye protection/face protection
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P271 Use only outdoors or in a well-ventilated area.

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| **Precaution** | P264 Wash thoroughly after handling. |
| **Precaution** | P201 Obtain special instructions before use<br>P202 Do not handle until all safety precautions have been read and understood.<br>P260 Do not breathe dust/fume/gas/mist/vapours/spray.<br>P270 Do not eat, drink or smoke when using this product. |
| **Measures** | P303+P361+P353 SKIN (or hair) all contaminated clothing IF ON Take off. Rinse skin with water / shower.<br>P370+P378 In case of fire: Use (Section 5. explosions, according to the fire-fighting extinguishing agent suitable method) for extinction<br>P312 Call a POISON CENTER or doctor/physician if you feel unwell.<br>P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.<br>P321 Specific treatment (see Seciton 4. on this label).<br>P302+P352 IF ON SKIN: Wash with plenty of water<br>P332+P313 If skin irritation occurs: Get medical advice/attention.<br>P362+P364 Take off contaminated clothing and wash before reuse<br>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing<br>P337+P313 If eye irritation persists: Get medical advice/attention.<br>P308+P313 IF exposed: Call a POISON CENTER or doctor/physician<br>P308+P311 If exposed or concerns, call a poison center or physician<br>P314 Get medical advice/attention if you feel unwell. |
| **Storage** | P403+P235 Store in a well-ventilated place. Keep cool.<br>P405 Store locked up |
| **Dispose** | P501 Dispose of contents/container under related law and regulations |

**3. Other Hazard-Risk which are not included in the classification criteria**

NFPA index(0~4steps) : Health=1, Fire=2, Reaction=0

By the flow of a substance or mixture that also can cause static electricity

## Section 3 – COMPOSITION AND INFORMATION ON INGREDIENTS

| Chemical Name | Other Name | CAS No. | Content (%) |
|---|---|---|---|
| 2-Ethoxyethanol | Ethylene glycol ethyl ether | 110-80-5 | 100 |

## Section 4 – FIRST AID MEASURES

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| **1. Eye Contact** | Rinse with plenty of water for at least 15minutes and get medical attention immediately. |
| **2. Skin Contact** | Take off contaminated cloths and shoes immediately, wash with plenty of water and soap for at least 15minutes. |
| **3. Inhalation** | Move victim to fresh air. If breathing is difficult, give artificial respiration and get medical attention immediately. |
| **4. Ingestion** | Do not induce vomiting. Get medical advice/attention immediately. |
| **5. Immediate medical attention and Notes for physician** | Keep the medical personnel aware of the materials involved and take protective action. |

## Section 5 – FIRE-FIGHT MEASURES

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| **1. Suitable extinguish media** | Alcohol-resistant foam, carbon dioxide, powdered extinguishing media, water<br>Inappropriate extinguishing media: N/A |
| **2. Special hazards arising from the substance** | Thermal decomposition products: Carbon oxides<br>Fire and Explosion Hazards: mid-level fire hazard.<br>Vapor / air mixtures are explosive above flash point.<br>Vapors are heavier than air.<br>Vapors or gases may ignite at distant ignition sources and spread rapidly. |

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| **3. Special protective equipment and Precautions for fire-fighters** | Move containers from fire area if you can do it without risk. When extinguishing a fire, be sure to wear personal protective equipment.<br>If it is not possible to extinguish the fire, withdraw immediately. Keep containers cool by spraying with water for a long time, even after the fire is out. Isolate hazardous areas and deny access to people. |

## Section 6 – ACCIDENTIAL RELEASE MEASURES

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| **1.Personal precautions and Emergency procedures** | Do not touch spilled material. Avoid inhalation and skin contact. In case of confined space, wear air respirator and ventilate and remove all sources of ignition. |
| **2. Environmental precautions** | Minimize leak/spill, collect and keep leak/spill in container |
| **3. Methods and material for containment and cleaning up** | Soak up with sand, clay and other inert absorbent material |

## Section 7 – HANDING AND STORAGE

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| **1. Precautions for safe Handling** | Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. All containers should be grounded. |
| **2. Conditions for safe storage** | Keep container tightly closed in a dry, cool and well-ventilated place.<br>Keep away from incompatible materials. |

## Section 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

**1.Occupational exposure limit, biological exposure limit**
**National law of Safety management of**
Occupational Health and Safety Act
TWA : 5 ppm , 19 mg/m3

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| **2. Appropriate Engineering controls** | Ensure compliance with applicable exposure limits and operate local exhaust ventilation when working.<br>If the substance is at risk of explosion, ventilation equipment should be explosion-resistant. |

**3. Personal protective equipment**

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| ◦**Respiratory protection** | Because it is concerned about the harmfulness of human body due to chemical substances, it is recommended to wear respiratory protective equipment with canister mask or gas filter in consideration of physical and chemical characteristics when handling.<br>Respiratory protection should be certified by the Health and Safety Authority.<br>It is concerned about the harmfulness of the human body depending on the working environment, it should wear respirator, air-purifying respirator |
| ◦**Eye-protection** | Wear safety glasses when handling as they may cause human health hazards due to chemicals. Install eye wash facilities and emergency eyewash stations near chemical handling sites |
| ◦**Hand protection** | Wear safety gloves when handling, as it is likely to harm human health due to chemicals |
| ◦**Skin and body proticion** | Wear chemical protective clothing when handling, as it is likely to harm human health due to chemicals |

## Section 9 – PHYSICAL AND CHEMICAL PROPERTIES

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|---|---|---|---|
| **1.Physical state and color** | Liquid(Colorless and transparent) | **2.Odor** | Odorless |
| **3.threshold** | N/A | **4. pH** | N/A |
| **5.Melting/Freezing point** | -100℃ | **6.Boiling point/range** | 135.1℃ |
| **7. Flashing point** | 43℃ | **8. Evaporation speed** | N/A |
| **9. Flammability(solid,gas)** | N/A | **10. Flash or Explosion limit upper / lower** | 16% / 2% |
| **11. Vapor pressure** | 3.8mmHg@20℃ | **12. Solubility** | Soluble |
| **13. Vapor density** | 0.925 ~ 0.935 | **14.Gravity** | 0.93 |

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|---|---|---|---|
| **15. n-octanol-water Partition coefficient** | -0.54 | **16. Self ignition temp(℃)** | 236℃ |
| **17. Cracking temp(℃)** | N/A | **18. Viscosity** | 2.08mPa.s@20℃ |
| **19. Molecular Weight** | 90.12 | | |

## Section 10 – STABILITY AND REACTIVITY

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| **1.Chemical stability and Possibility of Hazardous Reactions** | Stable under normal temp. and pressure<br>Not polymerize |
| **2. Conditions to Avoid** | Avoid heat, sparks, flames, static electricity and other sources of ignition.<br>Containers may rupture or explode if exposed to heat. |
| **3. Incompatible Materials** | Metals, bases, oxidants, peroxides |
| **4. Hazardous Decomposition Products** | Thermal decomposition products: Carbon oxides |

## Section 11 – TOXICOLOGICAL INFORMAION

**1. Information on the likely routes of exposure.**

N/A

**2. Health hazard information**

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| ◦**Acute toxic** | Oral : LD50 2125mg/kg Rat<br>Skin : LD50 3300mg/kg Rabbit<br>Inhalation : LC50 16mg/l 4hr Rat |
| ◦**Serious skin corrosive / irritation** | Skin irritation test results in rabbits: Weak irritation |
| ◦**Serious eye damage / irritation** | Eye irritation test results in rabbits: Weak irritation |
| ◦**Respiratory sensitization** | N/A |
| ◦**Skin sensitization** | N/A |
| ◦ **Carcinogenicity** | N/A |
| ◦ **Germ cell Mutagenicity** | Micronucleus test result : negative |
| ◦ **Reproductive toxic** | EU REACH Regulation(2006) : Class 2 |
| ◦**Specific target organ toxicity (single exposure )** | In people, dizziness, loss of consciousness, stiffness, and seizures, central nervous system disorders, metabolic acidification, renal failure, hepatic injury, and nervous breakdown symptoms.<br>Atrophy of testis in experimental animals |
| ◦**Specific target organ toxicity (repeated exposure )** | Decreased number of sperm in humans, anemia, granulocytopenia |
| ◦**Aspiration hazard** | N/A |

## Section 12 – ECOLOGICAL INFORMATION

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| **1.Acquatic and Terrestrial eco toxicity** | Fish toxicity : N/A<br>Invertebrate toxicity : LC50 90mg/l 48hr Water Flea<br>Sea algae : N/A |
| **2.Persistence and degradability** | Persistence : N/A<br>Degradability : N/A |
| **3.Bioaccumulative potential** | Concentrations : N/A<br>Bioaccumulative : N/A |
| **4.Mobility in soil** | N/A |
| **5.Other adverse effects** | N/A |

## Section 13 – Disposable considerations

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| **1.Waste methods** | Dispose in accordance with local regulations. |

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| **2.Waste warning** | Dispose prohibited substances and waste separately from others. |

## Section 14 – TRANSPORT INFORMATION

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| **1. UN No.** | 1171 |
| **2.Proper shipping Name** | Ethylene glycol monoethyl ether |
| **3.Hazard class** | 3 |
| **4.Packing group** | Ⅲ |
| **5.Marine pollutnat** | N/A |
| **6.Particular safety Measures for transportation** | Fire emergency : F-E<br>Emergency measures RELEASE : S-D |

## Section 15 – REGULATARY INFORMATION

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| **1.Occupation safety and health acts** | Specially Controlled Substances<br>Standard material of exposure<br>Test material of working environment<br>(Test period; 6months)<br>Special diagnosis material of health<br>(Diagnosis period; 12months) |
| **2. Chemical Substances Control Act** | Toxicity |
| **3. National law of Safety management of hazardous material** | 4 Class 2 Petroleum(Water-soluble liquid) 2000L |
| **4.National law of management of Wastes** | Designated Waste |
| **5.Other domestic and foreign law** | EU classification information (confirmed classification result): R10Repr.Cat.2; R60-61Xn; R20 / 21/22<br>EU classification information (Risk phrases): R60, R61, R10, R20 / 21/22<br>EU classification information (Safety phrases): S53, S45 |

## Section 16 – OTHER INFORMATION

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| **1. Material source** | A chemical information MSDS Safety and Health Agency<br>National Institute of Environmental Research Chemical Information Systems<br>Korea Industrial Technology National Fire Hazardous Materials Information System |
| **1. The 1st edition** | 2002.07.30 |
| **2. Revision and The final revision** | 9 / 2019.01.03 |

**. Other references**

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