

Safety Data Sheet

Material Name: Glycol Ether

SDS ID: 820215

*** Section 1 - Identification ***

Product Identifier

Glycol Ether

Synonyms

Not available

Recommended Use

Industrial applications. If this product is used in combination with other products, refer to the Safety Data Sheets for those products.

Restrictions on Use

None known.

Manufacturer Information

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*** Section 2 - Hazard(s) Identification ***

Classification in Accordance with 29 CFR 1910.1200.

Flammable Liquids, Category 4

Acute Toxicity (Oral), Category 4 (~50% unknown)

Serious Eye Damage/Eye Irritation, Category 2B

Toxic to Reproduction, Category 1B

Specific Target Organ Toxicity - Single Exposure, Category 3 (central nervous system and respiratory tract)

GHS LABEL ELEMENTS

Symbol(s)



Signal Word

DANGER!

Hazard Statement(s)

Combustible liquid

Harmful if swallowed

Causes eye irritation

May damage fertility or the unborn child

May cause respiratory irritation

May cause drowsiness and dizziness

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Precautionary Statement(s)

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, sparks, open flame, and hot surfaces - No smoking. Avoid breathing vapor or mist. Use only outdoors or in a well-ventilated area. Do not eat, drink, or smoke when using this product. Wear protective gloves/clothing and eye/face protection. Wash thoroughly after handling.

Response

In case of fire, use media appropriate for extinction. IF exposed or concerned: Get medical advice/attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. 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 SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.

Storage

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

Disposal

Dispose of in accordance with all applicable federal, state and local regulations.

Hazard(s) Not Otherwise Classified

None known.

*** Section 3 - Composition / Information on Ingredients ***

| CAS | Component | Percent |
|------------|-------------------------------------|---------|
| 111-90-0 | Diethylene glycol monoethyl ether | 45-55 |
| 34590-94-8 | Dipropylene glycol monomethyl ether | 40-50 |
| 110-80-5 | Ethylene glycol ethyl ether | 1-3 |

*** Section 4 - First Aid Measures ***

Description of Necessary Measures

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention.

Eyes

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.

Ingestion

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.

Most Important Symptoms/Effects

Acute

Eye irritation, respiratory tract irritation, central nervous system depression.

Delayed

Reproductive effects.

Indication of Immediate Medical Attention and Special Treatment Needed, If Needed

Treat symptomatically and supportively. Call 1-800-468-1760 for additional information.

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*** Section 5 - Fire-Fighting Measures ***

Suitable Extinguishing Media

Carbon dioxide, regular dry chemical, water spray, alcohol resistant foam.

Unsuitable Extinguishing Media

Do not use high-pressure water streams.

Specific Hazards Arising from the Chemical

Combustible liquid and vapor. Avoid friction, static electricity, and sparks.

Hazardous Combustion Products

Oxides of carbon.

Special Protective Equipment and Precautions for Firefighters

Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

Fire Fighting Measures

Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Apply water from a protected location or from a safe distance. Dike for later disposal.

*** Section 6 - Accidental Release Measures ***

Personal Precautions, Protective Equipment and Emergency Procedures

Wear personal protective clothing and equipment, see Section 8. Avoid release to the environment.

Methods and Materials for Containment and Clean Up

Remove all ignition sources. Do not touch or walk through spilled material. Stop leak if possible without personal risk. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Ventilate area and avoid breathing vapor or mist. Contain spill as a liquid for possible recovery, or sorb with compatible sorbent material and shovel with a clean tool into a sealable container for disposal. Additionally, for large spills: Dike far ahead of liquid spill for collection and later disposal.

*** Section 7 - Handling and Storage ***

Precautions for Safe Handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, sparks, open flame, and hot surfaces - No smoking. Avoid breathing vapor or mist. Use only outdoors or in a well-ventilated area. Do not eat, drink, or smoke when using this product. Wear protective gloves/clothing and eye/face protection. Wash thoroughly after handling.

Conditions for Safe Storage, Including Any Incompatibilities

Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up. See Section 14 for packing group information.

Incompatibilities

Metals, bases, oxidizing materials, peroxides, combustible materials.

*** Section 8 - Exposure Controls / Personal Protection ***

Component Exposure Limits

| | |
|-------------------------------------|---|
| Dipropylene glycol monomethyl ether | 34590-94-8 |
| ACGIH: | 100 ppm TWA; 150 ppm STEL; Skin - potential significant contribution to overall exposure by the cutaneous route |

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| | |
|------------------------------------|---|
| NIOSH: | 100 ppm TWA ; 600 mg/m3 TWA; 150 ppm STEL ; 900 mg/m3 STEL; Potential for dermal absorption; 600 ppm IDLH |
| OSHA (US): | 100 ppm TWA ; 600 mg/m3 TWA; prevent or reduce skin absorption |
| Ethylene Glycol Ethyl Ether | 110-80-5 |
| ACGIH: | 5 ppm TWA; Skin - potential significant contribution to overall exposure by the cutaneous route |
| NIOSH: | 0.5 ppm TWA ; 1.8 mg/m3 TWA; SK: SYS (Apr 2011); 500 ppm IDLH |
| OSHA (US): | 200 ppm TWA ; 740 mg/m3 TWA; prevent or reduce skin absorption |

ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)

Ethylene Glycol Ethyl Ether (110-80-5)

100 mg/g creatinine Medium: urine Time: end of shift at end of workweek Parameter: 2-Ethoxyacetic acid

Engineering Controls

Provide general ventilation needed to maintain concentration of vapor or mist below applicable exposure limits. Where adequate general ventilation is unavailable, use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below applicable exposure limits. Where explosive mixtures may be present, equipment safe for such locations should be used.

Individual Protection Measures, such as Personal Protective Equipment

Eye/face protection

Wear safety glasses. Additional protection like goggles, face shields, or respirators may be needed dependent upon anticipated use and concentrations of mists or vapors. Eye wash fountain and emergency showers are recommended. Contact lens use is not recommended.

Respiratory Protection

Use NIOSH-certified P- or R- series particulate filter and organic vapor cartridges when concentration of vapor or mist exceeds applicable exposure limits. Protection provided by air purifying respirators is limited. Do not use N-rated respirators. Selection and use of respiratory protective equipment should be in accordance in the USA with OSHA General Industry Standard 29 CFR 1910.134; or in Canada with CSA Standard Z94.4.

Glove Recommendations

Where skin contact is likely, wear gloves impervious to product; use of natural rubber (latex) or equivalent gloves is not recommended. To avoid prolonged or repeated contact where spills and splashes are likely, wear appropriate chemical-resistant face shield, boots, apron, whole body suits or other protective clothing.

Protective Materials

Personal protective equipment should be selected based upon the conditions under which this material is used. A hazard assessment of the work area for PPE requirements should be conducted by a qualified professional pursuant to regulatory requirements. The following PPE should be considered the minimum required: Gloves, Safety glasses, and Lab coat or apron.

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*** Section 9 - Physical & Chemical Properties ***

| | | | |
|-----------------------------------|----------------------------|-----------------------------------|----------------|
| Appearance/Odor : | Clear, liquid, glycol odor | pH: | 5.49 |
| Odor: | Glycol odor | Odor Threshold: | Not available |
| Boiling Point: | Not available | Melting Point: | Not available |
| Solubility (H2O): | Not available | Specific Gravity: | Not available |
| Density: | Not available | Octanol/H2O Coeff.: | Not available |
| Evaporation Rate: | Not available | Auto Ignition Temperature: | Not available |
| LFL: | Not available | Flash Point: | 176°F (80°C) |
| UFL: | Not available | Viscosity: | Not available |
| Vapor Pressure: | Not available | Vapor Density: | Not available |
| Decomposition Temperature: | Not available | Flammability (solid, gas): | Not applicable |

Other Property Information

No additional information is available.

*** Section 10 - Stability & Reactivity ***

Reactivity

No reactivity hazard is expected.

Chemical Stability

Stable at normal temperatures and pressure.

Possibility of Hazardous Reactions

Will not polymerize.

Conditions To Avoid

Avoid heat, sparks, flames, and other sources of ignition Avoid contact with incompatible materials.

Incompatible Materials

Metals, bases, oxidizing materials, peroxides, combustible materials

Hazardous Decomposition Products

Oxides of carbon

*** Section 11 - Toxicological Information ***

Information on Likely Routes of Exposure

Inhalation

May cause respiratory tract irritation, central nervous system depression, Reproductive Effects.

Skin Contact

May cause skin irritation.

Eye Contact

Causes eye irritation.

Ingestion

Harmful if swallowed.

Acute and Chronic Toxicity

Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and the following selected endpoints are published:

Diethylene glycol monoethyl ether (111-90-0)

Oral LD50 Rat 10502 mg/kg; Dermal LD50 Rabbit 9143 mg/kg; Inhalation LC50 Rat >5240 mg/m3 4 h (no deaths occurred)

Dipropylene glycol monomethyl ether (34590-94-8)

Oral LD50 Rat 5.35 g/kg; Dermal LD50 Rabbit 9500 mg/kg

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Ethylene Glycol Ethyl Ether (110-80-5)

Oral LD50 Rat 2800 mg/kg; Dermal LD50 Rabbit 3300 mg/kg; Inhalation LC50 Rat 4267 ppm 4 h

Product Toxicity Data

Acute Toxicity Estimate

No data available.

Immediate Effects

Causes eye irritation, respiratory tract irritation, central nervous system depression.

Delayed Effects

Reproductive Effects.

Irritation/Corrosivity Data

Causes eye irritation, respiratory tract irritation.

Respiratory Sensitization

No information available for the product.

Dermal Sensitization

No information available for the product.

Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, NTP, DFG or OSHA.

Germ Cell Mutagenicity

Based on best current information, there is no known mutagenicity associated with this product.

Tumorigenic Data

Based on best current information, there is no known teratogenicity associated with this product.

Reproductive Toxicity

Available data characterizes components of this product as reproductive hazards.

Specific Target Organ Toxicity - Single Exposure

Central nervous system, respiratory system.

Specific Target Organ Toxicity - Repeated Exposure

No target organs identified.

Aspiration hazard

No information available for the product.

Medical Conditions Aggravated by Exposure

May cause damage to the blood system, kidney disorders, liver disorders, respiratory disorders, skin disorders and allergies.

Additional Data

No additional information is available.

*** Section 12 - Ecological Information ***

Component Analysis - Aquatic Toxicity

| | |
|-------------------------------------|--|
| Diethylene glycol monoethyl ether | 111-90-0 |
| Fish: | LC50 96 h Lepomis macrochirus 10000 mg/L [static]; LC50 96 h Lepomis macrochirus 19100 - 23900 mg/L [flow-through]; LC50 96 h Oncorhynchus mykiss 11400 - 15700 mg/L [flow-through]; LC50 96 h Pimephales promelas 11600 - 16700 mg/L [flow-through] |
| Invertebrate: | EC50 48 h Daphnia magna 3940 - 4670 mg/L IUCLID |
| Dipropylene glycol monomethyl ether | 34590-94-8 |
| Fish: | LC50 96 h Pimephales promelas >10000 mg/L [static] |

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| | |
|--------------------------------|--|
| Invertebrate: | LC50 48 h Daphnia magna 1919 mg/L IUCLID |
| Ethylene Glycol Ethyl Ether | 110-80-5 |
| Fish: | LC50 96 h Lepomis macrochirus >10000 mg/L [static]; LC50 96 h Pimephales promelas >0.1 mg/L [static] |
| Algae: | EC50 72 h Desmodesmus subspicatus >1000 mg/L IUCLID |
| Invertebrate: | EC50 48 h Daphnia magna >10000 mg/L IUCLID |

Persistence and Degradability

No information available for the product.

Bioaccumulative Potential

No information available for the product.

Mobility

No information available for the product.

Other Toxicity

No additional information is available.

*** Section 13 - Disposal Considerations ***

Disposal Methods

Dispose in accordance with all applicable federal, state and local regulations. Regulations may also apply to empty containers. The responsibility for proper waste disposal lies with the owner of the waste. Contact Safety-Kleen regarding proper recycling or disposal.

Non-hazardous. Based on available data, this information applies to the product as supplied to the user. Processing, use, or contamination by the user may change the waste code applicable to the disposal of this product.

*** Section 14 - Transport Information ***

US DOT Information:

Shipping Name: COMBUSTIBLE LIQUID, N.O.S., (Contains: Ethylene Glycol Ethyl Ether , Dipropylene glycol monomethyl ether)

Hazard Class: Combustible liquid

UN/NA #: NA1993

Packing Group: III

Required Label(s): Combustible liquid

IATA Information: Not regulated for transport.

IMDG Information: Not regulated for transport.

TDG Information: Not regulated for transport.

UN#: Not regulated as dangerous goods.

International Bulk Chemical Code

This material does not contain any chemicals required by the IBC Code to be identified as dangerous chemicals in bulk.

*** Section 15 - Regulatory Information ***

U.S. Federal Regulations

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

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|-----------------------------|--|
| Ethylene Glycol Ethyl Ether | 110-80-5 |
| SARA 313: | 1 % de minimis concentration |
| CERCLA: | 1000 lb final RQ ; 454 kg final RQ |
| TSCA 12b: | Section 5 , 1 % de minimis concentration |

SARA Section 311/312 (40 CFR 370 Subparts B and C) reporting categories

Flammable; Acute toxicity; Reproductive Toxicity; Serious Eye Damage/Eye Irritation; Specific Target Organ Toxicity

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

| Component | CAS | CA | MA | MN | NJ | PA |
|-------------------------------------|------------|-----|-----|-----|-----|-----|
| Diethylene glycol monoethyl ether | 111-90-0 | No | No | Yes | No | No |
| Dipropylene glycol monomethyl ether | 34590-94-8 | Yes | Yes | Yes | Yes | Yes |
| Ethylene Glycol Ethyl Ether | 110-80-5 | Yes | Yes | Yes | Yes | Yes |

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)

WARNING! This product can expose you to chemicals including Ethylene Glycol Ethyl Ether, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

| | |
|-----------------------------|-------------------------------------|
| Ethylene Glycol Ethyl Ether | 110-80-5 |
| Repro/Dev. Tox | developmental toxicity , 1/1/1989 |
| | male reproductive toxicity , 1/1/89 |

Component Analysis - Inventory

Diethylene glycol monoethyl ether (111-90-0)

| | | | | | | | | |
|----------------|-----|-----|-----|-----|-----------|-----------|-------------------|-------------------|
| US | CA | AU | CN | EU | JP - ENCS | JP - ISHL | KR KECI - Annex 1 | KR KECI - Annex 2 |
| Yes | DSL | Yes | Yes | EIN | Yes | Yes | Yes | No |
| KR - REACH CCA | | MX | NZ | PH | TH-TECI | TW | VN (Draft) | |
| No | | Yes | Yes | Yes | Yes | Yes | Yes | |

Dipropylene glycol monomethyl ether (34590-94-8)

| | | | | | | | | |
|----------------|-----|-----|-----|-----|-----------|-----------|-------------------|-------------------|
| US | CA | AU | CN | EU | JP - ENCS | JP - ISHL | KR KECI - Annex 1 | KR KECI - Annex 2 |
| Yes | DSL | Yes | Yes | EIN | Yes | Yes | Yes | No |
| KR - REACH CCA | | MX | NZ | PH | TH-TECI | TW | VN (Draft) | |
| No | | Yes | Yes | Yes | Yes | Yes | Yes | |

Ethylene Glycol Ethyl Ether (110-80-5)

| | | | | | | | | |
|----|----|----|----|----|-----------|-----------|-------------------|-------------------|
| US | CA | AU | CN | EU | JP - ENCS | JP - ISHL | KR KECI - Annex 1 | KR KECI - Annex 2 |
|----|----|----|----|----|-----------|-----------|-------------------|-------------------|

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| | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Yes | DSL | Yes | Yes | EIN | Yes | Yes | Yes | No |
|-----|-----|-----|-----|-----|-----|-----|-----|----|

| | | | | | | |
|----------------|-----|-----|-----|---------|-----|------------|
| KR - REACH CCA | MX | NZ | PH | TH-TECI | TW | VN (Draft) |
| Yes | Yes | Yes | Yes | Yes | Yes | Yes |

*** Section 16 - Other Information ***

NFPA Ratings: Health: 2 Fire: 1 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Summary of Changes:

Regulatory review and update.

Key/Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CA/MA/MN/NJ/PA - California/Massachusetts/Minnesota/New Jersey/Pennsylvania*; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CFR - Code of Federal Regulations (US); CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EC - European Commission; EEC - European Economic Community; EIN - European Inventory of (Existing Commercial Chemical Substances); EINECS - European Inventory of Existing Commercial Chemical Substances; ENCS - Japan Existing and New Chemical Substance Inventory; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; F - Background (for Venezuela Biological Exposure Indices); IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; ISHL - Japan Industrial Safety and Health Law; IUCLID - International Uniform Chemical Information Database; JP - Japan; Kow - Octanol/water partition coefficient; KR KECI Annex 1 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL); KR KECI Annex 2 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL) , KR - Korea; LD50/LC50 - Lethal Dose/ Lethal Concentration; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; MX - Mexico; Ne- Non-specific; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; Nq - Non-quantitative; NSL - Non-Domestic Substance List (Canada); NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PEL- Permissible Exposure Limit; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH- Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; Sc - Semi-quantitative; STEL - Short-term Exposure Limit; TCCA - Korea Toxic Chemicals Control Act; TDG - Transportation of Dangerous Goods; TLV - Threshold Limit Value; TSCA - Toxic Substances Control Act; TW - Taiwan; TWA - Time Weighted Average; UEL - Upper Explosive Limit; UN/NA - United Nations /North American; US - United States; VLE - Exposure Limit Value (Mexico); VN (Draft) - Vietnam (Draft); WHMIS - Workplace Hazardous Materials Information System (Canada).

Other Information

Disclaimer:

User assumes all risks incident to the use of this product. To the best of our knowledge, the information contained herein is accurate. However, Safety-Kleen assumes no liability whatsoever for the accuracy or completeness of the information contained herein. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or of any other nature are made hereunder with respect to the information or the product to which the information refers. The data contained on this sheet apply to the product as supplied to the user.