Pure Ingredients
Cosmetics • Personal care • Natural health

DIETHYLENE GLYCOL MONOETHYL ETHER – SAFETY DATA SHEET

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

PRODUCT IDENTIFIER

Product name	Diethylene glycol monoethyl ether
Synonyms	Diethylene Glycol Monoethyl Ether; DGEE, 2-(2-ethoxyethoxy) ethanol, Reed Diffuser Base

DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Registered distributor company name	Pure Ingredients Ltd
Address	626A Rosebank Road, Avondale, Auckland 1026 New Zealand
Telephone	+649 8135619
Website	www.pureingredients.co.nz
Email	compliance@pureingredients.co.nz

EMERGENCY TELEPHONE NUMBER

CHEMCALL	0800 CHEMCALL / 800 243 622 (24hr)
Emergency telephone numbers	111
Others	NZ Poisons Centre 0800 POISON (0800 764 766)

SECTION 2 HAZARDS IDENTIFICATION

HSNO Classifications:
Classified as a Hazardous Substance according to the criteria of the New Zealand Hazardous Substances and New Organisms Legislation.

Hazard Labelling **DANGER**	
HSNO Classification Hazard Statements	3.1D, 6.8A, 6.3B, 6.4A Combustible liquid. May damage fertility. May damage the unborn child. May cause respiratory irritation. May cause drowsiness or dizziness.
Precautionary Statements	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Use only outdoors or in a well-ventilated area. Do not breathe dust/ fume/ gas/ mist/ vapors/ spray. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS No	EC No	Weight %
Ethanol, 2-(2-ethoxyethoxy)-	111-90-0	203-919-7	>= 99.0
2-ethoxyethanol	110-80-5	203-804-1	< 0.4
Ethane-1,2-diol	107-21-1	203-473-3	< 0.2

SECTION 4 FIRST AID MEASURES

NZ Poisons Centre 0800 POISON (0800 764 766) | NZ Emergency Services: 111

General Advice	Take proper precautions to ensure your own health and safety before attempting rescue and providing first aid. For specific information refer to the Emergency Overview in Section 2 of this MSDS.
Skin	Immediately remove excess chemical and contaminated clothing; thoroughly wash contaminated skin with mild soap and water. If irritation persists after washing, seek medical attention. Thoroughly clean contaminated clothing before reuse; discard contaminated leather goods (gloves, shoes, belts, wallets, etc.).
Inhalation	If symptoms are experienced, move victim to fresh air. Seek medical attention if discomfort persists.
Eyes	Thoroughly flush the eyes with large amounts of clean low-pressure water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation persists, seek medical attention.
Ingestion	If product is ingested, do not induce vomiting and contact a physician or Poison Control Centre.
Notes to Physician	Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient. Treatment of metabolic acidosis, administration of ethanol, and haemodialysis may be indicated.

SECTION 5 FIREFIGHTING MEASURES

Flammable Properties	Flash point: 91 °C (195.8 °F) (TCC) Autoignition temperature: 204 °C (399.2 °F) Lower and Upper explosion limit: No Data Available.
Extinguishing media	SMALL FIRE: Use dry chemicals, CO2, water spray or alcohol-resistant foam LARGE FIRE: Use water spray, water fog or alcohol-resistant foam
Protective equipment and precautions for firefighters	Wear positive pressure self-contained breathing apparatus (SCBA). Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
Hazardous combustion products	Carbon oxides (CO, CO2)

SECTION 6 ACCIDENTAL RELEASE MEASURES

Spills and Leaks	Contain spill with dike to prevent entry into sewers or waterways. For large spills, dike and pump into properly labelled containers for reclamation or disposal. For small spills, soak up with absorbent material and place in properly labelled containers for disposal. All recovered material should be packaged, labelled, transported and disposed of or reclaimed in conformance with applicable laws and regulations and in conformance with good engineering practices. Reclaim where possible.

SECTION 7 HANDLING AND STORAGE

Handling	Do not handle near heat, sparks, or flame. Avoid contact with incompatible agents. Use only with adequate ventilation/personal protection. Avoid contact with eyes, skin and clothing. Do not enter storage area unless adequately ventilated. Metal containers involved in the transfer of this material should be grounded and bonded. It is recommended that any liquid product exposed to air not be highly concentrated by evaporation without first assuring that no peroxide is present. Alternately, positive steps should be taken to reduce any accumulated peroxides to a safe level before concentrating the liquid.
Storage	Store containers in a cool, dry, ventilated, fire resistant area away from sources of ignition and incompatible materials. Keep container tightly closed and properly labelled.

SECTION 8 EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering controls: Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits.

Personal protective equipment

Inhalation: When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Eyes: Eye protection such as chemical splash goggles and/or face shield must be worn when possibility exists for eye contact due to splashing or spraying liquid, airborne particles, or vapor.

Skin: Wear chemical resistant gloves such as rubber, neoprene or vinyl. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Remarks

Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the hazards and/or potential hazards that may be encountered during use. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. Take off contaminated clothing and wash before reuse. Shower after work using plenty of soap and water.

Occupational Exposure Limits

Component	Source	Type:	Value	Note
2-ethoxyethanol	US (ACGIH)	TWA	5 ppm	None.
	Singapore	PEL	5 ppm	None.
Ethane-1,2-diol	Singapore	STEL	50 ppm	None.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Physical state and appearance	Liquid colourless	Upper explosion limit	no data available
Odour	Sweet odour	Explosive properties	no data available
Odour Threshold	No value available	Oxidizing properties	no data available
pH	Not applicable	Vapor pressure	0.1 mm Hg @ 20 °C (68 °F)
Boiling Point and boiling range	198 °C (388.4 °F)	Evaporation rate	0.013 (butyl acetate = 1)
Melting Point/freezing point	-76 °C (-104.8 °F)	Relative density	0.991 @ 20 °C (68 °F) (Water = 1)
Flash Point	91 °C (195.8 °F) (TCC)	Relative vapor density	4.62 (Air = 1.0)
Auto-ignition temperature	no data available	Viscosity	3.85 mPa.s
Lower explosion limit	no data available	Water solubility	100%
Explosive properties	no data available	Partition coefficient: n-octanol/water	Log Kow = -0.54
Other physico-chemical properties	Hygroscopic. Additional properties may be listed in Sections 2 and 5.		

SECTION 10 STABILITY AND REACTIVITY

Chemical stability: The product is stable.
Conditions to avoid: Avoid contact with strong oxidizers, excessive heat, sparks or open flame.
Materials to avoid: Oxidizers, Acids, Alkalis
Hazardous decomposition products: Carbon Monoxide and Carbon dioxide.
Hazardous polymerization: Will not occur.
Reactions with Air and Water: May form peroxides in the presence of air.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

111-90-0 Ethanol, 2-(2-ethoxyethoxy)-

Acute toxicity
LD50 Oral - rat – 5.400 mg/kg
LD50 Dermal - rabbit - 9.000 mg/kg

Skin: slight skin irritant

Eyes: Moderate eye irritant.
Repeated dose toxicity: In a two year drinking water study with rats and mice, no adverse effects were observed at 1% and 5%, respectively.
Carcinogenicity: Not listed by IARC, NTP, OSHA or EPA.

111-80-5 2-ethoxyethanol

Acute toxicity
LD50 Oral – guinea pig – 3.000 mg/l 4Hours
LD50 Oral - rat – 2.800 mg/kg
LD50 Dermal - rabbit – 3.500 mg/kg

Irritation: Eyes: Slight eye irritant.
Repeated dose toxicity: Repeated oral or inhalation exposures can cause effects in the testes, thymus, kidneys, brain, and hematopoietic tissues.
Reproductive effects: Acute or repeated oral, dermal, or inhalation exposures can cause reproductive toxicity and developmental effects.

107-21-1 Ethane-1,2-diol

Acute toxicity
LD50 Inhalation - rat >183ppm 8HOURS
LD50 Oral - rat >5.000 mg/kg
LD50 Dermal - rabbit >5.000 mg/kg

Acute Effects: Inhalation: This substance has a low order of acute toxicity by the inhalation route. respiratory irritation. Ingestion: This substance is of low acute toxicity when administered orally. However, accidental or intentional acute ingestions in humans have caused poisoning and death. Ingestion may cause CNS depression; damage to the gastrointestinal tract, lungs, liver, brain, and kidneys; metabolic acidosis; and hyperkalaemia and hypercalcaemia. Persistent neurological effects include facial paralysis, slurred speech, loss of motor skills, and impaired vision. Death generally occurs from renal insufficiency. Skin: The substance is poorly absorbed through skin.

Irritation: Skin: Contact may cause mild skin irritation. Eyes: This material is expected to be a mild eye irritant.

Sensitization: Not expected to be a sensitizer.

Target Organs: Kidney Gastrointestinal tract Liver Lungs Respiratory system Central nervous system

SECTION 11 TOXICOLOGICAL INFORMATION

Repeated dose toxicity: This substance is of low to moderate toxicity following repeated exposures. The kidney is the primary target organ for toxicity. Renal toxicity is generally accompanied by oxaluria and accumulation of calcium and oxylate crystals. Effects are more pronounced in male rodents.

Reproductive effects: May cause toxicity to reproduction following repeated doses at generally high exposure concentrations based on animal test data. Selective reproductive toxicant to mice, but not rats. In mice reproductive effects were observed at dose levels higher than those causing developmental toxicity in mice or renal toxicity in rats.

Developmental Toxicity: May be toxic to embryo/fetal development and teratogenic at high exposure levels based on animal test data.

Genetic Toxicity: Negative for genotoxicity using both in vitro and in vivo tests.

Carcinogenicity: Ethylene glycol was not carcinogenic in two year studies in rats and mice. This material is not classified as a carcinogen. Not listed by IARC, NTP, OSHA or EPA.

SECTION 12 ECOLOGICAL INFORMATION

Ecotoxicity:

111-90-0 Ethanol, 2-(2-ethoxyethoxy)-This material is expected to have low toxicity to aquatic species. However, due caution should be exercised to prevent the accidental release of this material to the environment.

110-80-5 2-ethoxyethanol. This material is not harmful or toxic to fish.

Acute Toxicity:

111-90-0 Ethanol, 2-(2-ethoxyethoxy)-
LC50 / 24 HOUR goldfish > 5,000 mg/l
LC50 / 96 HOUR fathead minnow 26,500 mg/l

110-80-5 2-ethoxyethanol
LC50 / 24 HOUR Carassius auratus (goldfish) > 5,000 mg/l
LC50 / 96 HOUR bluegill. > 10,000 mg/l

107-21-1 Ethane-1,2-diol
LC50 / 96 HOUR Oncorhynchus mykiss (rainbow trout) 22,810 mg/l
LC50 / 96 HOUR Pimephales promelas (fathead minnow) 49,000 mg/l
Summary: Acute toxicity to fish is very low.

Toxicity to Aquatic Plants:

107-21-1 Ethane-1,2-diol
LC50 / 96 HOURS Scenedesmus capricornutum (fresh water algae) 10,940 mg/l
Summary: cute toxicity to aquatic plants very low.

Toxicity to microorganisms:

107-21-1 Ethane-1,2-diol
Toxicity Threshold / 16 HOURS Pseudomonas putida > 10,000 mg/l

Chronic Toxicity to fish:

107-21-1 Ethane-1,2-diol
NOEC / 12 DAY Oncorhynchus mykiss (rainbow trout) 14,692 mg/l Low chronic toxicity to fish.

Chronic Toxicity to aquatic invertebrates:

107-21-1 Ethane-1,2-diol
NOEC / 7 DAY Ceriodaphnia dubia 3,469 mg/l Low chronic toxicity to aquatic invertebrates.

Other adverse effects:

111-90-0 Ethanol, 2-(2-ethoxyethoxy)-
This material is expected to have low toxicity to aquatic species. However, due caution should be exercised to prevent the accidental release of this material to the environment.

110-80-5 2-ethoxyethanol
This material is not harmful or toxic to fish.

107-21-1 Ethane-1,2-diol
Low toxicity to terrestrial plants

Environmental fate and pathways

111-90-0 Ethanol, 2-(2-ethoxyethoxy)-
Expected to have high mobility in soils.
Volatilization from dry soil surfaces is expected.
While this material may evaporate into the air from dry soil, it is unlikely to evaporate from moist soil or water.
This material is expected to exist solely as a vapor in the ambient atmosphere.
The vapor-phase of this material is degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals and ozone.

SECTION 12 ECOLOGICAL INFORMATION

Environmental fate and pathways

110-80-5 2- ethoxyethanol
Expected to have high mobility in soils.
Volatilization from dry soil surfaces is expected.
Not likely to adsorb to suspended solids and sediment in water.
This material is expected to exist solely as a vapor in the ambient atmosphere.
Vapor-phase is degraded in the atmosphere by reaction with photochemically produced hydroxyl radicals.

Predicted distribution to environmental compartments: no data available

Persistence and degradability

Stability in water:

107-21-1 Ethane-1,2-diol
Ethylene glycol is highly soluble in water.

Stability in soil:

107-21-1 Ethane-1,2-diol
Models estimate that Ethylene Glycol will preferentially partition to water versus air or soil. Ethylene glycol biodegrades rapidly in soil, and will not persist in the environment.

Biodegradation:

111-90-0 Ethanol, 2-(2-ethoxyethoxy)-
Incubation of diethylene glycol monoethyl ether for 5, 10, and 20 days without an acclimation period resulted in theorectical BOD values or 5, 31, and 48%, respecitively. This material is expected to be readily biodegradable.

110-80-5 2-ethoxyethanol
This material is expected to be readily biodegradable.

107-21-1 Ethane-1,2-diolBiodegradable under aerobic conditions.
(97% degraded in 28 days); Expected to be hydrolytically stable.

Bioaccumulation:

111-90-0 Ethanol, 2-(2-ethoxyethoxy)-
Bioconcentration factor (BCF) 0.2 BCF = 0.2

110-80-5 2-ethoxyethanol
Bioconcentration factor (BCF) 0.34 This material is not expected to bioaccumulate.

107-21-1 Ethane-1,2-diol
Bioconcentration factor (BCF) 10 Bioaccumulation potential is expected to be low Leuciscus idus melanotus (golden ide) BCF value=10

Other adverse effects:

107-21-1 Ethane-1,2-diol
Photodegradation following atmospheric release is not expected to be a significant route of degradation in the environment.

SECTION 13 DISPOSAL CONSIDERATION

Dispose of all waste and contaminated equipment in accordance with all applicable federal, state and local health and environmental regulations. Recovery and reuse, rather than disposal, should be the ultimate goal of handling efforts. The materials resulting from clean-up operations may be hazardous wastes and therefore, subject to specific regulations.

SECTION 14 TRANSPORT INFORMATION

Special Provisions: If you reformulate or further process this material, you should consider re-evaluation of the regulatory status of the components listed in the composition section of this sheet, based on final composition of your product.

Proper shipping name: GLYCOL ETHERS, NOT ELSEWHERE CLASSIFIED, not regulated

SECTION 15 REGULATORY INFORMATION

New Zealand: HSNO Approval Number: HSR003154
Classification: As per section 2

Notification status
All ingredients are on the following inventories or are exempted from listing

Country	Notification
Australia	AICS
Canada	DSL
China	IECS
European Union	EINECS-No.
Japan	ENCS/ISHL number
Korea	ECL
Philippines	PICCS
United States of America	TSCA list
New Zealand	NZIoC

SECTION 16 OTHER INFORMATION

The information contained in this Material Safety Data Sheet is obtained from current and reliable sources. Pure Ingredients Ltd provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This Material Safety Data Sheet summarises our best current knowledge of the health and safety hazard information of the product, but does not claim to be all inclusive. This document is intended only as a guide to the appropriate handling of this material.

Revision: 00 – 21/ 12/ 2018 SA040 0112202014
Version: 01 Revision Date: 04/05/2020: PIL SDS Change of address - no changes to SDS.