

SECTION 1: Identification

1.1. Identification

Product form : Substance
Substance name : Triethylene Glycol
CAS-No. : 112-27-6
Formula : C₆H₁₄O₄
Synonyms : GT, TEG, Triglycol, 1,2-Bis(2-hydroxy)ethane, 2, 2'-Ethylenedioxyethanol

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Intermediate
Solvent
Chemical raw material
Restrictions on use : None known

1.3. Supplier

Atlanta Branch Office

Whitaker Oil Company
1557 Marietta Road NW
Atlanta, GA 30318
404-355-8220 (t)
404-355-2436 (f)

Ocoee Branch Office

Whitaker Oil Company
280 Enterprise Street
Ocoee, FL 34761
407-656.0088 (t)
407-877-8335 (f)

Spartanburg Branch Office

Whitaker Chemicals LLC
405 John Dodd Road
Spartanburg, SC 29303
864-578-6968 (t)
864-578-6864 (f)

WEBSITE: www.whitakeroil.com

EMAIL: SDS@whitakeroil.com

1.4. Emergency telephone number

Emergency number : **CHEMTREC** 800-424-9300

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Specific target organ toxicity (repeated exposure) H373 May cause damage to organs through prolonged or repeated exposure
Category 2

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) : Warning
Hazard statements (GHS-US) : H373 - May cause damage to organs through prolonged or repeated exposure
Precautionary statements (GHS-US) : P260 - Do not breathe mist, vapors
P264 - Wash Skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P314 - Get medical advice/attention if you feel unwell
P405 - Store locked up
P501 - Dispose of contents/container in Collection point

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

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SECTION 3: Composition/Information on ingredients

3.1. Substances

Substance type : Mono-constituent
Name : Triethylene Glycol
CAS-No. : 112-27-6

Name	Product identifier	%	GHS-US classification
Diethylene Glycol	(CAS-No.) 111-46-6	<= 5	Acute Tox. 4 (Oral), H302 STOT RE 2, H373
Ethylene Glycol	(CAS-No.) 107-21-1	0 - 1	Acute Tox. 4 (Oral), H302 Eye Irrit. 2B, H320 STOT SE 2, H371 STOT RE 2, H373

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice.
First-aid measures after inhalation : If inhaled and if breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
First-aid measures after skin contact : Rinse with water. Soap may be used. Remove clothing before washing. Take victim to a doctor if irritation persists.
First-aid measures after eye contact : Rinse with water. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.
First-aid measures after ingestion : Rinse mouth with water. Call Poison Control Center. Get immediate medical advice/ attention. Consult a doctor/medical service if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/ injuries : Causes damage to organs (kidney, renal, respiratory, CNS) through prolonged or repeated exposure (oral).
Symptoms/effects after inhalation : In high concentration: Inhalation may cause: irritation, coughing, shortness of breath.
Symptoms/effects after skin contact : May cause moderate irritation.
Symptoms/effects after eye contact : Direct contact with the eyes is likely to be irritating.
Symptoms/effects after ingestion : Like any product not designed to be ingested, this product may cause stomach distress if ingested in large quantities.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Carbon dioxide. Dry powder. Foam. Sand.
Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Fire hazard : No particular fire or explosion hazard.
Reactivity : No dangerous reactions known.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Cool adjacent structures and containers with water spray to protect and prevent ignition. Exercise caution when fighting any chemical fire. Do not allow run-off from fire fighting to enter drains or water courses.
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Use self-contained breathing apparatus. Wear fire/ flame resistant/ retardant clothing.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Contain released product, pump into suitable containers. Plug the leak, cut off the supply.

Methods for cleaning up : Take up liquid spill into absorbent material, e.g.: sand, earth, vermiculite or powdered limestone. Scoop absorbed substance into closing containers. Wash down leftovers with plenty of water. Wash clothing and equipment after handling.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid breathing vapors. Do not get into eyes, on skin, or on clothing.

Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store locked up. Store in a well-ventilated place. Keep cool. Do not store near foodstuffs, drugs, or potable water supplies.

Incompatible products : Strong oxidizers. Strong bases. Strong acids.

Incompatible materials : Heat sources. Sources of ignition.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Ethylene Glycol (107-21-1)		
ACGIH	Local name	Ethylene glycol
ACGIH	ACGIH TWA (mg/m ³)	10 mg/m ³
ACGIH	ACGIH TWA (ppm)	25 ppm (Vapor fraction)
ACGIH	ACGIH STEL (mg/m ³)	10 mg/m ³ (Inhalable fraction, Aerosol only)
ACGIH	ACGIH STEL (ppm)	50 ppm (Vapor fraction)
ACGIH	ACGIH Ceiling (ppm)	39.4 ppm
ACGIH	Remark (ACGIH)	URT & eye irr
OSHA	Remark (OSHA)	Not applicable
Diethylene Glycol (111-46-6)		
ACGIH	Remark (ACGIH)	Not applicable
OSHA	Remark (OSHA)	Not applicable

8.2. Appropriate engineering controls

Appropriate engineering controls : Avoid creating mist or spray. Avoid splashing. Provide local exhaust ventilation of closed transfer systems to minimize exposures.

Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

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Materials for protective clothing:

GIVE GOOD RESISTANCE: butyl rubber. neoprene. nitrile rubber. viton

Hand protection:

Wear suitable gloves resistant to chemical penetration.

Eye protection:

Chemical goggles or safety glasses

Skin and body protection:

Protective clothing

Respiratory protection:

Respiratory protection not required in normal conditions.

In case of inadequate ventilation wear respiratory. Use air-purifying respirator equipped with particulate filtering cartridges.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid.
Color	: Colorless.
Odor	: Odorless
Odor threshold	: No data available
pH	: 8 (estimate)
Melting point/ Freezing point	: -7 °C
Boiling point	: > 280 °C
Flash point	: 171 °C
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not applicable.
Vapor pressure	: < 0.01 mm Hg @ (20 °C)
Relative vapor density at 20 °C	: No data available
Relative density	: 1.12 - 1.13 (15 °C)
Specific gravity / density	: 1124 kg/m ³
Molecular mass	: 150.17 g/mol
Solubility	: Soluble in water.
Log Pow	: No data available
Auto-ignition temperature	: 323 °C
Decomposition temperature	: No data available
Viscosity	: No data available
Explosion limits	: 0.9 - 9.2 vol % 55 - 580 g/m ³ LEL: 0.9 vol % UEL: 9.2 vol %
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

Specific conductivity	: 8400000 pS/m
VOC content	: 0 %
Other properties	: Gas/vapour heavier than air at 20°C. Clear. Hygroscopic. Slightly volatile.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts violently with (strong) oxidizers.

10.2. Chemical stability

Stable at ambient temperature and under normal conditions of use.

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10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Sparks. Keep away from sources of ignition. Heat.

10.5. Incompatible materials

Strong acids. Strong bases. Strong oxidizing agents.

10.6. Hazardous decomposition products

Carbon dioxide. Carbon monoxide. Aldehydes.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

Triethylene Glycol (112-27-6)	
LD50 oral rat	> 2000 mg/kg (Rat, Literature study)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit, Literature study)

Ethylene Glycol (107-21-1)	
LD50 oral rat	7712 mg/kg body weight (according to BASF-internal standards, Rat, Male/female, Experimental value)
LD50 dermal rat	> mg/kg
LC50 inhalation rat (mg/l)	> 2.5 mg/l (6 h, Rat, Male/female, Experimental value)
ATE US (oral)	500 mg/kg body weight

Diethylene Glycol (111-46-6)	
LD50 oral rat	19600 mg/kg body weight (OECD 401: Acute Oral Toxicity, Rat, Male, Experimental value)
LD50 dermal rat	13300 mg/kg
LD50 dermal rabbit	11890 mg/kg (Rabbit)
LC50 inhalation rat (mg/l)	> 4.6 mg/l air (Other, 4 h, Rat, Weight of evidence)
ATE US (oral)	500 mg/kg body weight

Skin corrosion/irritation : Not classified
pH: 8
Serious eye damage/irritation : Not classified
pH: 8
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
Specific target organ toxicity – single exposure : May cause damage to organs.

Ethylene Glycol (107-21-1)	
Specific target organ toxicity – single exposure	May cause damage to organs (central nervous system, kidneys) (oral).

Specific target organ toxicity – repeated exposure : May cause damage to organs through prolonged or repeated exposure.

Ethylene Glycol (107-21-1)	
Specific target organ toxicity – repeated exposure	May cause damage to organs (central nervous system, kidneys, liver) through prolonged or repeated exposure (oral).

Diethylene Glycol (111-46-6)	
Specific target organ toxicity – repeated exposure	May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard : Not classified

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Potential Adverse human health effects and symptoms	: Non-toxic if swallowed (LD50 oral, rat > 5000 mg/kg). Non-toxic in contact with skin (LD50 skin > 5000 mg/kg). Not irritant to skin. Slightly harmful by inhalation. Slightly irritant to respiratory organs. Slightly irritant to eyes.
Symptoms/effects after inhalation	: Slight irritation. EXPOSURE TO HIGH CONCENTRATIONS: Dry/sore throat. Coughing. Irritation of the nasal mucous membranes.
Symptoms/effects after skin contact	: No effects known.
Symptoms/effects after eye contact	: Redness of the eye tissue. Slight irritation.
Symptoms/effects after ingestion	: AFTER INGESTION OF HIGH QUANTITIES: Central nervous system depression. Dizziness. Headache. Vomiting. Nausea. Irritation of the gastric/intestinal mucosa.
Chronic symptoms	: ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Dry skin.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - water : Not harmful to crustacea. Not harmful to fishes. Mild water pollutant (surface water). Not harmful to activated sludge. Not harmful to algae. Slightly harmful to bacteria.

Triethylene Glycol (112-27-6)	
LC50 fish 1	61000 mg/l (96 h, <i>Lepomis macrochirus</i> , Flow-through system)
EC50 Daphnia 1	42426 mg/l (48 h, <i>Daphnia magna</i>)
Ethylene Glycol (107-21-1)	
LC50 fish 1	<i>Pimephales promelas</i>
EC50 Daphnia 1	> 10000 mg/l (24 h, <i>Daphnia magna</i>)
NOEC (chronic)	15380 mg/l chronic fish / <i>Pimephales promelas</i>
NOEC chronic crustacea	8590 mg/l
NOEC (additional information)	8590 mg/l chronic crustacea / <i>Ceriodaphnia</i> sp.
Diethylene Glycol (111-46-6)	
LC50 fish 1	> 5000 ppm (24 h, <i>Carassius auratus</i>)
EC50 Daphnia 1	> 10000 mg/l (24 h, <i>Daphnia magna</i>)
LC50 fish 2	75200 mg/l (Other, 96 h, <i>Pimephales promelas</i> , Flow-through system, Experimental value)
EC50 Daphnia 2	> 10000 mg/l (DIN 38412-11, 24 h, <i>Daphnia magna</i> , Static system, Fresh water, Experimental value)

12.2. Persistence and degradability

Triethylene Glycol (112-27-6)	
Persistence and degradability	Inherently biodegradable. Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.03 g O ₂ /g substance
Chemical oxygen demand (COD)	1.57 g O ₂ /g substance
ThOD	1.6 g O ₂ /g substance
Ethylene Glycol (107-21-1)	
Persistence and degradability	Biodegradable in the soil. Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.47 g O ₂ /g substance
Chemical oxygen demand (COD)	1.24 g O ₂ /g substance
ThOD	1.29 g O ₂ /g substance
BOD (% of ThOD)	0.36
Diethylene Glycol (111-46-6)	
Persistence and degradability	Biodegradable in the soil. Biodegradable in water.
Biochemical oxygen demand (BOD)	0.02 g O ₂ /g substance
Chemical oxygen demand (COD)	1.51 g O ₂ /g substance
ThOD	1.51 g O ₂ /g substance
BOD (% of ThOD)	0.015

12.3. Bioaccumulative potential

Triethylene Glycol (112-27-6)	
Log Pow	-1.75 (Literature study)
Bioaccumulative potential	Not bioaccumulative.
Ethylene Glycol (107-21-1)	
BCF fish 1	10 (72 h, <i>Leuciscus idus</i>)

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Ethylene Glycol (107-21-1)	
BCF other aquatic organisms 1	0.21 - 0.6 (Procambarus sp., Chronic)
BCF other aquatic organisms 2	190 (24 h, Algae)
Log Pow	-1.34 (Experimental value)
Bioaccumulative potential	Not bioaccumulative.

Diethylene Glycol (111-46-6)	
BCF fish 1	100 (Other, 3 day(s), Leuciscus melanotus, Static system, Fresh water, Experimental value)
Bioconcentration factor (BCF REACH)	100
Log Pow	-1.98 (Calculated, Other)
Bioaccumulative potential	Not bioaccumulative.

12.4. Mobility in soil

Triethylene Glycol (112-27-6)	
Surface tension	0.045 N/m (20 °C)

Ethylene Glycol (107-21-1)	
Surface tension	48 mN/m (20 °C)
Ecology - soil	No (test)data on mobility of the substance available.

Diethylene Glycol (111-46-6)	
Mobility in soil	No additional information available
Surface tension	0.0485 N/m
Log Koc	0 (log Koc, SRC PCKOCWIN v1.66, Calculated value)
Ecology - soil	Highly mobile in soil.

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

- Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
- Product/Packaging disposal recommendations : Do not discharge into surface water. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle by distillation. Remove to an authorized waste incinerator for solvents with energy recovery.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT : Not considered a dangerous good for transport regulations.

Transportation of Dangerous Goods

Transport by sea

Air transport

SECTION 15: Regulatory information

15.1. US Federal regulations

Triethylene Glycol (112-27-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

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All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

Ethylene Glycol	CAS-No. 107-21-1	0 - 1%
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Ethylene Glycol (107-21-1)	
EPA TSCA Regulatory Flag	T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.
CERCLA RQ	5000 lb
SARA Section 311/312 Hazard Classes	Health hazard - Acute toxicity (any route of exposure) Health hazard - Aspiration hazard

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

⚠ WARNING: This product can expose you to Ethylene Glycol, 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.

Component	Carcinogenicity	Developmental toxicity	Reproductive toxicity male	Reproductive toxicity female	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Ethylene Glycol(107-21-1)				X		

Component	State or local regulations
Ethylene Glycol(107-21-1)	U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List
Diethylene Glycol(111-46-6)	

SECTION 16: Other information

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Revision date : 05/15/2018

Full text of H-phrases:

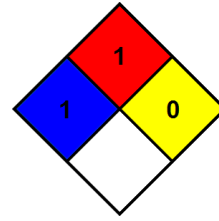
H302	Harmful if swallowed
H320	Causes eye irritation
H371	May cause damage to organs
H373	May cause damage to organs through prolonged or repeated exposure

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NFPA health hazard	: 1 - Materials that, under emergency conditions, can cause significant irritation.
NFPA fire hazard	: 1 - Materials that must be preheated before ignition can occur.
NFPA reactivity	: 0 - Material that in themselves are normally stable, even under fire conditions.



SDS US (GHS HazCom 2012)

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