

Material Name: Antifreeze 100% SDS ID: 88003

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name

Antifreeze 100%

Product Code

Not available.

Synonyms

Antifreeze.

Product Use

Antifreeze. If this product is used in combination with other products, refer to the Safety Data Sheet for those products.

Restrictions on Use

None known.

Details of the supplier of the safety data sheet

Emerald Services, Inc.

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Phone: 206-832-3225

Emergency Phone #: (800) 424-9300 (CHEMTREC - #7619)

Issue Date

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May 2, 2014

Original Issue Date

December 5, 2011

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.

Acute Toxicity - Oral - Category 4

Skin Corrosion/Irritation - Category 2

Serious Eye Damage/Eye Irritation - Category 2A

Reproductive Toxicity - Category 2

Specific Target Organ Toxicity - Repeated Exposure - Category 2 (kidney, liver)

GHS Label Elements

Symbol(s)



Signal Word

Warning

Hazard Statement(s)

Harmful if swallowed.

Causes skin irritation and serious eye irritation.

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Suspected of damaging fertility or the unborn child.

May cause damage to organs through prolonged or repeated exposure.

Precautionary Statement(s)

Prevention

Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Do not eat, drink or smoke when using this product.

Response

IF exposed or concerned: Get medical advice/attention. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth. 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 ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.

Storage

Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) Not Otherwise Classified

None known.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
107-21-1	Ethylene glycol	>95
1310-73-2	Sodium hydroxide	0.5-1
12179-04-3	Disodium tetraborate pentahydrate	0.2-0.5
1310-58-3	Potassium hydroxide	0.2-0.5

Section 4 - FIRST AID 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: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.

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.

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth.

Most Important Symptoms/Effects

Acute

Harmful if swallowed. Causes serious eye irritation. Causes skin irritation.

Delayed

Causes reproductive effects, kidney damage, liver damage.

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Indication of any immediate medical attention and special treatment needed

Treat symptomatically and supportively. Treatment may vary with condition of victim and specifics of incident. Call (800) 424-9300 (CHEMTREC - #7619) for additional information.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Carbon dioxide, alcohol-resistant foam, dry chemical, water spray, water fog. Water or foam may cause frothing.

Unsuitable Extinguishing Media

Do not use high-pressure water streams.

Special Hazards Arising from the Chemical

Slight fire hazard. Avoid friction, static electricity and sparks.

Hazardous Combustion Products

Decomposition and combustion materials may be toxic. Burning may produce carbon monoxide and unidentified organic compounds.

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. Fight fire from a maximum distance or use unmanned hose holders or monitor nozzles. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. Avoid inhalation of material or combustion byproducts. Stay upwind and keep out of low areas. Apply water from a protected location or from a safe distance. Dike for later disposal. Keep storage containers cool with water spray. Heated containers may rupture or be thrown into the air. "Empty" containers may retain residue and can be dangerous.

Special Protective Equipment and Precautions for Firefighters

A positive-pressure, self-contained breathing apparatus (SCBA) and full-body protective equipment are required for fire emergencies.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Wear personal protective clothing and equipment. Avoid release to the environment.

Methods and Materials for Containment and Cleaning Up

Remove all ignition sources. Do not touch or walk through spilled product. Stop leak if you can do it without risk. Wear protective equipment and provide engineering controls as specified in SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Ventilate area and avoid breathing vapor or mist. A vapor suppressing foam may be used to reduce vapors. Contain spill away from surface water and sewers. 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: Water spray may reduce vapor, but may not prevent ignition in closed spaces. Dike far ahead of liquid spill for collection and later disposal. There may be specific federal regulatory reporting requirements associated with spills, leaks, or releases of this product.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling

Do not breathe vapor or mist. Do not eat, drink, or smoke when using this product. Wear suitable protective gloves and eye/face protection. Wash thoroughly after handling.

Conditions for Safe Storage, Including any Incompatibilities

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Store locked up. Keep container tightly closed when not in use and during transport. Store in a cool, dry, well-ventilated area. Do not pressurize, cut, heat or weld containers. Empty product containers may contain product residue. Do not reuse empty containers.

Incompatible Materials

Oxidizing agents. ETHYLENE GLYCOL reacts violently with acids, bases, chlorosulfonic acid, metals, oleum, oxidizing materials, perchloric acid, reducing agents, and sulfuric acid.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

Ethylene glycol	107-21-1			
ACGIH	$25~\rm ppm$ TWA vapor fraction; $50~\rm ppm$ STEL vapor fraction ; $10~\rm mg/m3$ STEL inhalable particulate matter, aerosol only			
Sodium hydroxide	1310-73-2			
ACGIH	2 mg/m3 Ceiling			
NIOSH	2 mg/m3 Ceiling; 10 mg/m3 IDLH			
OSHA (US)	2 mg/m3 TWA			
Disodium tetraborate pentahydrate	12179-04-3			
Disodium tetraborate pentahydrate ACGIH	2 mg/m3 TWA inhalable particulate matter; 6 mg/m3 STEL inhalable particulate matter			
	2 mg/m3 TWA inhalable particulate matter; 6 mg/m3 STEL inhalable			
ACGIH	2 mg/m3 TWA inhalable particulate matter; 6 mg/m3 STEL inhalable particulate matter			
ACGIH NIOSH	2 mg/m3 TWA inhalable particulate matter; 6 mg/m3 STEL inhalable particulate matter 1 mg/m3 TWA			

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

There are no biological limit values for any of this product's components.

Engineering Controls

Provide general ventilation. Where adequate general ventilation is unavailable, use process enclosures, local exhaust ventilation, or other engineering.

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

A respiratory protection program which meets USA's OSHA General Industry Standard 29 CFR 1910.134 or Canada's CSA Standard Z94.4-M1982 requirements must be followed whenever workplace conditions warrant a respirator's use. Consult a qualified Industrial Hygienist or Safety Professional for respirator selection guidance.

Glove Recommendations

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Where skin contact is likely, wear chemical impervious protective gloves; use of natural rubber or equivalent gloves is not recommended. To avoid prolonged or repeated contact where spills and splashes are likely, wear appropriate chemical-resistant faceshield, boots, apron, coveralls, long sleeve shirts, 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: Safety glasses, gloves, and/or lab coat or apron.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Green liquid	Physical State	Liquid	
Odor	Characteristic	Color	Green	
Odor Threshold	Not available	рН	Not available	
Melting Point	Not available	Boiling Point	Not available	
Boiling Point Range	325-333 °C	Freezing point	Not available	
Evaporation Rate	Not available	Flammability (solid, gas)	Not available	
Autoignition Temperature	Not available	Flash Point	128 °C (262°F)	
Lower Explosive Limit	3.2 %	Decomposition temperature	Not available	
Upper Explosive Limit	15.3 %	Vapor Pressure	18mmHg @ 20 °C	
Vapor Density (air=1)	1.8	Specific Gravity (water=1)	1.065 - 1.075 at 68 °F	
Water Solubility	Soluble	Partition coefficient: n-octanol/water	Not available	
Viscosity	Not available	Kinematic viscosity	Not available	
Solubility (Other)	Not available	Density	Not available	
Physical Form	Liquid	Volatility	>95 %	
Molecular Weight	Not available			

Section 10 - STABILITY AND REACTIVITY

Reactivity

No reactivity hazard is expected.

Chemical Stability

Stable under normal temperatures and pressures.

Possibility of Hazardous Reactions

Will not polymerize.

Conditions to Avoid

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

Incompatible Materials

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Oxidizing materials. ETHYLENE GLYCOL reacts violently with acids, bases, chlorosulfonic acid, metals, oleum, oxidizing materials, perchloric acid, reducing agents, and sulfuric acid.

Hazardous decomposition products

None under normal temperatures and pressures.

Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Inhalation

May cause kidney damage, liver damage.

Skin Contact

Causes skin irritation.

Eve Contact

Causes serious eye irritation.

Ingestion

Harmful if swallowed. May cause vomiting and nausea.

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:

Ethylene glycol (107-21-1)

Oral LD50 Rat 4700 mg/kg; Dermal LD50 Rat 10600 mg/kg

Sodium hydroxide (1310-73-2)

Dermal LD50 Rabbit 1350 mg/kg

Disodium tetraborate pentahydrate (12179-04-3)

Oral LD50 Rat 2403 mg/kg

Potassium hydroxide (1310-58-3)

Oral LD50 Rat 284 mg/kg

Product Toxicity Data

Acute Toxicity Estimate

Dermal > 2000 mg/kg

Immediate Effects

Harmful if swallowed. Causes serious eye irritation. Causes skin irritation.

Delayed Effects

Causes reproductive effects, kidney damage, liver damage.

Irritation/Corrosivity Data

Causes serious eye irritation. Causes skin irritation.

Respiratory Sensitization

No information available for the product.

Dermal Sensitization

No information available for the product.

Component Carcinogenicity

Ethylene glycol	107-21-1
ACGIH:	A4 - Not Classifiable as a Human Carcinogen
Disodium tetraborate pentahydrate	12179-04-3
ACGIH:	A4 - Not Classifiable as a Human Carcinogen

Germ Cell Mutagenicity

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No information available for the product.

Tumorigenic Data

No information available for the product.

Reproductive Toxicity

Suspected of damaging fertility or the unborn child.

Specific Target Organ Toxicity - Single Exposure

No target organs identified.

Specific Target Organ Toxicity - Repeated Exposure

Kidneys, liver.

Aspiration hazard

No information available for the product.

Medical Conditions Aggravated by Exposure

No data available.

Section 12 - ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic life.

Component Analysis - Aquatic Toxicity

Ethylene glycol	107-21-1
Fish:	LC50 96 h Oncorhynchus mykiss 41000 mg/L; LC50 96 h Oncorhynchus mykiss 14 - 18 mL/L [static]; LC50 96 h Lepomis macrochirus 27540 mg/L [static]; LC50 96 h Oncorhynchus mykiss 40761 mg/L [static]; LC50 96 h Pimephales promelas 40000 - 60000 mg/L [static]; LC50 96 h Poecilia reticulata 16000 mg/L [static]
Algae:	EC50 96 h Pseudokirchneriella subcapitata 6500 - 13000 mg/L IUCLID
Invertebrate: EC50 48 h Daphnia magna 46300 mg/L IUCLID	
Sodium hydroxide	1310-73-2
Fish:	LC50 96 h Oncorhynchus mykiss 45.4 mg/L [static]

Persistence and Degradability

No information available for the product.

Bioaccumulative Potential

No information available for the product.

Mobility

No information available for the product.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods

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

Component Waste Numbers

The U.S. EPA has not published waste numbers for this product's components.

S	ection 14 - TRANSPORT INFORMATION

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Component Marine Pollutants (IMDG)

Not a marine pollutant.

US DOT Information: Not regulated for transport.

Additional Information:

Bulk Shipments Where ethylene glycol is present at 5000 lbs or greater (~1070 gallons blended product): UN 3082, Environmentally hazardous substance, liquid, n.o.s. (Ethylene glycol), RQ, 9, PGIII

IATA Information: Not regulated for transport. **IMDG Information:** Not regulated for transport. **TDG Information:** Not regulated for transport.

International Bulk Chemical Code

This material contains one or more of the following chemicals required by the IBC Code to be identified as dangerous chemicals in bulk.

Ethylene glycol	107-21-1			
IBC Code:	Category Y			
Sodium hydroxide	1310-73-2			
IBC Code:	Category Y (solution)			
Potassium hydroxide	1310-58-3			
IBC Code:	Category Y (solution)			

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.

Ethylene glycol	107-21-1		
SARA 313:	1 % de minimis concentration		
CERCLA:	5000 lb final RQ ; 2270 kg final RQ		
Sodium hydroxide	1310-73-2		
CERCLA:	1000 lb final RQ ; 454 kg final RQ		
Potassium hydroxide	1310-58-3		
CERCLA:	1000 lb final RQ ; 454 kg final RQ		

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

Acute toxicity; Reproductive Toxicity; Skin Corrosion/Irritation; 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:

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Ethylene glycol	107-21-1	Yes	Yes	Yes	Yes	Yes
Sodium hydroxide	1310-73-2	Yes	Yes	Yes	Yes	Yes
Disodium tetraborate pentahydrate	12179-04-3	Yes	Yes	No	No	No
Potassium hydroxide	1310-58-3	Yes	Yes	Yes	Yes	Yes

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

WARNING! This product can expose you to chemicals including ethylene glycol which are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.gov.

Canada Regulations

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all information required by the CPR. D2A, D2B.

Canadian WHMIS Ingredient Disclosure List (IDL)

Components of this material have been checked against the Canadian WHMIS Ingredients Disclosure List. The List is composed of chemicals which must be identified on MSDSs if they are included in products which meet WHMIS criteria specified in the Controlled Products Regulations and are present above the threshold limits listed on the IDL

Ethylene glycol 107-21-1, Sodium hydroxide 1310-73-2, Potassiu	m hyrdroxide 1310-58-3
1 %	

Component Analysis - Inventory

Ethylene glycol (107-21-1)

US	CA	AU	CN	I E	U	JP - ENCS	JP - ISHL		KR KECI - Annex 1	KR KECI - Annex 2		
Yes	DSL	Yes	Ye	s E	IN	Yes	Yes		Yes		Yes	No
KR -	REAC	Н ССА	1	MX	NZ	PH	TH-TECI	TW	VN (Draft)			
No	No		Yes	Yes	Yes	Yes	Yes	Yes				

Sodium hydroxide (1310-73-2)

US	CA	AU	CN	I E	U	JP - ENCS	JP - ISHL		KR KECI - Annex 1	KR KECI - Annex 2
Yes	DSL	Yes	Ye	es EIN		Yes	Yes		Yes	No
KR - REACH CCA			\	MX	NZ	РН	TH-TECI	TW	VN (Draft)	
Yes				Yes	Yes	Yes	Yes	Yes	Yes	

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Disodium tetraborate pentahydrate (12179-04-3)

US	CA	AU	CN	Е	U	JP - ENCS	JP - ISHL		KR KECI - Annex 1	KR KECI - Annex 2
No	No	No	Yes	N	O	Yes	Yes		No	No
KR -	KR - REACH CCA			ИΧ	NZ	РН	TH-TECI	TW	VN (Draft)	
No			1	lo	Yes	Yes	Yes	Yes	Yes	

Potassium hydroxide (1310-58-3)

US	CA	AU	CN	E	U	JP - ENCS	JP - ISHL		KR KECI - Annex 1	KR KECI - Annex 2
Yes	DSL	Yes	Yes	s EIN		Yes	Yes		Yes	No
KR -	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. Update to SDS format.

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; 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 LIstsTM -ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL -Maximum Exposure Limits; MX - Mexico; NDSL - Non-Domestic Substance List (Canada); NFPA -National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR -New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA -

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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; 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 NCI (Draft) - Vietnam National Chemicals Inventory (NCI) (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, Emerald 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.

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