



**ES COMPLEAT EG CONCENTRATE (ETHYLENE GLYCOL BASED
ANTIFREEZE)**

MSDS No.:LT16588

MSDS Revision Date (dd/mm/yyyy): 03/06/2009

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MATERIAL SAFETY DATA SHEET

SECTION 1: IDENTIFICATION

Product identifier : **ES COMPLEAT EG CONCENTRATE (ETHYLENE GLYCOL BASED ANTIFREEZE)**

Product Code(s) : CC2820 (1 Gallon / 3.785 L Bottle); CC2821 (55 gallon / 208 L Drum); CC2822 (Bulk); CC2847 (5 Gallon / 18.9 L Pail); CC2823 (Tote tanks).

Product Use : Concentrated antifreeze / coolant.

Chemical Family : Mixture.

Supplier's name and address:
Cummins Filtration
1200 Fleetguard Road
Cookeville, TN, U.S.A.
38506

Manufacturer's name and address:
Refer to Supplier

Information Telephone # : (931) 526-9551 (Hours of operation: 24 Hours per day, 7 days per week)

24 Hr. Emergency Tel # : Chemtrec 1-800-424-9300 (Within Continental U.S.); Chemtrec 703-527-3887 (Outside U.S.).

SECTION 2 - HAZARDS IDENTIFICATION

Classification : WHMIS classification:
Class D2A (Materials Causing Other Toxic Effects, Very Toxic Material).

OSHA: This material is classified as hazardous under OSHA regulations (29CFR 1910.1200). Hazardous classification:
Acute Health Hazard;
Chronic Health Hazard.

Emergency Overview : Blue liquid. No odour.
Warning! Harmful or fatal if swallowed. Harmful if absorbed through the skin. May cause nausea, vomiting, headache and other central nervous system effects. Could also cause convulsions, coma, respiratory arrest and death. Can cause kidney damage. May cause liver effects. Possible birth defect hazard - contains material that may cause birth defects, based on animal data.

POTENTIAL HEALTH EFFECTS:

Signs and symptoms of short-term (acute) exposure

Inhalation : Toxic in particulate form by inhalation. May cause irritation to the nose, throat and upper respiratory tract. If mists are inhaled, may cause tearing, general anesthesia, headache, coughing, respiratory stimulation, nausea, vomiting, pulmonary, kidney and liver damage.

Skin : May cause mild skin irritation. Product may be absorbed and cause symptoms similar to those listed for ingestion.

Eyes : May cause mild eye irritation. Symptoms may include inflammation and tearing.

Ingestion : Human poison by ingestion (lethal dose of Ethylene glycol for humans reported to be 100 mL). Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. Initially, the central nervous system is stimulated, followed by depression. Could cause cyanosis (bluish discoloration of the skin due to deficient oxygenation of the blood). May potentially result in lethal kidney damage. Could also cause convulsions, coma, respiratory arrest and death.

Effects of long-term (chronic) exposure

: Prolonged or repeated ingestion may cause bladder or kidney stones.

Carcinogenic status : See TOXICOLOGICAL INFORMATION, Section 11.

Additional health hazards : Potential teratogen. See TOXICOLOGICAL INFORMATION, Section 11.

Potential environmental effects : See ECOLOGICAL INFORMATION, Section 12.

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SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS #	Wt.%
Ethylene glycol	107-21-1	90.00 - 100.00
Diethylene glycol	111-46-6	0.10 - 1.00
Sodium nitrite	7632-00-0	0.10 - 0.50

SECTION 4 - FIRST AID MEASURES

- Inhalation** : Immediately remove person to fresh air. If breathing has stopped, give artificial respiration. Obtain medical attention if symptoms develop and persist.
- Skin contact** : Immediately flush with plenty of water, while removing contaminated clothing. If irritation persists, seek prompt medical attention. Launder clothing before reuse.
- Eye contact** : Immediately flush eye(s) with plenty of water. After initial flushing, remove any contact lenses if worn, and continue flushing for at least 5 to 10 minutes. If irritation persists, seek prompt medical attention.
- Ingestion** : Toxic if swallowed. Call a physician or Poison Control Centre immediately. Induce vomiting ONLY under the direct supervision of qualified medical personnel or a poison control centre. Never give anything by mouth to an unconscious person.
- Notes For Physician** : Prompt medical attention is important. Delayed treatment may result in fatality. This product is a CNS depressant. Use of ethanol may be helpful to counter the toxic effects of ethylene glycol by interfering with the absorption rate in the stomach and intestine.

SECTION 5 - FIRE FIGHTING MEASURES

Fire hazards/conditions of flammability

- : Not flammable under normal conditions of handling. However, may ignite if exposed to extreme heat and flame. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure. Vapours are heavier than air and collect in confined and low-lying areas.

Flammability classification (OSHA 29 CFR 1910.1200)

- : Combustible Liquid Class III B.

Oxidizing properties

- : None known.

Explosion data: Sensitivity to mechanical impact / static discharge

- : Not expected to be sensitive to mechanical impact or static discharge.

Suitable extinguishing media

- : Use media suitable to the surrounding fire such as water fog or fine spray, alcohol foams, carbon dioxide and dry chemical.

Special fire-fighting procedures/equipment

- : Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame.

Hazardous combustion products

- : Carbon oxides, formaldehyde and other irritating fumes and smoke.

NFPA Rating

- 0 - Minimal 1 - Slight 2 - Moderate 3 - Serious 4 - Severe
- : *Health:* 2 *Flammability:* 1 *Instability:* 0 *Special Hazards:* None

SECTION 6 - ACCIDENTAL RELEASE MEASURES

- Personal precautions** : Restrict access to area until completion of clean-up. Ensure clean-up is conducted by trained personnel only. All persons dealing with clean-up should wear the appropriate protective equipment including self-contained breathing apparatus. Refer to Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION, for additional information on acceptable personal protective equipment.



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- Environmental precautions** : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. If necessary, dike well ahead of the spill to prevent runoff into drains, sewers, or any natural waterway or drinking supply.
- Spill response/cleanup** : Remove all sources of ignition. Ventilate area of release. Stop spill or leak at source if safely possible. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13). Use plastic or aluminum shovels to transfer absorbed waste material into drums. Contaminated absorbent material may pose the same hazards as the spilled product. Notify the appropriate authorities as required.
- Prohibited materials** : Use non-flammable absorbent only.
- Special spill response procedures** : In case of a transportation accident, contact CHEMTREC at 1-800-424-9300 or International at 1-703-527-3887. If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8002).
 US CERCLA Reportable quantity (RQ): Ethylene glycol (5000 lbs / 2270 kg); Sodium nitrite (100 lbs. / 45.4 kg).

SECTION 7 - HANDLING AND STORAGE

- Safe Handling procedures** : This material is a harmful liquid. Wear suitable protective equipment during handling. Refer to Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION, for additional information on acceptable personal protective equipment. Use with adequate ventilation. Do not ingest. Avoid breathing vapour or mist. Avoid contact with eyes, skin and clothing. Wash with soap and water after handling. Keep away from extreme heat and flame. Keep away from acids and other incompatibles. Use caution when opening cap. Keep containers tightly closed when not in use. Empty containers retain residue (liquid and/or vapour) and can be dangerous. Keep out of the reach of children.
- Storage requirements** : Store in a cool, dry, well-ventilated area. Store away from areas of excessive heat, open flames, sparks, and other possible sources of ignition. Keep away from incompatibles. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area.
- Incompatible materials** : Strong oxidizing agents; Strong acids; Strong alkalis; Halogenated compounds; Alkali metals; Ketones.
- Special packaging materials** : Always keep in containers made of the same materials as the supply container.

SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

<u>Ingredients</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Ethylene glycol	100 mg/m3 (ceiling)	N/Av	*50 ppm (125 mg/m3) (ceiling)	N/Av
Diethylene glycol	*10 mg/m3	N/Av	N/Av	N/Av
Sodium nitrite	N/Av	N/Av	N/Av	N/Av

*Note: The OSHA PEL listed above for Ethylene glycol is a final rule / vacated value. The ACGIH TLV listed above for Diethylene glycol is an AIHA WEEL.

- Ventilation and engineering measures** : Use sufficient mechanical ventilation to maintain exposures below the TLV.
- Respiratory protection** : No special precautions required. Respiratory protection is required if the concentrations exceed the TLV. NIOSH-approved respirators are recommended. Seek advice from respiratory protection specialists. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02.

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- Skin protection** : Gloves impervious to the material are recommended. Advice should be sought from glove suppliers.
- Eye / face protection** : Chemical splash goggles are recommended. A full face shield may also be necessary.
- Other protective equipment** : Emergency showers and eyewash facilities should be nearby. Wear a chemically resistant apron and long sleeves when dispensing, to prevent skin contact.
- General hygiene considerations** : Avoid breathing vapour or mist. Avoid contact with eyes, skin and clothing. When using do not eat or drink. When using do not smoke. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical state	: Liquid.	Appearance	: Blue liquid.
Odour	: No odour.	Odour threshold	: 25 ppm (Ethylene glycol)
pH	: 9.4 - 10.0 (100%); 10.2 - 10.8 (50%)		
Boiling point	: 195°C / 383°F	Specific gravity	: 1.11 - 1.14
Melting/Freezing point	: N/Av	Coefficient of water/oil distribution	: N/Av
Vapour pressure (mmHg @ 20° C / 68° F)	: 0.05	Solubility in water	: Complete
Vapour density (Air = 1)	: 2.1	Evaporation rate (n-Butyl acetate = 1)	: N/Av
Volatile organic Compounds (VOC's)	: N/Av	Volatiles (% by weight)	: N/Av
Flash point	: 111°C / 232°F		
Flash point Method	: COC	Auto-ignition temperature	: N/Av
Lower flammable limit (% by vol.)	: 3.2	Upper flammable limit (% by vol.)	: 15.3
Flame Projection Length	: N/Av	Flashback observed	: N/Av

Section 10: Stability And Reactivity

- Stability and reactivity** : Stable under the recommended storage and handling conditions prescribed.
- Hazardous polymerization** : Will not occur.
- Conditions to avoid** : Avoid excessive heat, sparks and open flame. Do not use in areas without adequate ventilation.
- Materials To Avoid And Incompatibility** : Incompatible materials (see Section 7).
- Hazardous decomposition products** : None known, refer to hazardous combustion products in Section 5.

SECTION 11 - TOXICOLOGICAL INFORMATION

- Target organs** : Eyes, skin, respiratory system, central nervous system, liver and kidneys.
- Routes of exposure** : *Inhalation*: YES *Skin Absorption*: YES *Skin & Eyes*: YES *Ingestion*: YES
- Toxicological data** : There is no available data for the product itself, only for the ingredients. See below for individual ingredient acute toxicity data.

Ingredients	LC₅₀(4hr) inh, rat	LD₅₀	
		(Oral, rat)	(Rabbit, dermal)
Ethylene glycol	2725 mg/m ³ (aerosol)	4000 mg/kg	9530 uL/kg
Diethylene glycol	> 4600 mg/m ³ (aerosol)	12,565 mg/kg (rat); 2688 mg/kg (rabbit)	13,300 mg/kg
Sodium nitrite	5500 mg/m ³	85 mg/kg	N/Av

Carcinogenic status : No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.

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- Reproductive effects** : None known.
- Teratogenicity** : Contains ethylene glycol, which may cause teratogenic effects at doses which are not maternally toxic, based on animal data.
- Mutagenicity** : None known.
- Epidemiology** : Not available.
- Sensitization to material** : None known.
- Synergistic materials** : Not available.
- Irritancy** : Mild.
- other important hazards** : CNS depression may result from extreme exposures.
- Conditions aggravated by overexposure** : Pre-existing skin or eye disorders, and impaired liver or kidney functions.




SECTION 12 - ECOLOGICAL INFORMATION

- Ecotoxicity** : No data is available on the product itself. The ecological characteristics of this product have not been fully investigated. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters.
- Mobility** : No information available.
- Persistence** : No information available.
- Bioaccumulation potential** : No information available.
- Other Adverse Environmental effects** : No information available.

SECTION 13 - DISPOSAL CONSIDERATIONS

- Handling for Disposal** : Handle waste according to recommendations in Section 7.
- Methods of Disposal** : Dispose in accordance with all applicable federal, state, provincial and local regulations. Contact your local, state, provincial or federal environmental agency for specific rules.
- RCRA** : If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

SECTION 14: TRANSPORT INFORMATION

Regulatory Information	UN Number	Shipping Name	Class	Packing Group	Label
49CFR/DOT	None	Not regulated.	Not regulated	none	
49CFR/DOT Additional information	If the quantity of Ethylene glycol is greater than 5000 pounds per container, the following DOT shipping description applies: If the quantity of Sodium nitrite is greater than 100 lbs. (45.4 kg) per package, the following DOT shipping description applies: RQ Environmentally hazardous substances, liquid, n.o.s. (Contains: Ethylene glycol; Sodium nitrite), 9, UN3082, III.				
TDG	None	Not regulated.	Not regulated	-None-	
TDG Additional information	None.				
ICAO/IATA	None	Not regulated.	Not regulated	-None-	
ICAO/IATA Additional information	None.				



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IMDG	None	Not regulated.	Not regulated	-None-	
IMDG Additional information	None.				

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

TSCA: All listed ingredients appear on the Toxic Substances Control Act (TSCA) inventory.

CERCLA Reportable Quantity (RQ) (40 CFR 117.302): Ethylene glycol (5000 lbs / 2270 kg); sodium nitrite (100 lbs. / 45.4 kg).

SARA TITLE III: Sec. 302, Extremely Hazardous Substances, 40 CFR 355: No Extremely Hazardous Substances are present in this material.

SARA TITLE III: Sec. 311 and 312, MSDS Requirements, 40 CFR 370 Hazard Classes: Immediate (Acute) health hazard; Chronic health hazard. Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds for the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SARA TITLE III: Sec. 313, Toxic Chemicals Notification, 40 CFR 372: This product may be subject to SARA notification requirements, since it contains Toxic Chemical constituents above their de minimus concentrations. This product contains: Ethylene glycol.

US State Right to Know Laws:

New Jersey Labeling Requirements: This product contains the following substances required to be disclosed on product labeling: Ethylene glycol (CAS # 107-21-1); Water (CAS # 7732-18-5); Dipotassium phosphate (CAS # 7758-11-4); Diethylene glycol (CAS # 111-46-6); sodium nitrite (CAS # 7632-00-0); Sodium tetraborate, anhydrous (CAS # 1330-43-4); Sodium molybdate (CAS # 7631-95-0). Ethylene glycol is considered a hazardous substance in the State of New Jersey.

California Proposition 65: This product contains chemicals known to the State of California to cause cancer and/or reproductive harm. This product contains trace amounts of: 1,4-Dioxane; Ethylene oxide; Acetaldehyde.

International Information:

WHMIS information: This product is a WHMIS Controlled Product. It meets one or more of the criteria for a controlled product provided in Part IV of the Canadian Controlled Products Regulations (CPR). Refer to Section 2 for a WHMIS Classification for this product.

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

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

SECTION 16 - OTHER INFORMATION

HMIS Rating : * - Chronic hazard 0 - Minimal 1 - Slight 2 - Moderate 3 - Serious 4 - Severe
*Health: *2 Flammability: 1 Reactivity: 0*

Legend : ACGIH: American Conference of Governmental Industrial Hygienists
 AIHA: American Industrial Hygiene Association
 CAS: Chemical Abstract Services
 CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
 CFR: Code of Federal Regulations
 CSA: Canadian Standards Association
 DOT: Department of Transportation
 EPA: Environmental Protection Agency
 HMIS: Hazardous Materials Identification System

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HSDB: Hazardous Substances Data Bank
 IARC: International Agency for Research on Cancer
 IATA: International Air Transport Association
 ICAO: International Civil Aviation Organisation
 IMDG: International Maritime Dangerous Goods
 Inh: Inhalation
 LC: Lethal Concentration
 LD: Lethal Dose
 N/Ap: Not Applicable
 N/Av: Not Available
 NFPA: National Fire Protection Association
 NIOSH: National Institute of Occupational Safety and Health
 NTP: National Toxicology Program
 OSHA: Occupational Safety and Health Administration
 PEL: Permissible exposure limit
 RCRA: Resource Conservation and Recovery Act
 RTECS: Registry of Toxic Effects of Chemical Substances
 SARA: Superfund Amendments and Reauthorization Act
 STEL: Short Term Exposure Limit
 TLV: Threshold Limit Values
 TWA: Time Weighted Average
 WEEL: Workplace Environmental Exposure Level
 WHMIS: Workplace Hazardous Materials Identification System

References

1. ACGIH, Threshold Limit Values and Biological Exposure Indices for 2008.
2. International Agency for Research on Cancer Monographs, searched 2009.
3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases, 2009 (Chempendium and RTECs).
4. Material Safety Data Sheet from manufacturer.
5. US EPA Title III List of Lists - October 2006 version.
6. California Proposition 65 List - December 19, 2008 version.

<p>Prepared for: Cummins Filtration Cookeville, Tennessee, U.S.A., 38506 Telephone: (931) 526-9551 http://www.cumminsfiltration.com/html/en/index.html Please direct all enquiries to Cummins Filtration.</p>	
<p>Prepared by: ICC The Compliance Center Inc. Canada: 1-888-977-4834 USA: 1-888-442-9628 http://www.thecompliancecenter.com</p>	

DISCLAIMER OF LIABILITY

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Revision Information

: Sections 2 and 3, switched.
(M)SDS sections updated: 2. HAZARDS IDENTIFICATION; 3.
COMPOSITION/INFORMATION ON INGREDIENTS; 5. FIRE-FIGHTING MEASURES;
8. EXPOSURE CONTROLS / PERSONAL PROTECTION; 9. PHYSICAL AND
CHEMICAL PROPERTIES; 11. TOXICOLOGICAL INFORMATION; 15.
REGULATORY INFORMATION.

END OF DOCUMENT