1. Product and Company Identification

Product identifier: ES COMPLEAT EG CONCENTRATE (Ethylene glycol based antifreeze)

Version # 01

Issue date: 02-27-2015

CAS # Mixture

Product code: CC2820, CC2821, CC2822, CC2847, CC2823

MSDS Number: LT16588

Product use: Concentrated antifreeze / coolant.

Manufacturer information:
Cummins Filtration
1200 Fleetguard Road
Cookeville, TN 38506
United States

24 Hours per day 1-800-22FILTER (1-800-223-4583)
Within Continental U.S. Chemtrec 1-800-424-9300
Outside U.S. Chemtrec 703-527-3887

Supplier: Not available.

2. Hazards Identification

Emergency overview: DANGER!

TOXIC. Can cause adverse reproductive effects - such as birth defects, miscarriages, or infertility. Prolonged exposure may cause chronic effects.

Potential health effects:

Routes of exposure:
- Inhalation
- Ingestion
- Skin contact
- Eye contact

Eyes: Contact with eyes may cause irritation. Avoid contact with eyes.

Skin: May cause skin irritation. Avoid contact with the skin. May be absorbed and cause symptoms similar to those listed for ingestion.

Inhalation: May cause irritation of respiratory tract. Prolonged inhalation may be harmful. Avoid breathing dust/fume/gas/mist/vapors/spray.

Ingestion: Components of the product may be absorbed into the body by ingestion. Irritating. May cause nausea, stomach pain and vomiting. Do not ingest. Human poison by ingestion (lethal dose of Ethylene glycol for humans reported to be 100 mL). Symptoms of poisoning may include cyanosis (bluish discolouration of the skin), nausea, dizziness, rapid heartbeat, irregular breathing, coma and death. Initially, the central nervous system is stimulated, followed by depression.

Target organs: Central nervous system. Eyes. Respiratory system. Skin.

Chronic effects: Sterility. Pregnant women or women of child-bearing age should not be exposed to this product. Can cause adverse reproductive effects - such as birth defects, miscarriages, or infertility. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. May potentially result in lethal kidney damage. Prolonged or repeated ingestion may cause bladder or kidney stones.

Most important symptoms/effects, acute and delayed: Not available.

Potential environmental effects: May cause long-term adverse effects in the environment.

3. Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS #</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene Glycol</td>
<td>107-21-1</td>
<td>90.0-100.0</td>
</tr>
<tr>
<td>Sodium Borate</td>
<td>1330-43-4</td>
<td>0.1-0.5</td>
</tr>
<tr>
<td>Other components below reportable levels</td>
<td>2.414</td>
<td></td>
</tr>
</tbody>
</table>
4. First Aid Measures

First aid procedures

**Inhalation**
Move to fresh air. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician or poison control center immediately.

**Skin contact**
Remove and isolate contaminated clothing and shoes. Immediately flush skin with plenty of water. Call a physician or poison control center immediately. For minor skin contact, avoid spreading material on unaffected skin. Wash clothing separately before reuse.

**Eye contact**
Immediately flush eyes with plenty of water for at least 15 minutes. If a contact lens is present, DO NOT delay irrigation or attempt to remove the lens. Continue rinsing. Call a physician or poison control center immediately.

**Ingestion**
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth thoroughly. Never give anything by mouth to a victim who is unconscious or having convulsions. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Notes to physician
Symptoms may be delayed.

General advice
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire Fighting Measures

**Flammable properties**
Not flammable by WHMIS criteria.

**Extinguishing media**
- Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

**Fire fighting equipment/instructions**
Not available.

**Explosion data**
- Sensitivity to static discharge: Not available.
- Sensitivity to mechanical impact: Not available.

**Hazardous combustion products**
Not available.

6. Accidental Release Measures

**Personal precautions**
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. For personal protection, see section 8 of the MSDS.

**Environmental precautions**
Do not contaminate water.

**Methods and materials for containment and cleaning up**
Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Use water spray to reduce vapors or divert vapor cloud drift. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the MSDS.

**Other information**
Clean up in accordance with all applicable regulations.
7. Handling and Storage

Handling
Do not breathe mist or vapor. Do not get this material in contact with eyes. Do not get this material in contact with skin. Avoid prolonged exposure. Do not get this material on clothing. Do not use in areas without adequate ventilation. Wash thoroughly after handling. Avoid release to the environment.

Storage
Keep locked up. Store in a closed container away from incompatible materials. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the MSDS). Keep away from food, drink and animal feedingstuffs.

8. Exposure Controls / Personal Protection

Occupational exposure limits

<table>
<thead>
<tr>
<th>US. ACGIH Threshold Limit Values</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Components</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethylene Glycol (CAS 107-21-1)</td>
<td>Ceiling</td>
<td>100 mg/m³</td>
<td>Aerosol.</td>
</tr>
<tr>
<td>Sodium Borate (CAS 1330-43-4)</td>
<td>STEL</td>
<td>6 mg/m³</td>
<td>Inhalable fraction.</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>2 mg/m³</td>
<td>Inhalable fraction.</td>
</tr>
</tbody>
</table>

Biological limit values
No biological exposure limits noted for the ingredient(s).

Engineering controls
Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye/face protection
Wear safety glasses with side shields (or goggles).

Skin protection
Wear chemical protective equipment that is specifically recommended by the manufacturer. It may provide little or no thermal protection.

Respiratory protection
Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

Hand protection
Wear protective gloves.

9. Physical & Chemical Properties

Appearance

Physical state     Liquid.
Form               Liquid.
Color              Blue
Odor               Characteristic odour.
Odor threshold     Not available.
pH                 9.4 - 10 (100%); 10.2 - 10.8 (50%)
Vapor pressure     0.05 mm Hg @ 20°C
Vapor density      2.1
Boiling point      383 °F (195 °C)
Melting point/Freezing point  Not available.
Solubility (water) completely miscible
Specific gravity   1.11 - 1.14
Relative density   Not available.
Flash point        231.8 °F (111.0 °C) Open Cup
Flammability limits in air, upper, % by volume  15.3
Flammability limits in air, lower, % by volume  3.2
Auto-ignition temperature Not available.
Evaporation rate   Not available.
10. Chemical Stability & Reactivity Information

**Chemical stability**
Material is stable under normal conditions.

**Conditions to avoid**
Avoid temperatures exceeding the flash point. Contact with incompatible materials.

**Incompatible materials**
Strong oxidizing agents.

**Hazardous decomposition products**
Not available.

**Possibility of hazardous reactions**
Not available.

11. Toxicological Information

**Toxicological data**

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ethylene Glycol (CAS 107-21-1)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Dermal</em></td>
<td>Rabbit</td>
<td>9530 mg/kg</td>
</tr>
<tr>
<td><em>Inhalation</em></td>
<td>Rat</td>
<td>10.92 mg/l, 4 hours</td>
</tr>
<tr>
<td><em>Oral</em></td>
<td>Human</td>
<td>1110 - 1665 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Rat</td>
<td>4000 mg/kg</td>
</tr>
<tr>
<td><strong>Sodium Borate (CAS 1330-43-4)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Dermal</em></td>
<td>Rabbit</td>
<td>&gt; 2000 mg/kg</td>
</tr>
<tr>
<td><em>Inhalation</em></td>
<td>Rat</td>
<td>&gt; 2.04 mg/l/4h</td>
</tr>
<tr>
<td><em>Oral</em></td>
<td>Rat</td>
<td>1200 mg/kg</td>
</tr>
</tbody>
</table>

**Acute effects**
Not expected to be a skin or respiratory sensitizer.

**Chronic effects**
Prolonged inhalation may be harmful. Not expected to be hazardous by WHMIS criteria.

**Carcinogenicity**

ACGIH Carcinogens
- Ethylene Glycol (CAS 107-21-1) A4 Not classifiable as a human carcinogen.
- Sodium Borate (CAS 1330-43-4) A4 Not classifiable as a human carcinogen.

**Skin corrosion/irritation**
Not available.

**Serious eye damage/irritation**
Not available.

**Mutagenicity**
Not expected to be hazardous by WHMIS criteria.

**Reproductive effects**
Hazardous by WHMIS criteria. Can cause adverse reproductive effects - such as birth defects, miscarriages, or infertility.

**Teratogenicity**
Not expected to be hazardous by WHMIS criteria.

**Most important symptoms/effects, acute and delayed**
Not available.

**Further information**
Reproductive toxicity. Symptoms may be delayed.
12. Ecological Information

### Ecotoxicological data

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene Glycol (CAS 107-21-1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td>LC50</td>
<td>Rainbow trout (Oncorhynchus mykiss)</td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td>LC50</td>
<td>Water flea (Daphnia magna)</td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td>IC50</td>
<td>Green algae (Selenastrum capricornutum)</td>
</tr>
<tr>
<td><strong>NOEC</strong></td>
<td>NOEC</td>
<td>Green algae (Selenastrum capricornutum)</td>
</tr>
<tr>
<td>Sodium Borate (CAS 1330-43-4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td>EC50</td>
<td>Green algae (Selenastrum capricornutum)</td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td>EC50</td>
<td>Water flea (Daphnia magna)</td>
</tr>
<tr>
<td><strong>Fish</strong></td>
<td>LC50</td>
<td>Fathead minnow (Pimephales promelas)</td>
</tr>
<tr>
<td><strong>Chronic</strong></td>
<td>NOEC</td>
<td>Water flea (Daphnia magna)</td>
</tr>
<tr>
<td><strong>Fish</strong></td>
<td>NOEC</td>
<td>Japanese rice fish (Oryzias latipes)</td>
</tr>
</tbody>
</table>

### Ecotoxicity

Contains a substance which causes risk of hazardous effects to the environment. Do not allow this material to drain into sewers/water supplies.

### Environmental effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

### Aquatic toxicity

Not available.

### Persistence and degradability

Not available.

### Bioaccumulation / accumulation

<table>
<thead>
<tr>
<th>Bioaccumulative potential</th>
<th>Bioconcentration factor</th>
<th>Ethylene Glycol</th>
<th>10</th>
</tr>
</thead>
</table>

### Partition coefficient

| Ethylene Glycol             | -1.36 |

### Mobility in environmental media

This product is miscible in water.

13. Disposal Considerations

### Disposal instructions

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Dispose in accordance with all applicable regulations.

### Waste from residues / unused products

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

### Contaminated packaging

Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport Information

### TDG

Not regulated as dangerous goods.

### IATA

Not regulated as dangerous goods.
IMDG
Not regulated as dangerous goods.

15. Regulatory Information

Canadian regulations
This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS status
Controlled

WHMIS classification
D1B - Immediate/Serious-TOXIC
D2A - Other Toxic Effects-VERY TOXIC
D2B - Other Toxic Effects-TOXIC

WHMIS labeling

International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>No</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>No</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>No</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>No</td>
</tr>
</tbody>
</table>

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s) A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other Information

HMIS® ratings
Health: 2*
Flammability: 1
Physical hazard: 0

NFPA ratings
Health: 2
Flammability: 1
Instability: 0

Disclaimer
Prepared by: ICC The Compliance Center Inc. 1-888-442-9628
http://www.thecompliancecenter.com

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This data sheet contains changes from the previous version in section(s):

Bibliography
Legend to abbreviations and acronyms used in the SDS

Material name: ES COMPLEAT EG CONCENTRATE (Ethylene glycol based antifreeze)
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