



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product identifier	ES COMPLEAT PG PREMIX (Propylene glycol based coolant)
Other means of identification	
MSDS number	LT16589
Product code	CC2835 (1 gallon / 3.785 L of 50/50); CC2836 (55 gallon / 208 L of 50/50); CC2837 (Bulk of 50/50); CC2850 (5 gallon / 18.9 L of 50/50); CC2838 (275 gallon / 1040 L Tote tanks)
Product use	Premixed, extended life coolant, especially for use in heavy-duty diesel engines.
Chemical family	Mixture of: Water; glycol; Mixture of inorganic salts.
Manufacturer	
Company name	Cummins Filtration
Address	1200 Fleetguard Road Cookeville, TN, U.S.A. 38506
Telephone	(931) 526 9551
Website	www.cumminsfiltration.com
E-Mail	fleetmaster.us@cummins.com
Supplier information	Refer to Manufacturer
Emergency phone number	Chemtrec 1-800-424-9300 (Within Continental U.S.); Chemtrec 703-527-3887 (Outside U.S.).

2. Hazard(s) Identification

Emergency overview	Blue liquid. Little or no odour. Caution! Ingestion of large amounts may be harmful. Ingestion of large amounts may cause nausea, vomiting, diarrhea, as well as depression of the central nervous system. Prolonged or repeated skin contact may cause drying and irritation. May cause minor eye irritation. Possible reproductive hazard. Contains material that may cause adverse reproductive effects, based on animal data.
Potential health effects	
Routes of exposure	
Routes of entry skin & eye	May be mildly irritating to eyes and skin.
Routes of entry skin absorption	Not expected to be absorbed through the skin.
Routes of entry inhalation	Mild respiratory irritant
Routes of entry ingestion	May cause gastrointestinal irritation.
Target organs	Eyes, skin, respiratory system, central nervous system, liver and kidneys.
Chronic effects	Prolonged overexposure may cause slight kidney effects, such as increased organ weight. For further information, please refer to section 11 of the MSDS.
Most important symptoms/effects, acute and delayed	May damage fertility or the unborn child. Contains chemicals that may cause male reproductive toxicity and developmental toxicity. This product contains: Sodium tetraborate. Direct eye contact may cause slight or mild, transient irritation. Symptoms may include redness, pain, tearing and conjunctivitis. Direct skin contact may cause temporary redness. Inhalation of mists or sprays may mildly irritate the upper respiratory tract and cause coughing or sneezing. Prolonged overexposure may cause slight kidney effects, such as increased organ weight. Ingestion of larger amounts may cause defects to the central nervous system (e.g. dizziness, headache).
Potential environmental effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. See Section 12 for more environmental information.

3. Composition/information on ingredients

Mixture

Chemical name	CAS #	Percent
Propylene glycol	57-55-6	40.0 - 55.0
Sodium nitrite	7632-00-0	0.1 - 0.3
Sodium tetraborate	1330-43-4	0.1 - 0.2

4. First Aid Measures

First aid procedures

Inhalation	Move to fresh air. If breathing is difficult, give oxygen by qualified medical personnel only. If breathing has stopped, give artificial respiration. If irritation or symptoms develop, seek medical attention.
Skin contact	Immediately flush with plenty of water, while removing contaminated clothing. If irritation or symptoms develop, seek medical attention.
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 or symptoms develop, seek medical attention.
Ingestion	Do not induce vomiting. Never give anything by mouth if victim is unconscious. Get medical attention.

Notes to physician

Provide general supportive measures and treat symptomatically.

General Information

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

Suitable extinguishing media	Use media suitable to the surrounding fire such as water fog or fine spray, alcohol foams, carbon dioxide and dry chemical.
Unsuitable extinguishing media	None known.

Protection of firefighters

Specific hazards arising from the chemical	Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure. Toxic fumes may be released during a fire.
Protective equipment for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode.

Fire fighting equipment/instructions

Move containers from fire area if safe to do so. Use water spray to keep containers cool. Do not allow run-off from fire fighting to enter drains or water courses. Dike for water control.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.

Explosion data

Sensitivity to static discharge	Not expected to be sensitive to static discharge.
Sensitivity to mechanical impact	Not expected to be sensitive to mechanical impact.

Hazardous combustion products

Carbon oxides; Nitrogen oxides (NOx); phosphorus oxides; Boron and compounds.

General fire hazards

Not flammable under normal conditions of handling.



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6. Accidental Release Measures

Personal precautions	Restrict access to area until completion of clean-up. Keep all other personnel upwind and away from the spill/release. Ensure clean-up is conducted by trained personnel only. All persons dealing with the clean-up should wear the appropriate personal protective equipment. Refer to protective measures listed in sections 7 and 8.
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.
Methods and materials for containment and cleaning up	<p>Ventilate the area. Stop the spill at source if it is safe to do so. Eliminate all ignition sources.</p> <p>Clean-up methods - small spillage: Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand). Pick up and transfer to properly labelled containers. Never return spills in original containers for re-use. Contaminated absorbent material may pose the same hazards as the spilled product.</p> <p>Clean-up methods - large spillage: Contain spilled liquid with non-combustible, inert absorbent material (e.g. sand). Remove liquid by pumps or vacuum equipment. Keep in properly labelled containers.</p> <p>Notify the appropriate authorities as required. Refer to Section 13 for disposal of contaminated material.</p>
Other information	Clean up in accordance with all applicable regulations.

7. Handling and Storage

Handling	Wear suitable protective equipment during handling. Use with adequate ventilation. Avoid breathing mist or vapours. Avoid contact with eyes, skin and clothing. 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. Wash thoroughly after handling. Keep out of the reach of children.
Storage	Store in a cool, dry, well-ventilated area. 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. Store locked up. Keep out of the reach of children. Do not store near any incompatible materials (see Section 10).

8. Exposure Controls / Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

	Type	Value
Propylene glycol (CAS 57-55-6)	TWA	10 mg/m ³ (AIHA WEEL)
Sodium tetraborate (CAS 1330-43-4)	STEL	6 mg/m ³ (inhalable fraction, listed under Borate compounds, inorganic)
	TWA	2 mg/m ³ (inhalable fraction, listed under Borate compounds, inorganic)

Biological limit values

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

Engineering controls

Provide adequate ventilation. Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. In case of insufficient ventilation wear suitable respiratory equipment.

Personal protective equipment

Eye / face protection

Chemical splash goggles are recommended.

Skin protection

Gloves impervious to the material are recommended. Advice should be sought from glove suppliers. Wear sufficient clothing to prevent skin contact. Where extensive exposure to product is possible, use resistant coveralls, apron and boots to prevent contact.

Respiratory protection

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 CSA Z94.4-02.

Hand protection

Ensure that eyewash stations and safety showers are close to the workstation location. Other equipment may be required depending on workplace standards.

9. Physical and chemical properties

Appearance

Physical state

Liquid.

Form

Thin liquid.

Colour

blue

Odour

Little or no odour.

Odour threshold

N/Av

pH

Melting point /freezing point

N/Av

Initial boiling point and boiling range

106°C (222.8°F)

Flash point

N/Av

N/Av

Evaporation rate

N/Av

Flammability (solid, gas)

N/Av

Lower flammability/explosive limit

N/Av

Upper flammability/explosive limit

N/Av

Vapour pressure

N/Av

Vapour density

N/Av

Relative density

1.03 - 1.06

Solubility(ies)

Other solubility(ies)

N/Av

Solubility (water)

Complete

Partition coefficient (n-octanol/water)

N/Av

Auto-ignition temperature

N/Av

Decomposition temperature

N/Av

Viscosity

N/Av

Other information

Explosive properties

Not explosive

Oxidizing properties

None known.

Specific gravity

1.03 - 1.06

VOC

N/Av

Volatilities %

N/Av

Other physical/chemical data No additional information.

10. Stability and reactivity

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability Stable under the recommended storage and handling conditions prescribed.

Possibility of hazardous reactions No dangerous reaction known under conditions of normal use. Hazardous polymerization does not occur.

Conditions to avoid Keep away from extreme heat and flame. Do not use in areas without adequate ventilation. Avoid contact with incompatible materials.

Incompatible materials Strong oxidizing agents; Strong acids; Strong bases.

Hazardous decomposition products None known, refer to hazardous combustion products in Section 5.

11. Toxicological information

Toxicological data

Components	Species	Test Results
Propylene glycol		
Acute		
<i>Dermal</i>		
LD50	Rabbit	20 800 mg/kg
<i>inhalation</i>		
LC50	Rat	> 158 mg/L (aerosol)
<i>Oral</i>		
LD50	Rat	21 800 mg/kg
Sodium nitrite		
Acute		
<i>Dermal</i>		
LD50	Rabbit	N/Av
<i>inhalation</i>		
LC50	Rat	5.5 mg/L (dust)
<i>Oral</i>		
LD50	Rat	180 mg/kg
Sodium tetraborate		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg (No mortality)
<i>inhalation</i>		
LC50	Rat	> 2.04 mg/L (dust) (No mortality)
<i>Oral</i>		
LD50	Rat	3225 - 5560 mg/kg

Acute effects May be mildly irritating to skin, eyes and respiratory system. May cause gastrointestinal irritation. May cause central nervous system depression. See data above for individual ingredient acute toxicity data.

Senitization Not expected to be a skin or respiratory sensitizer.

Chronic effects Prolonged overexposure may cause slight kidney effects, such as increased organ weight. For further information, please refer to section 11 of the MSDS.

Carcinogenicity No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP. See below for ingredients present on regulatory lists.



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ACGIH Carcinogenicity

Sodium tetraborate(CAS 1330-43-4) A4 - Not Classifiable as a Human Carcinogen (listed under Borate compounds, inorganic)

Skin corrosion/irritation May cause mild skin irritation.

Serious eye damage/irritation May cause mild eye irritation.

Mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Reproductive effects May damage fertility.
 Contains: Sodium tetraborate, anhydrous. The data regarding subchronic and chronic oral exposure to boric acid or borax (Disodium tetraborate, anyhydrous) in laboratory animals have demonstrated reproductive toxicity. Available animal data indicates that this substance has toxic effects on the male reproductive tract. Testicular lesions have been observed in rats, mice, and dogs administered boric acid or borax in food or drinking-water (INTERNATIONAL PROGRAMME ON CHEMICAL SAFETY Environmental Health Criteria document # 204).

Teratogenicity May damage the unborn child.
 Contains: Disodium tetraborate, anhydrous. Sodium tetraborate has been investigated as a developmental hazard.

Most important symptoms/effects, acute and delayed May damage fertility or the unborn child. Contains chemicals that may cause male reproductive toxicity and developmental toxicity. This product contains: Sodium tetraborate. Direct eye contact may cause slight or mild, transient irritation. Symptoms may include redness, pain, tearing and conjunctivitis. Direct skin contact may cause temporary redness. Inhalation of mists or sprays may mildly irritate the upper respiratory tract and cause coughing or sneezing. Prolonged overexposure may cause slight kidney effects, such as increased organ weight. Ingestion of larger amounts may cause defects to the central nervous system (e.g. dizziness, headache).

Further information None known or reported by the manufacturer.

12. Ecological information

Ecotoxicity data:				
Components	CAS No	Toxicity to Fish		
		LC50 / 96h	NOEC / 21 day	M Factor
Propylene glycol	57-55-6	46 500 mg/L (Fathead minnow)	N/Av	None.
Sodium nitrite	7632-00-0	0.54 mg/L (Rainbow trout)	N/Av	1
Sodium tetraborate	1330-43-4	79.7 mg/L (Fathead minnow) (Read-across)	6.4 mg/L/34 days (Zebra fish) (Read-across)	None.

Components	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
Propylene glycol	57-55-6	43 500 mg/L (Daphnia magna)	N/Av	None.
Sodium nitrite	7632-00-0	15.4 mg/L (Daphnia magna)	N/Av	None.
Sodium tetraborate	1330-43-4	91 mg/L Ceriodaphnia (water flea)	10.8 mg/L (Read-across)	None.

Components	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Propylene glycol	57-55-6	19 000 mg/L/96hr (Green algae)	N/Av	None.
Sodium nitrite	7632-00-0	≥ 100 mg/L/72hr (Green algae)	100 mg/L/72hr	None.
Sodium tetraborate	1330-43-4	52.4 mg/L/72hr (Green algae) (Read-across)	17.5 mg/L/72hr (Read-across)	None.

Ecotoxicity There is no data available for this product.

See the following tables for individual ingredient ecotoxicity data.

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

Aquatic toxicity No data is available on the product itself. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters.

Persistence and degradability
 No data is available on the product itself.
 The following ingredients are considered to be readily biodegradable: Propylene glycol; sodium nitrite.
 Contains the following chemicals which are not readily biodegradable: Sodium tetraborate.

Bioaccumulation / accumulation
 No data is available on the product itself.
 See the following data for ingredient information.

<u>Components</u>	<u>Partition coefficient n-octanol/water (log Kow)</u>	<u>Bioconcentration factor (BCF)</u>
Propylene glycol (CAS 57-55-6)	- 1.41 to - 0.3	1.4
Sodium nitrite (CAS 7632-00-0)	- 3.7	3.162 (estimated)
Sodium tetraborate (CAS 1330-43-4)	N/Av	121 (alga)

Mobility in soil No data is available on the product itself.

13. Disposal consideration

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose in accordance with all applicable federal, state, provincial and local regulations.

Waste from residues / unused products Dispose of contents/container in accordance with local regulation. This material and its container must be disposed of in a safe way.

Contaminated packaging Empty containers should be taken for local recycling or waste 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
ICAO/IATA
Not regulated as dangerous goods
IMDG
Not regulated as dangerous goods

General information This product does not meet the criteria for an environmentally hazardous mixture, according to the IMDG Code. See Section 12 for more environmental information.

15. Regulatory information

Canadian regulations

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.

WHMIS status

Controlled

WHMIS classification

D2A - Other toxic effects - Very toxic

WHMIS labeling



International Inventories

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

Components listed below are present on the following International Inventory lists:

<u>Ingredients</u>	<u>CAS #</u>	<u>European EINECs</u>	<u>Australia AICS</u>	<u>Philippines PICCS</u>	<u>Japan ENCS</u>	<u>Korea KECI/KECL</u>	<u>China IECSC</u>	<u>NewZealand IOC</u>
Propylene glycol	57-55-6	200-338-0	Present	Present	(2)-234	KE-29267	Present	May be used as a single component chemical under an appropriate group standard
Sodium nitrite	7632-00-0	231-555-9	Present	Present	(1)-483	KE-31546	Present	HSR001286
Sodium tetraborate	1330-43-4	215-540-4	Present	Present	(1)-69	KE-12384	Present	HSR002799

16. Other information, including date of preparation or last revision

NFPA Rating

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

HMIS Rating

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

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Version

1

Legend

ACGIH: American Conference of Governmental Industrial Hygienists
 AICS: Australian Inventory of Chemical Substances
 CAS: Chemical Abstract Services
 CEPA: Canadian Environmental Protection Act
 COC: Cleveland Open Cup
 CSA: Canadian Standards Association
 EC50: Effective Concentration 50%.
 EINECS: European Inventory of Existing Commercial chemical Substances
 HMIS: Hazardous Materials Identification System
 HSDB: Hazardous Substances Data Bank
 IARC: International Agency for Research on Cancer
 IATA: International Air Transport Association
 IBC: Intermediate Bulk Container
 ICAO: International Civil Aviation Organisation
 IECSC: Inventory of Existing Chemical Substances
 IMDG: International Maritime Dangerous Goods
 Inh: Inhalation
 IOC: Inventory of Chemicals
 KECI: Korean Existing Chemicals Inventory
 KECL: Korean Existing Chemicals List
 LC: Lethal Concentration

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LD: Lethal Dose
MSDS: Material Safety Data Sheet
N/Av: Not Applicable
N/Av: Not Available
NFPA: National Fire Protection Association
NIOSH: National Institute of Occupational Safety and Health
NOEC: No observable effect concentration
NTP: National Toxicology Program
OECD: Organisation for Economic Co-operation and Development
OSHA: Occupational Safety and Health Administration
PEL: Permissible exposure limit
PICCS: Philippine Inventory of Chemicals and Chemical Substances
RTECS: Registry of Toxic Effects of Chemical Substances
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

Bibliography

1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2015.
2. International Agency for Research on Cancer Monographs, searched 2015.
3. Canadian Centre for Occupational Health and Safety, CCIInfoWeb databases, 2015 (Chempendium, HSDB and RTECs).
4. Material Safety Data Sheets from manufacturer.
5. OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2015.

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<http://www.thecompliancecenter.com>

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