Fleetguard PGPlus Concentrate

Fleetguard
Chemwatch: 4710-79
Version No: 4.1.1.1
Material Safety Data Sheet according to NOHSC and ADG requirements

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Identifier

<table>
<thead>
<tr>
<th>Product name</th>
<th>Fleetguard PGPlus Concentrate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Name</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Synonyms</td>
<td>CC-2657, CC-2658, CC-2659, PG-Plus, PGPlus Concentrate, propylene glycol based antifreeze concentrate</td>
</tr>
<tr>
<td>Proper shipping name</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Chemical formula</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Other means of identification</td>
<td>Not Available</td>
</tr>
<tr>
<td>CAS number</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses

- Propylene glycol based antifreeze concentrate.

Details of the manufacturer/importer

- Registered company name: Fleetguard
- Address: 31 Garden Street Kilsyth 3137 VIC Australia
- Telephone: +61 3 9721 9100
- Fax: +61 3 9721 9148
- Website: Not Available
- Email: Not Available

Emergency telephone number

- Association / Organisation: Not Available
- Emergency telephone numbers: +61 3 9573 3112
- Other emergency telephone numbers: +61 3 9573 3112

CHEMWATCH EMERGENCY RESPONSE

<table>
<thead>
<tr>
<th>Primary Number</th>
<th>Alternative Number 1</th>
<th>Alternative Number 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1800 039 008</td>
<td>+612 9186 1132</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

Once connected and if the message is not in your preferred language then please dial 01

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

- NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS. According to NOHSC Criteria, and ADG Code.

- CHEMWATCH HAZARD RATINGS

Continued...
### Poison Schedule
Not Applicable

### Risk Phrases
Not Applicable

**Legend:**

Not Applicable

### Indication(s) of danger
Not Applicable

### SAFETY ADVICE
Not Applicable

### Other hazards
- Inhalation and/or ingestion may produce health damage*.
- May produce discomfort of the eyes and skin*.
- Possible skin sensitizer*.
- Repeated exposure potentially causes skin dryness and cracking*.
- Vapours potentially cause drowsiness and dizziness*.

### SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

#### Substances
See section below for composition of Mixtures

#### Mixtures

<table>
<thead>
<tr>
<th>CAS No</th>
<th>%[weight]</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>57-55-6</td>
<td>&gt;95</td>
<td>propylene glycol</td>
</tr>
</tbody>
</table>

### SECTION 4 FIRST AID MEASURES

#### Description of first aid measures

**Eye Contact**
- If this product comes in contact with the eyes:  
  ▶ Wash out immediately with fresh running water.  
  ▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.  
  ▶ Seek medical attention without delay; if pain persists or recurs seek medical attention.  
  ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

**Skin Contact**
- If skin contact occurs:  
  ▶ Immediately remove all contaminated clothing, including footwear.  
  ▶ Flush skin and hair with running water (and soap if available).  
  ▶ Seek medical attention in event of irritation.

**Inhalation**
- If fumes or combustion products are inhaled remove from contaminated area.  
- Lay patient down. Keep warm and rested.  
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.  
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.  
- Transport to hospital, or doctor.

**Ingestion**
- If swallowed do **NOT** induce vomiting.  
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.  
- Observe the patient carefully.  
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.  
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.  
- Seek medical advice.
Indication of any immediate medical attention and special treatment needed

To treat poisoning by the higher aliphatic alcohols (up to C7):
- Gastric lavage with copious amounts of water.
- It may be beneficial to instill 60 ml of mineral oil into the stomach.
- Oxygen and artificial respiration as needed.
- Electrolyte balance: it may be useful to start 500 ml M/6 sodium bicarbonate intravenously but maintain a cautious and conservative attitude toward electrolyte replacement unless shock or severe acidosis threatens.
- To protect the liver, maintain carbohydrate intake by intravenous infusions of glucose.
- Haemodialysis if coma is deep and persistent. (GOSSELIN, SMITH HODGE: Clinical Toxicology of Commercial Products, Ed 5)

BASIC TREATMENT

- Establish a patent airway with suction where necessary.
- Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- Administer oxygen by non-rebreather mask at 10 to 15 l/min.
- Monitor and treat, where necessary, for shock.
- Monitor and treat, where necessary, for pulmonary oedema.
- Anticipate and treat, where necessary, for seizures.
- DO NOT use emetics. Where ingestion is suspected rinse mouth and give up to 200 ml water (5 ml/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.
- Give activated charcoal.

ADVANCED TREATMENT

- Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
- Positive-pressure ventilation using a bag-valve mask might be of use.
- Monitor and treat, where necessary, for arrhythmias.
- Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.
- If the patient is hypoglycaemic (decreased or loss of consciousness, tachycardia, pallor, dilated pupils, diaphoresis and/or dextrose strip or glucometer readings below 50 mg), give 50% dextrose.
- Drug therapy should be considered for pulmonary oedema.
- Treat seizures with diazepam.
- Proparacaine hydrochloride should be used to assist eye irrigation.

EMERGENCY DEPARTMENT

- Laboratory analysis of complete blood count, serum electrolytes, BUN, creatinine, glucose, urinalysis, baseline for serum aminotransferases (ALT and AST), calcium, phosphorus and magnesium, may assist in establishing a treatment regime. Other useful analyses include anion and osmolar gaps, arterial blood gases (ABGs), chest radiographs and electrocardiograph.
- Acidosis may respond to hyperventilation and bicarbonate therapy.
- Haemodialysis might be considered in patients with severe intoxication.
- Consult a toxicologist as necessary. BRONSTEIN, A.C. and CURRANCE, P.L. EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994

For C8 alcohols and above.
Symptomatic and supportive therapy is advised in managing patients.

Propylene glycol is primarily a CNS depressant in large doses and may cause hypoglycaemia, lactic acidosis and seizures.
- The usual measures are supportive care and decontamination (Ipecac/ lavage/ activated charcoal/ cathartics), within 2 hours of exposure should suffice.
- Check the anion gap, arterial pH, renal function and glucose levels.

Ellenhorn and Barceloux: Medical Toxicology

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media

- Alcohol stable foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.

Special hazards arising from the substrate or mixture

Fire Incompatibility
- Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Advice for firefighters

Fire Fighting
- Alert Fire Brigade and tell them location and nature of hazard.
Wear full body protective clothing with breathing apparatus.
Prevent, by any means available, spillage from entering drains or water course.
Use water delivered as a fine spray to control fire and cool adjacent area.

Fire/Explosion Hazard
- Combustible.
- Slight fire hazard when exposed to heat or flame.
- Heating may cause expansion or decomposition leading to violent rupture of containers.
- On combustion, may emit toxic fumes of carbon monoxide (CO).

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

<table>
<thead>
<tr>
<th>Minor Spills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remove all ignition sources.</td>
</tr>
<tr>
<td>Clean up all spills immediately.</td>
</tr>
<tr>
<td>Avoid breathing vapours and contact with skin and eyes.</td>
</tr>
<tr>
<td>Control personal contact with the substance, by using protective equipment.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Major Spills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moderate hazard.</td>
</tr>
<tr>
<td>Clear area of personnel and move upwind.</td>
</tr>
<tr>
<td>Alert Fire Brigade and tell them location and nature of hazard.</td>
</tr>
<tr>
<td>Wear breathing apparatus plus protective gloves.</td>
</tr>
</tbody>
</table>

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

<table>
<thead>
<tr>
<th>Safe handling</th>
</tr>
</thead>
<tbody>
<tr>
<td>DO NOT allow clothing wet with material to stay in contact with skin</td>
</tr>
<tr>
<td>Avoid all personal contact, including inhalation.</td>
</tr>
<tr>
<td>Wear protective clothing when risk of exposure occurs.</td>
</tr>
<tr>
<td>Use in a well-ventilated area.</td>
</tr>
<tr>
<td>Prevent concentration in hollows and sumps.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material is hygroscopic, i.e. absorbs moisture from the air. Keep containers well sealed in storage.</td>
</tr>
<tr>
<td>Store in original containers.</td>
</tr>
<tr>
<td>Keep containers securely sealed.</td>
</tr>
</tbody>
</table>

Conditions for safe storage, including any incompatibilities

<table>
<thead>
<tr>
<th>Suitable container</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metal can or drum</td>
</tr>
<tr>
<td>Packaging as recommended by manufacturer.</td>
</tr>
<tr>
<td>Check all containers are clearly labelled and free from leaks.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Storage incompatibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohols</td>
</tr>
<tr>
<td>are incompatible with strong acids, acid chlorides, acid anhydrides, oxidising and reducing agents.</td>
</tr>
<tr>
<td>reacts, possibly violently, with alkaline metals and alkaline earth metals to produce hydrogen</td>
</tr>
<tr>
<td>react with strong acids, strong caustics, aliphatic amines, isocyanates, acetaldehyde, benzoyl peroxide, chromic acid, chromium oxide, dialkyllzincs, dichlorine oxide, ethylene oxide, hypochlorous acid, isopropyl chlorocarbonate, lithium tetrahydroaluimate, nitrogen dioxide, pentafluoroguanidine, phosphorus halides, phosphorus pentasulfide, tangerine oil, triethylaluminiunm, trisobutylaluuminium</td>
</tr>
<tr>
<td>should not be heated above 49 deg. C. when in contact with aluminium equipment</td>
</tr>
</tbody>
</table>

PACKAGE MATERIAL INCOMPATIBILITIES
Not Available

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

<table>
<thead>
<tr>
<th>OCCUPATIONAL EXPOSURE LIMITS (OEL)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>INGREDIENT DATA</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Source</th>
<th>Ingredient</th>
<th>Material name</th>
<th>TWA</th>
<th>STEL</th>
<th>Peak</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia Exposure Standards</td>
<td>propylene glycol</td>
<td>Propane-1,2-diol total: (vapour &amp; particulates) / Propane-1,2-diol: particulates only</td>
<td>474 mg/m3 / 10 mg/m3 / 150 ppm</td>
<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

EMERGENCY LIMITS

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Material name</th>
<th>TEEL-1</th>
<th>TEEL-2</th>
<th>TEEL-3</th>
</tr>
</thead>
</table>

Continued...
propylene glycol

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Original IDLH</th>
<th>Revised IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>propylene glycol</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

### Exposure controls

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

- Process controls which involve changing the way a job activity or process is done to reduce the risk.
- Enclosure and/or isolation of emission source which keeps a selected hazard “physically” away from the worker and ventilation that strategically “adds” and “removes” air in the work environment.

### Personal protection

- Safety glasses with side shields.
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.

### Skin protection

See Hand protection below

### Hands/feet protection

- Wear chemical protective gloves, e.g. PVC.
- Wear safety footwear or safety gumboots, e.g. Rubber

**NOTE:**

- The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.
- Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.

### Other protection

- Overalls.
- P.V.C. apron.
- Barrier cream.

### Respiratory protection


Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the “Exposure Standard” (or ES), respiratory protection is required.

Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

<table>
<thead>
<tr>
<th>Required Minimum Protection Factor</th>
<th>Half-Face Respirator</th>
<th>Full-Face Respirator</th>
<th>Powered Air Respirator</th>
</tr>
</thead>
<tbody>
<tr>
<td>up to 5 x ES</td>
<td>A-AUS / Class 1 P2</td>
<td>-</td>
<td>A-PAPR-AUS / Class 1 P2</td>
</tr>
<tr>
<td>up to 25 x ES</td>
<td>Air-line*</td>
<td>A-2 P2</td>
<td>A-PAPR-2 P2</td>
</tr>
<tr>
<td>up to 50 x ES</td>
<td>-</td>
<td>A-3 P2</td>
<td>-</td>
</tr>
<tr>
<td>50+ x ES</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

* - Continuous-flow; ** - Continuous-flow or positive pressure demand
^ - Full-face

### SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

**Information on basic physical and chemical properties**

<table>
<thead>
<tr>
<th>Appearance</th>
<th>Royal blue coloured viscous liquid; soluble in water.</th>
</tr>
</thead>
</table>
SECTION 10 STABILITY AND REACTIVITY

Reactivity
See section 7

Chemical stability
▶ Unstable in the presence of incompatible materials.
▶ Product is considered stable.
▶ Hazardous polymerisation will not occur.

Possibility of hazardous reactions
See section 7

Conditions to avoid
See section 7

Incompatible materials
See section 7

Hazardous decomposition products
See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled
Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo.
Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual.
Inhalation hazard is increased at higher temperatures.

Ingestion
Accidental ingestion of the material may be damaging to the health of the individual.
Overexposure to non-ring alcohols causes nervous system symptoms. These include headache, muscle weakness and inco-ordination, giddiness, confusion, delirium and coma.
Ingestion of propylene glycol produced reversible central nervous system depression in humans following ingestion of 60 ml.

Skin Contact
There is some evidence to suggest that the material may cause moderate inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterised by redness, swelling and blistering.
A single prolonged exposure is not likely to result in the material causing harm. However, when applied in large quantities to damaged skin as a topical preparation or by contact with clothing accidentally contaminated by the material, there may be the potential to absorb the material in harmful amounts.

Eye
Limited evidence or practical experience suggests, that the material may cause eye irritation in a substantial number of individuals. Prolonged eye contact may cause inflammation characterised by a temporary redness of the conjunctiva (similar to windburn).
Irritation of the eyes may produce a heavy secretion of tears (lachrymation).
There is limited evidence that skin contact with this product is more likely to cause a sensitisation reaction in some persons compared to the general population. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Propylene glycol is thought, by some, to be a sensitising principal following the regular use of topical creams by eczema patients. A study of 866 persons using a formulation containing propylene glycol in a patch test indicated that propylene glycol caused primary irritation in 16% of exposed individuals probably caused by dehydration.

### Fleetguard PGPlus Concentrate

<table>
<thead>
<tr>
<th></th>
<th>TOXICITY</th>
<th>IRRITATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dermal (rabbit) LD50: 11890 mg/kg</td>
<td>Eye (rabbit): 100 mg - mild</td>
<td></td>
</tr>
<tr>
<td>Dermal (rabbit) LD50: 20800 mg/kg</td>
<td>Eye (rabbit): 500 mg/24h - mild</td>
<td></td>
</tr>
<tr>
<td>Oral (rat) LD50: 20000 mg/kg</td>
<td>Skin(human):104 mg/3d Intermit Mod</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Skin(human):500 mg/7days mild</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

* Value obtained from manufacturer's msds
unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances

The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. Asthma-like symptoms may continue for months or even years after exposure to the material ceases.

### PROPYLENE GLYCOL

The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. The acute oral toxicity of propylene glycol is very low, and large quantities are required to cause perceptible health damage in humans. Serious toxicity generally occurs only at plasma concentrations over 1 g/L, which requires extremely high intake over a relatively short period of time. It would be nearly impossible to reach toxic levels by consuming foods or supplements, which contain at most 1 g/kg of PG.

### Acute Toxicity

- Skin Irritation/Corrosion
- Serious Eye Damage/Irritation
- Respiratory or Skin sensitisation
- Mutagenicity

### Carcinogenicity

- Reproductivity
- STOT - Single Exposure
- STOT - Repeated Exposure
- Aspiration Hazard

**Legend:**
- ✔️ – Data required to make classification available
- ✗ – Data available but does not fill the criteria for classification
- ❌ – Data Not Available to make classification

**CMR STATUS**

Not Applicable

**SECTION 12 ECOLOGICAL INFORMATION**

**Toxicity**

**DO NOT** discharge into sewer or waterways.

**Persistence and degradability**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Persistence: Water/Soil</th>
<th>Persistence: Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>propylene glycol</td>
<td>LOW</td>
<td>LOW</td>
</tr>
</tbody>
</table>

**Bioaccumulative potential**

Continued...
<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Bioaccumulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>propylene glycol</td>
<td>LOW (BCF = 1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mobility in soil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingredient</td>
</tr>
<tr>
<td>propylene glycol</td>
</tr>
</tbody>
</table>

**SECTION 13 DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

Legislation addressing waste disposal requirements may differ by country, state and/or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use.

**SECTION 14 TRANSPORT INFORMATION**

**Labels Required**

<table>
<thead>
<tr>
<th>Marine Pollutant</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAZCHEM</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

- Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
- Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
- Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

**SECTION 15 REGULATIVE INFORMATION**

**Safety, health and environmental regulations / legislation specific for the substance or mixture**

- propylene glycol (57-55-6) is found on the following regulatory lists:
  - Australia Exposure Standards
  - Australia Inventory of Chemical Substances (AICS)
  - Australia Hazardous Substances Information System - Consolidated Lists

**SECTION 16 OTHER INFORMATION**

**Other information**

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at: [www.chemwatch.net/references](http://www.chemwatch.net/references)

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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