



Cooling System Products

# Coolant

*Protecting your  
Engine, Enterprise & Environment.*

# *First Choice of Leading Manufacturers*

Fleetguard is recognised in Australia and worldwide as the leader in the fields of heavy duty filtration, coolant and exhaust. Our innovative and diverse range of products have been protecting industry for over 50 years by developing new technologies that are safer, cleaner & quieter, whilst also extending engine life. Designed to meet today's and tomorrow's emission standards. Fleetguard is keeping industry moving, now and into the future.

*ultimate  
protection*

# Coolant & Cooling Systems

## Why The Cooling System Is So Important

- During operation, the heat generated by a heavy-duty engine could heat seven rooms of a house. That's a lot of heat. This heat must be dissipated to keep the engine operating in an optimum condition. Up to 40 percent of all engine repair costs are coolant system related. So to reduce operating costs and optimise engine downtime, correct cooling system maintenance is key.

## Components of a Correctly Maintained Coolant

- Antifreeze is not coolant but an ingredient in the coolant mix. The other components of Coolant are Supplemental Coolant Additives, known as SCAs, and good quality water.
- SCAs must be added to the coolant mixture to improve engine protection against corrosion, scale and liner pitting. SCAs must be added to the coolant used for engine fill and any coolant added to the system through top-off. Additionally, regular SCA addition is required to replace chemicals depleted during engine operation.
- Water filters containing SCA provide the simplest method to replace depleted chemicals. Liquid SCAs are available for mixing with coolant, and for use in engines without water filters.
- Antifreeze is typically thought of as a winter-time necessity because of its name. It is actually more important because of its heat transfer and corrosion protection properties. Specifically, Low silicate antifreeze is recommended for use in diesel engines.
- Glycol depresses the freezing point and elevates the boiling point of coolant when mixed with water. It also assists the SCAs to better act on the metal surfaces due to its better wetting characteristic.
- The recommendation is a 50/50 mix of make-up water to antifreeze. This ratio is based on properties such as boiling point and freezing point. An unbalanced mixture sets up the risk of corrosion or chemical drop out.

Good quality water should have low levels of chlorides, sulfates, low hardness and good pH level. Premixed coolants can be purchased eliminating concerns with water quality and mix ratio.

## Coolant – An Engineered Fluid

- Engine manufacturers such as Cummins and maintenance organisations such as TMC are now recommending use of Fully Formulated Coolants. Fully Formulated or 'precharged' coolants contain the SCAs required to protect diesel engines. They reduce labour hours and the possible errors associated with precharging low silicate antifreeze, reducing maintenance downtime because of coolant related equipment problems. However, fully formulated coolants still required regular SCA additions to replace chemicals depleted with engine operation. Follow engine manufacturers' recommendations for correct SCA addition schedules.
- Most recently Extended Service Interval and Long Life Coolant products have been introduced. These products allow customers to extend service intervals beyond that typically recommended by engine manufacturers and take them out to 250,000kms. Typical ESI/LLC products build on the use of fully formulated coolants and use slow release filter designs and organic acid technology to extend time between necessary coolant servicing.

## Other Cooling System Products

- Test products allow customers to check their coolant and evaluate the effectiveness of their maintenance system. Laboratory analysis can provide detailed information on coolant condition. On-site test methods, such as Test strips and refractometers, can provide immediate information on general coolant condition.
- Cleaners may sometimes be necessary to return poorly maintained cooling system to good condition. Be sure to choose the correct system cleaner for the specific problem and follow directions for use carefully.



# Fully Formulated Heavy Duty Coolants



<b>PEACE OF MIND</b>		
✓	<b>Dangerous Goods Class</b>	<b>NONE</b>
✓	<b>Hazchem Code</b>	<b>NONE</b>
✓	<b>Poisons Schedule No.</b>	<b>NONE</b>
✓	<b>EPA Spill Reporting</b>	<b>NONE</b>
✓	<b>Biodegradeable</b>	<b>YES</b>
✓	<b>Suits <i>Extended (ES)</i> or <i>Standard</i> Service Interval Maintenance Products</b>	<b>YES</b>

## PART No. DESCRIPTION

CC2870	4ltr	PGPLUS Premix Coolant
CC2871	10ltr	PGPLUS Premix Coolant
CC2869	20ltr	PGPLUS Premix Coolant
CC2868	208ltr	PGPLUS Premix Coolant
CC2867	1000ltr	PGPLUS Premix Coolant
CC2866	20 000ltr	Bulk PGPLUS Premix Coolant
CC2657	4ltr	PGPLUS Concentrate
CC2658	20ltr	PGPLUS Concentrate
CC2659	208ltr	PGPLUS Concentrate

PGPlus™ is a totally new Propylene Glycol based engine coolant engineered to offer you total piece of mind.

Glycol based coolants are critical to the successful operation of your Heavy Duty engines With PGPlus™. You can have the added protection offered by Glycol, along with added safety, health and environmental benefits.

Complies with TMC RP330 & RP338, GM6038 and ASTM D6211, D5216, D4985 & D3306.

### COST EFFECTIVE

- ✓ Can last the life of the engine when maintained properly.
- ✓ Compatible with other EG & PG coolants and SCA's.

### TOTAL ENGINE PROTECTION

- ✓ Fully formulated organic coolant
- ✓ Best liner pitting protection
- ✓ Best scale protection
- ✓ Best aluminium & solder protection
- ✓ Best water pump & seal protection.
- ✓ Fully approved by major engine manufacturers, including Cummins, Caterpillar, Detroit, Waukesha, etc.

### SIMPLE & CONVENIENT

- ✓ One product for **ALL** Heavy & Light Duty applications.
- ✓ Simple maintenance procedures. At 1 year, 250k Kms, or 4,000 hrs add ES Extender™ booster, OR our ES Slow release chemical filters at the beginning of each extended service interval.

**A PREMIUM ENGINE COOLANT THAT PROTECTS YOUR ENGINE, ENTERPRISE & ENVIRONMENT.**

# Fully Formulated Heavy Duty Coolants

## Major Benefits

- Improved liner pitting protection.
- Improved solder and aluminium protection.
- Reduced solids, better for water pump seals.
- Less toxic than borate / nitrite chemistry.
- Ease of use.

Fully formulated coolants eliminate the need of SCA pre-charging and provide the greatest opportunity for successful cooling system maintenance. They protect your cooling system by preventing scaling, foaming, corrosion, and providing liner pitting protection not found in low silicate coolants. They are user friendly by eliminating the need for SCA mixing, and therefore, reducing maintenance costs.

All Fleetguard fully formulated coolants meet appropriate TMC RP 329 recommendations and ASTM-D-6210-98 test standard for heavy duty coolants. They also meet the ASTM low silicate recommendations and are universal for use in both diesel and automotive engines.

## Compleat-50 Pre-Mix

Compleat-50 was introduced as the first fully formulated coolant already pre-charged with DCA4 SCA for use in heavy duty engines. Compleat-50 provides superior protection consisting of 50% ethylene glycol and 0.4 units of DCA4 per litre in premixed formulation. This exceeds the minimum recommended SCA level for added protection.



Compleat-50 is formulated to minimise coolant related water pump seal leakage and protects against small amounts of fuel or lube oil contamination in the cooling system.

*Compleat-50 premix is formulated with demineralised water and is ready to use. Premix products eliminate concerns with water quality and reduce maintenance costs.*

Compleat-50 is maintained with [Standard Service Interval Products](#) only.

Part No.	Litres	
CC2888	4	Premixed
CC2889	20	Premixed
CC2855	208	Premixed



## Compleat-50 Concentrate

The alternative to Compleat-50 Premix is Compleat-50 Concentrate.



Mix 50:50 with clean mineral free water to achieve a fully formulated heavy duty coolant.

**OR**

Use undiluted to adjust the glycol/antifreeze level should it fall below the desired 50% by volume.

*Compleat-50 concentrate mixes readily with water*

Part No.	Litres	
CC2642	4	Concentrate
CC2639	20	Concentrate
CC2640	208	Concentrate



# ES Extended Service Products

## Coolant Filters – Slow Release

**“Built to go the extra distance”**

Fleetguard’s ES Filters are designed to last 250,000kms, five to ten times the average standard interval. To ensure reliability, several improvements were made to the hardware found in all ES Filters.

- Increased material thickness of components for longer life.
- Coated key components and added spring protector for corrosion resistance.
- Improved gasket and adhesive materials.
- StrataPore™ Media.
- Slow chemical release.



WF 2121	Slow release ES chemical	11/16-16 thd
WF2122	Non-chemical	11/16-16 thd
WF2123	Non-chemical with increased media	11/16-16 thd
WF2124	Mack slow release ES chemical	3/4-20 thd
WF2134	Mack non-chemical	3/4-20 thd
WF2135	Mack slow release ES chemical	1-16 thd
WF2137	Mack non-chemical	1-16 thd
WF2126Cummins Signature 600	slow release chemical	M36 x 2-6G thd
WF2127	Cummins Signature 600 non-chemical	M36 x 2-6G thd
WF2128	Volvo slow release ES chemical	M16 x 1.5 thd
WF2129	Volvo non-chemical	M16 x 1.5 thd
WF2130	Volvo non-chemical with increased media	M16 x 1.5 thd

\*Fits standard heads for Cummins, Caterpillar, Detroit, Komatsu, and others.

## Benefits of StrataPore™ Media

With extended coolant exposure, cellulose media loses its strength. Polypropylene StrataPore™ media maintains its durability with extended coolant exposure. StrataPore™ media provides improved efficiency and capacity, beneficial for extended filter service intervals and facilitates extended coolant life. StrataPore™ strips small amounts of oil from the coolant. Severe oil contamination affects coolant performance and contaminated coolant should be discarded and replaced. Containing some amount of oil in the filter can minimise the effects of contamination.

## Fleetguard’s Slow Release Chemical

Chemical containing ES Filters use a patented combination of non-soluble time release coatings and a diffusion orifice to slowly release chemicals during the extended service intervals without adding harmful contaminants to the cooling system. The chemical additive in ES Filters is especially designed to only replace chemicals depleted with engine operation and therefore minimise coolant total dissolved solids (TDS). High TDS adds to water pump seal failure.

## ES Extender™

An alternative liquid chemical replacement to the ES slow release factor for end of service interval to extend coolant protection.

*Treats up to each 80 litres of coolant*

- Add after one year or 250,000kms or 4,000 hours to boost system for another interval.



Part No.	Description
CC2840	1 Litre

## Filter Head Assemblies

Since not all engines come equipped with coolant filters, Fleetguard provides head assemblies that can be installed to achieve the benefits of coolant filtration.



<b>Std Single Head</b>	204163S
Inlet & Outlet	3/8”NPT
Std Single Bracket	256535S
Head & Bracket Assembly	257715S

<b>Severe Service Head</b>	3904378S
Similar to 204163S with steel thread spud.	

<b>Dual Head</b>	215617S
Inlet & Outlet	1/2”NPT
Mounting Bracket	256535S

<b>Std Single Retro Kit</b>	#WFK1
Components	
Std Single Head	204163S
Bracket	256535S
2 x Bronze Valve	3/8” NPTF
2 x Bronze Tail Connector	3/8” NPTF

# Standard Service Products

## DCA4 Filters

WF2070	2 Units	WF2074	12 Units
WF2071	4 Units	WF2075	15 Units
WF2072	6 Units	WF 2076	23 Units
WF2073	8 Units		

NOTE: All have 11/16 W/16 threads\*

WF2083	4 Units	Mack	3/4 W/20
WF2082	6 Units	Mack	1-16 UN-2B
WF2015	8 Units	Mack	3/4 W/20
WF2022	11 Units	Mack	1-16 UN-2B

\* Fits standard heads for Cummins, Caterpillar, Detroit, Komatsu, and other applications.

Service only — not suitable for pre-charge.

## Non Chemical Filters

Some customers prefer to use liquid SCAs. When using liquid SCAs, Fleetguard provides non-chemical filters (sometimes known as blank filters) for use on engines. All these filters are epoxy coated for improved corrosion resistance.

WF2077	1/16 W/16	Cummins, Caterpillar, Detroit, others
WF2078	3/4 W/20	Mack
WF2079	1-16 UN-2B	Mack

## DCA4 Liquid

Fleetguard's DCA4 product line was introduced in 1984 as OEM on all Cummins engines and continues to be used today. DCA4 is less toxic than typical borate/nitrite chemistry and improves performance in several ways:

- Improved solder and aluminium protection.
- Improved liner pitting protection.
- Improved tolerance to SCA\*\* under or over-treatment.
- Reduced solids, better for water pump seals.

Part No.	Units	Litres
DCA 60L	5	0.47
DCA 65L	20	1.89
DCA 70L	40	3.78
DCA 75L	200	18.9
DCA 80L	2200	208

\*\* Supplemental coolant additive

### SELECTION

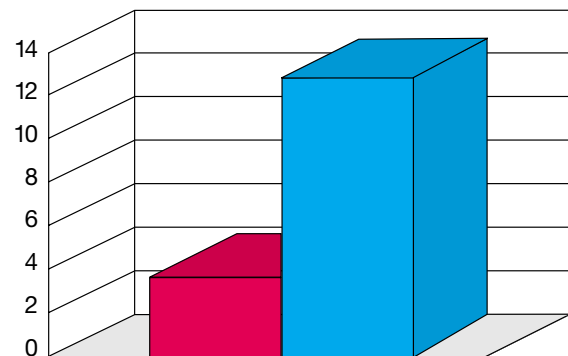
Install service filter(s) and/or liquid containing number of SCA units below:

Service Interval	System Size in Litres	System Size in Litres				
		[Hours]	4-19	19-38	42-57	60-76
Kilometres	[Hours]					
16001 – 24000	251-375	2	4	6	8	
0 – 16000	0 – 250	2	2	4	6	

## Why use Coolant Filters?

Published data from multiple sources indicate there is a direct benefit between filtering contaminate from coolant and **reducing wear, corrosion, pitting and plugging**. This data also indicate correlation between filtration and a **reduction in scale formation**, helping the engine maintain effective heat transfer for optimum performance.

One of the most significant studies compared over 11,000 trucks – half using water filters and other half not. **The trucks with water filters had one third as many failures of leaking water pump seals as the trucks without filters.** This shows filters can significantly affect engine failure rates.



### Repairs per Hundred

- Engine without Water Filters
- Engine with Water Filters

# Cooling System Cleaners

Fleetguard offers two cleaners to address the variety of cleaning needs. They remove contamination without harming the metal surfaces, gaskets, hoses, or plastic parts of a heavy duty cooling system. Both cleaners work quickly and effectively to solve cooling system problems, saving downtime and dollars.

A 45 minute to 2 hour cleaning is the first line of defence against cooling system overheating problems. Follow directions on the label.

The choice of cleaner should be based on cooling system problems to be addressed.



Problem	Restore	Restore Plus
Silicate Gel	Excellent	Poor
Rust	Poor	Good
Scale	Fair	Excellent
Oil & Grease	Good	Excellent
Solder Bloom	Good	Good

*\*Care should be taken any time a system cleaner is used.  
For most effective application, follow all directions.*

## Restore

Restore is an alkaline-based chelating cleaner particularly effective in cleaning silicate gel. It is also effective in removing oil contamination and solder bloom.

CC2610	3.8 Litres
CC2611	19 Litres
CC2612	208 Litres

## Restore Plus

Restore Plus is an acid-based chelating cleaner designed to remove heavy rust and scale deposits. It is better at removal of oil and fuel fouling than alkaline cleaners.

CC2638	3.8 Litres
CC2637	208 Litres



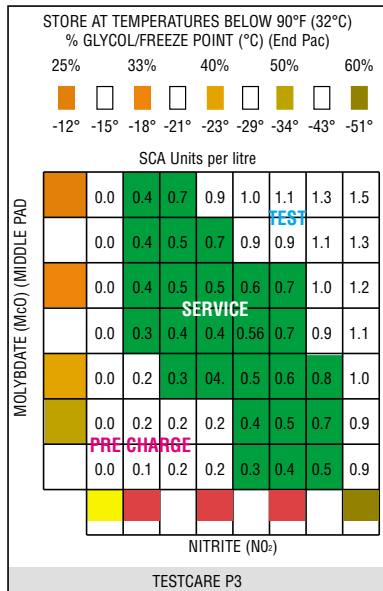
## Mixed Ratio

1 Restore or Restore Plus to 10 of water.  
For severe contamination removal mix 1 : 5 of water.



# Coolant Test Products

Fleetguard offers test methods to evaluate coolant system condition on site analysis. Coolant testing allows customers to know what is going on in their system and ensure proper maintenance practices are being followed to optimise cooling system protection and minimise downtime. Fleetguard recommends testing coolant twice a year or after any major coolant loss.

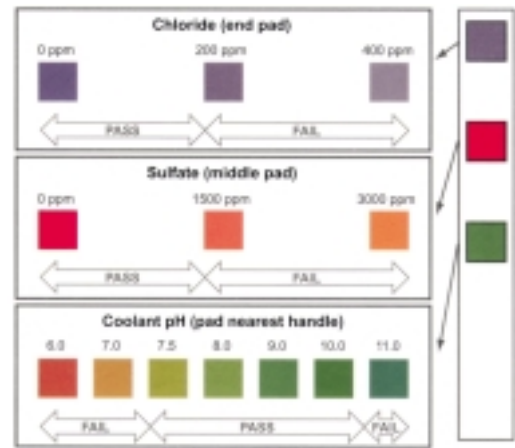


Note: Colour chart representative only. Do not use with strips

## 3-Way Coolant Additive Test Strips

The 3-Way Test Kit is an easy and effective means of checking percentage of glycol and liner pitting protection. Since liner pitting protection is a measure of nitrite and molybdate in engine coolant. Also suitable for ES (Extended Service) Coolant program.

CC2602M	Metric	Bottle of 50
CC2602AM	Metric	4 Pack



## Quik-Check™ Coolant Quality Test Strips

The **GO** or **NO GO** answer to extending coolant life.

These strips broaden the monitoring of coolant condition beyond that of the 3-Way additive test that monitors nitrite/molybdate/and glycol levels. Even the highest quality pre-charged and extended service coolants can be degraded if engine head gaskets leak and allow combustion gases to contaminate the coolant. Fleetguard's Quik-Chek™ dip and read test strips provide a simple and effective means of testing coolant pH, Chloride and Sulphate levels once a year to ensure coolant life.

If any of the readings fail, the coolant should be considered condemned and the system should be drained and refilled with the new pre-charged coolant meeting TMC RP 329 specifications. The Quik-Chek™ strips can test all conventional coolants except those dyed orange or red.

Part No.	Description
CC2607C	2 Strips



## Refractometer (CC2800)

A refractometer is an accurate tool for determining coolant freezing point. It is more accurate than either test strips or float type hydrometers. It takes the guesswork out of measurements, requires no waiting for results, is easy to use, and stores easily. It can also be used to test battery condition.

Replacement covers are available in case the product becomes scratched or damaged.  
Part number 3835661S.

# Coolant Maintenance Recommendations

## For Standard Change Intervals

1. Fill the cooling system with a fully formulated antifreeze meeting TMC RP329. Install service coolant filter(s) matched to oil drain interval.
2. Top-off the cooling system with a fully formulated coolant and not plain water only.
3. Replenish depleted SCAs by replacing the service coolant filter(s) at every oil change interval OR by adding appropriate dose of DCA4 Liquid.
4. Test coolant at least twice annually, or when major coolant loss occurs and adjust the DCA4 level as required.

### 3 Way Coolant Additive Test Kit

The following action is required after testing coolant at the normal oil drain interval:

#### Below 0.3 units per litre

Replace service filter and add 1 litre of DCA4 per 32 litres of coolant.

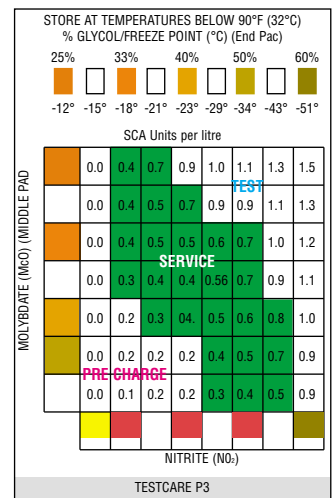
#### 0.3 - 0.8 units per litre

Continue to replace service coolant filter or add DCA4 liquid service dose at each oil drain interval.

#### Above 0.8 units per litre

Do not replace service filter or add DCA4 liquid until the concentration falls below 0.8 units per litre. Test at every subsequent oil drain interval.

CC2602M – 50 strip  
CC2602AM – 4 strip



Note: Colour chart representative only. Do not use with strips

## Units of Supplemental Coolant Additive (SCA) Added

Maintenance Intervals for Cooling Systems <u>up to 76 litres.</u>					
Install service filter(s) and/or liquid containing number of <u>SCA units below</u>					
Service Interval		System Size in Litres			
Hours	Kilometres	4-19	20-38	39-57	58-76
251 - 375	16001 - 24000	2	4	6	8
0 - 250	0 - 16000	2	2	4	6

Units of DCA4

Maintenance Intervals for Cooling Systems <u>above to 76 litres.</u>						
Install service filter(s) and/or liquid containing number of <u>SCA units below</u>						
Service Interval		System Size in Litres				
Hours		77 - 117	118 - 189	190 - 284	285 - 378	379 - 568
751 - 1000		25	50	80	100	150
501 - 750		20	35	60	75	110
251 - 500		15	25	40	50	75
0 - 250		10	15	20	25	40

Units of DCA4

# Coolant Maintenance Recommendations

## For Extended Service Intervals

1. Top Off Correctly: Use PGPlus™ or ES Coolant premixed and use for all top off.
2. Replenish Spent Chemicals: Install a slow release chemical containing ES Filter for every 80 litres of system capacity.  
Or  
Install a non-chemical ES Filter, then add 1 litre per 80 litres of system capacity AFTER the first service interval (250,000kms, 4,000 hours, or 1 year of engine operation).

### ES™ Systems

The following assurance testing is recommended: Use 3 way test strips CC2602M or C2602AM

#### Below 0.3 units per litre

Add 2 litres of ES EXTENDER™ (2 x CC2840) per 80 litres of coolant

#### 0.3 - 0.8 units per litre

Add 1 litre of ES EXTENDER™ (1 x CC2840) per 80 litres of coolant.

#### Above 0.8 units per litre

Do not add ES EXTENDER™ to the system.

Note: With correct top-off, protection should not be below 0.3 units per litre at each service interval and no less than 0.5 units per litre. The ideal level is 0.7



## For all Glycol Adjustment if necessary

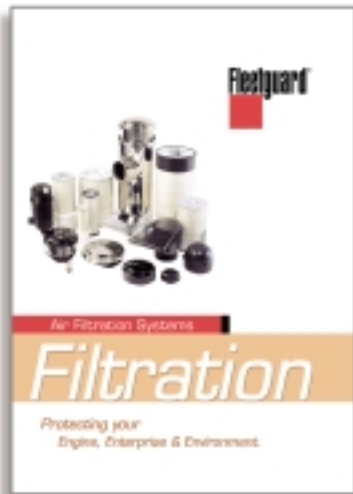
### CHART FOR ADJUSTING TO 50% GLYCOL AFTER TESTING COOLANT

**INSTRUCTIONS:** Match up glycol % with system capacity. The intersection of these two is the amount of Compleat 50 Concentrate™ or PG Plus™ Concentrate to add to achieve a 50/50 mix of glycol and water in the cooling system. Retest after adjusting to ensure levels are correct.

System Capacity Litres	Drain Coolant and add Compleat 50 Concentrate™ or PG Pus™ Concentrate (Litres Undiluted)									
	10	9	8	8	7	6	4	3	2	0
20	12	11	10	9	8	7	5	4	2	0
24	14	12	11	11	9	8	6	5	2	0
28	16	14	13	12	11	9	7	5	2	0
32	18	16	15	14	12	10	8	6	3	0
36	20	18	17	15	13	11	9	7	3	0
40	22	20	19	17	15	13	9	7	3	0
44	24	21	20	18	16	14	11	8	4	0
48	26	23	22	20	17	15	12	9	4	0
52	28	25	23	22	18	16	13	10	4	0
56	30	27	25	23	20	17	14	10	5	0
60	32	28	26	24	21	18	15	11	5	0
64	34	30	28	26	23	19	15	11	6	0
68	35	32	30	27	24	21	17	12	6	0
72	38	34	32	29	26	22	18	13	7	0
76	40	36	33	30	27	23	18	13	7	0
80										
<b>Glycol %</b>	0	10	15	20	25	30	35	40	45	50

# Complete Engine System Supplier

Call Customer Assistance on **1800 032 037** for further Fleetguard Product Catalogues



Part No. 3300966A



Part No. 3300998A

For more information, contact your nearest stockist or phone Fleetguard Customer Assistance



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