



*Protecting your
Engine, Equipment, People & Environment*

First Choice of Leading Manufacturers

Cummins Filtration is recognised worldwide as the leader in the fields of heavy duty filtration, coolant and exhaust. Our innovative and diverse range of Fleetguard branded 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 products are keeping industry moving, now and into the future.

*ultimate
protection*

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Note: Please check if product is available in your region.

Understanding the Cooling System

Coolant – Now is a fully formulated engineered fluid in the same family such as other fluids used in modern engines including crankcase oil, brake fluid and transmission fluid.

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 % of all engine problems in heavy-duty diesel engines are directly or indirectly related to improper cooling system maintenance. So to reduce operating costs and optimise engine downtime, correct cooling system maintenance is the key.

Aluminium Corrosion

Corrosion has nothing to do with age. More and more engine manufacturers are using aluminium to reduce weight in cooling systems. But you have to pay the price for weight reduction, because aluminium is the most sensitive material in the system and corrosion is its biggest problem.

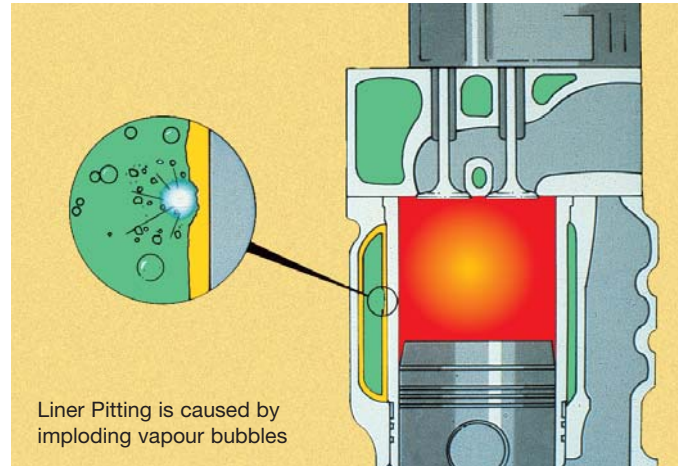
Not many people are aware of it, but corrosion is not a question of age, it can start as early as the initial fill if correct coolant maintenance is not adopted.

- Oxygen in the cooling system reacts with metal parts in the engine = oxidation rust.
- Water pumps, radiators, thermostats and manifolds are affected.
- Radiators get blocked.
- Leaks appear
- Engine overheats = repair costs, downtime.

Liner Pitting or Cavitation Erosion

The pistons in your engine move up and down about 2,000 times a minute. While they move vertically, the crankshaft is performing a completely different movement by rotating horizontally. These contradictory movements will cause your engine's liners to vibrate a lot.

Although the outer wall of the liner is surrounded by cooling fluid, its inertia creates tiny vacuum pockets, causing bubbles of vapour to form on the liner wall.



When the liner vibrates back these bubbles collapse under an enormous pressure of 1,000 bar and take small chunks out of the liner.

Fleetguard can't stop your engines' liners vibrating, or change the inertia of the cooling fluid, but Fleetguard's inhibitors and formulated coolants can neutralise the fatal effect on your engine by creating a protective layer on the liner wall.

Scaling

Coolant contains good-quality water, Glycols and Coolant Additives. Tap water is always slightly hard because of minerals such as calcium, magnesium, etc.

The detrimental effect of scale takes place in the hot spots of your engine, just as it does when you boil water in your kettle. These hot spots are the liners and the cylinder heads.

When you think that 1 mm of scale has the same insulating effect as 75 mm of cast iron, it becomes obvious that scale is a major insulator, and that heat can not easily dissipate from your engine's combustion chamber.

The consequences are:

- worn piston rings
- higher oil consumption
- scuffed pistons
- burnt valves
- corroded bearings
- total engine failure

The best assurance against this is to use fully formulated premixed product for both initial fill and lost coolant top off.

Understanding the Cooling System

Components of a Correctly Maintained Coolant

Coolant consists of the following major components: Glycol (sometimes referred as Antifreeze), Supplemental Coolant Additive (SCA's) and Deionised Water.

SCA's improve engine protection against corrosion, scale and liner pitting. SCA's must be added to the coolant used for engine fill and any coolant added to the system through top-off.

SCA's will deplete over time during engine operation. SCA's can be replenished by using Fleetguard patented coolant filters and or liquid SCA's.

Glycol lowers the freezing point and elevates the boiling point of coolant when mixed with water. It also assists the SCA's to better act on the metal surfaces due to its better wetting characteristic (lower surface tension).

The recommendation is a 40 to 60% Glycol mix. This ratio is based on properties such as boiling point and freezing point. As well as known advantages provided by its physical characteristics in aiding as much as 100% improvement in metal protection. An unbalanced mixture sets up the risk of corrosion or chemical drop out, so avoid this by using Fleetguard premixed coolants.

Coolant – An Engineered Fluid

Engine manufacturers such as Cummins and maintenance organisations such as the Technology & Maintenance Council (TMC) are now recommending the use of Fully Formulated Coolants.

Fully Formulated or 'precharged' coolants contain the SCAs required to protect diesel engines. These coolants reduce labour hours and the possible errors associated with precharging low silicate coolant.

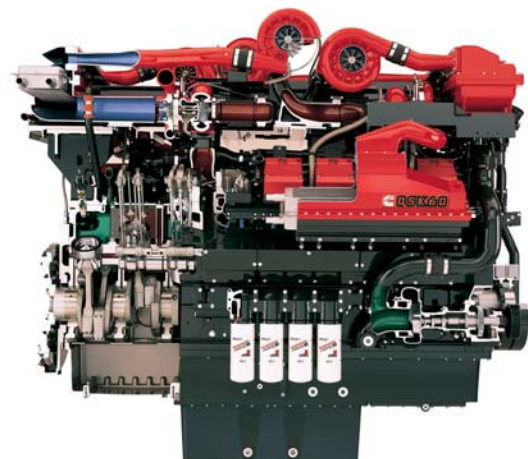
However, fully formulated coolants still require regular SCA additions to replace chemicals depleted with engine operation and optimise maximum life from the coolant. Follow engine manufacturers' recommendations for correct SCA addition schedules. Correct Coolant maintenance is vital to reduce operating costs and minimise engine downtime.

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. SCA service intervals with total coolant life is possible to 750,000kms and in some cases engine cradle to grave. Typical ESI 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 Systems Products

On-site test methods, such as Test Strips and Refractometers, can provide immediate information on general coolant condition as well as SCA concentrate.

These 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. 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 Engine Coolants

PGPlus™ Premix



Part No.	Size
CC2870	4lt
CC2871	10lt
CC2869	20lt
CC2868	208lt
CC2867	1000lt
CC2866	20,000lt

Extended Service Life

Product

PGPlus™ Premix is a fully formulated organic Extended Service engine coolant that can last the life of the engine if maintained properly. PGPlus™ can be used with other EG & PG coolant and SCA's. But for optimum benefits listed it is advisable not to mix with others. Can be used in conjunction with standard SCA coolant service filters or slow release filters or ES Extender™. Satisfies major Heavy Duty engine and OEM specifications in accordance with TMC RP330 & RP338 and ASTM D6211, D5216, D4985 and D3306. Being a Propylene Glycol based coolant it provides environmental, safety and storage advantages over Ethylene Glycol based coolants.

Benefits

- Improved protection from liner pitting, scale, aluminium corrosion and water pump seal leakage.
- Extended Service technology reduces downtime, improves productivity and lowers production costs of the life of the engine.
- One product for ALL heavy & light duty applications.
- No poison schedule no.
- No dangerous goods class.
- No Hazchem Code.
- Biodegradable.
- Reduced maintenance.
- Premixed – no costly mixing mistakes.

PGPlus™ Concentrate



Part No.	Size
CC2657	4lt
CC2658	20lt
CC2659	208lt
CC2832	1,000lt

Extended Service Life

Product

The alternative to PGPlus™ Premix is PGPlus™ Concentrate. Mix 1:1 with water to achieve a fully formulated heavy duty coolant.

Can be used undiluted to adjust the Propylene Glycol portion of the coolant should it fall below the minimum 40%.

Satisfies major Heavy Duty engine and OEM specifications in accordance with TMC RP330 & RP338 and ASTM D6211, D5216, D4985 and D3306.

Benefits

- Improved protection from liner pitting, scale, aluminium corrosion and water pump seal leakage.
- Extended Service technology reduces downtime, improves productivity and lowers production costs of the life of the engine.
- One product for ALL heavy & light duty applications.
- No poison schedule no.
- No dangerous goods class.
- No Hazchem Code.
- Biodegradable.
- Reduced maintenance.



Fully Formulated Engine Coolants

Compleat-50™ Premix



Part No.	Size
CC2888	4lt
CC2889	20lt
CC2855	208lt

- Freeze Point -37°C
- Raises Boil Point 8%

Standard Service Life

Product

Compleat-50™ Premix is a fully formulated coolant maintained with Standard Service Interval Products. A coolant already pre-charged with DCA4™ SCA ready for use. Compleat-50™ consists of 50% Ethylene Glycol with 0.4 units of DCA4™ per litre in premixed formulation. This exceeds the minimum recommended SCA level for added protection. Meets appropriate TMCRP329 recommendations and ASTM-D-6210-98 test standard for heavy duty coolants.

Benefits

- Eliminate the need of SCA pre-charging and provide the greatest opportunity for successful cooling system maintenance.
- Prevent scaling, foaming and corrosion.
- Provide liner pitting protection not found in low silicate coolants.
- Eliminate the need for SCA mixing.

Compleat-50™ Concentrate



Part No.	Size
CC2642	4lt
CC2639	20lt
CC2640	208lt

Standard Service Life

Product

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

Mix 1:1 with water to achieve a fully formulated heavy duty coolant.

Can be used undiluted to adjust the Ethylene Glycol portion of the coolant should it fall below the minimum 40%.

Benefits

- Eliminate the need of SCA pre-charging and provide the greatest opportunity for successful cooling system maintenance.
- Prevent scaling, foaming and corrosion.
- Provide liner pitting protection not found in low silicate coolants.
- Eliminate the need for SCA mixing.



Service Maintenance Products

ES Extender™



Part No.	Size
CC2840	.946lt

Extended Service Life

Product
An alternative organic based chemical replacement to the ES slow release ES Chemical Filters. To extend coolant protection life add after one year or 250,000kms or 4,000 hours to boost PGPlus™ coolant for another service interval.

- Benefits**
- Low in TDS (Total Dissolved Solids) reducing water pump seal wear.
 - Optimises total coolant life and reduces disposal costs.

Coolant Filters



WF2121*	Slow release ES chemical DCA4+	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 DCA4+	3/4-20 thd
WF2134	Mack ES non-chemical	3/4-20 thd
WF2135	Mack slow release ES chemical	1-16 thd
WF2137	Mack ES non-chemical	1-16 thd
WF2126	Cummins Signature & ISX up to 250K km chemical DCA4+	M36 x 2-6G thd
WF2127	Cummins Signature up to 250K km non-chemical	M36 x 2-6G thd
WF2128	Volvo slow release ES chemical DCA4+	M16 x 1.5 thd
WF2129	Volvo ES non-chemical	M16 x 1.5 thd
WF2130**	Volvo ES non-chemical with increased media	M16 x 1.5 thd

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

**Offers additional contaminant holding capacity.

Extended Service Life

Product
ES Filters are for use in conjunction with PGPlus™ or ES coolants. ES chemical filters use a patented combination of time release pills and a diffusion orifice to slowly release chemicals during the extended service intervals. 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. Coolant filters featuring StrataPore™ provide improved efficiency and capacity beneficial for extended filter service intervals and facilitates extended coolant life. StrataPore™ media strips small amounts of oil from the coolant. Severe oil contamination affects coolant performance. Contaminated coolant and filters should be discarded and replaced.

- Benefits**
- 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.
 - Lasts up to 10 times longer.

DCA4™ Liquid



Part No.	Size	Units
DCA 60L	0.47lt	5
DCA 65L	1.89lt	20
DCA 75L	18.9lt	200
DCA 80L	208lt	2200

Standard Service Life

Product
An alternative to DCA4™ standard service interval filters. DCA4™ liquid can be used in conjunction with Compleat-50™ premix coolants.

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

Service Maintenance Products

DCA4+™ Filters

Standard Service Life



Product

Coolant filters deliver a regular accurate chemical package to the coolant to replace those depleted. This filter range, now carries the same DCA4+™ chemical as found in the ES range. The chemical however is in immediate release form and not slow release. Also, in such a quantity to reinhabit the coolant sufficiently, based on correct selection for system capacity, for use at traditional standard service intervals with any of the Fleetguard coolants.

Benefits

- Dramatic drop in water pump seal failures on engines using coolant filters to those that do not.
- Improved solder and aluminium protection over that of traditional borate only buffered SCA products.
- Improved liner pitting protection.
- Improved tolerance to over treatment.
- Reduced solids, better for water pumps.
- Capture abrasive particulate.

WF2070	2 Units	WF2074	12 Units	WF2083	4 Units	Mack	3/4 W/20
WF2071	4 Units	WF2075	15 Units	WF2082	6 Units	Mack	1-16 UN-2B
WF2072	6 Units	WF 2076	23 Units	WF2015	8 Units	Mack	3/4 W/20
WF2073	8 Units			WF2022	11 Units	Mack	1-16 UN-2B

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

All Service only chemical DCA4+™ – not suitable for pre-charge.

Note: All have 11/16 W/16 threads

Non Chemical Filters

Standard Service Life



Product

Same quantity as the DCA4+™ filled filters however without chemical.

Benefits

- Provides erosion corrosion protection when some other SCA treatment is preferred.

WF2077	11/16 W/16	Cummins, Caterpillar, Detroit & Other
WF2078	3/4 W/20	Mack
WF2079	1-16 UN-2B	Mack

Filter Head Assembly

Product

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

Benefits

- Fool proof method of applying correct level of SCA into the system regularly.
- Erosion corrosion protection by filtering sand and dirt.



Std Single Head	204163S
Inlet & Outlet	3/8" NPT

Std Single Bracket	256535S
Head & Bracket Assembly	257715S

Severe Service Head	3904378S
Similar to 204163S with steel thread spud.	

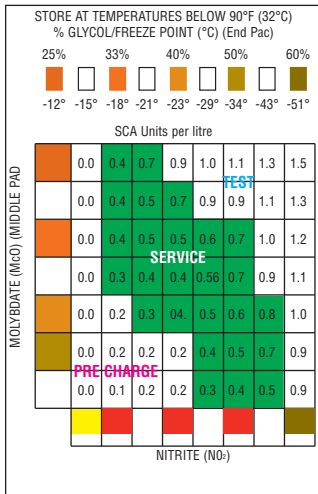
Std Single Retro Kit	#WFK1
Components	
Std Single Head	204163S
Bracket	256535S
2 x Bronze Valve	3/8" NPTF
2 x Bronze Tail Connector	3/8" NPTF

Dual Head	215617S
Inlet & Outlet	1/2" NPT
Mounting Bracket	256535S



Service Maintenance Products

3-Way™ Coolant Additive Test Strips



Part No.

CC2602M

Size

Bottle of 50

CC2602AM

4 Pack

Product

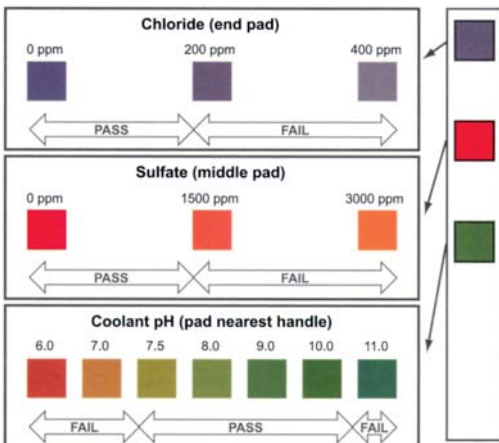
The 3-Way™ test Kit is an easy and effective means of checking percentage of glycol and chemical concentration. By measuring nitrite and molybdate this indicates level of liner pitting protection in engine coolant.

Benefits

- Allows on site analysis.
- Cost effective.
- Simple to use and read.
- Light and compact.

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

Quik-Check™ Coolant Quality Test Strips



Part No.

CC2607C

Size

2 Strips

Product

Provide a simple and effective means of testing overall coolant condition regardless of SCA chemical and glycol readings. Is the test to determine if coolant is still servicable or needs replacing. Tests pH, chloride and sulphate levels. Test at least once a year to ensure coolant overall condition.

Benefits

- Allows on site analysis.
- Cost effective.
- Simple to use and read.
- Light and compact.

Note: Is in addition to 3-Way™ Coolant Additive Test and not an alternative.

Refractometer



Glycol Tester

Part No.

CC2800

Product

A refractometer is an accurate tool for determining coolant glycol level. 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.

Benefits

- Most accurate field test tool available (should not be used in lieu of SCA chemical testing).
- Measures freeze point and percentage of:
 - PG (Propylene Glycol)
 - EG (Ethylene Glycol)
- Measures Battery condition.

Service Maintenance Products

Fleet-tech™ Restore™



Part No.	Size
CC2610	3.785lt
CC2611	18.9lt
CC2612	208lt

Mix 1:10

System Cleaner

Product

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

Benefits

- Excellent silicate gel cleaner.

Fleet-tech™ Restore Plus™



Part No.	Size
CC2638	3.785lt
CC2637	208lt

Mix 1:10

System Cleaner

Product

Restore Plus™ is an organic acid based chelating cleaner especially designed to remove heavy rust and scale deposits. Being organic it does not require flushing with a neutralising agent, just plain clean water. It is better at removal of oil and fuel fouling than alkaline cleaners. Removes contamination without harming the metal surfaces, gaskets, hoses or plastic parts of the cooling system.

Benefits

- Cleans system quickly and effectively with a 45 minute to 2 hour flush.
- Excellent cleaner for scale, oil grease and rust.
- Non-Hazardous Substance.
- Non-Dangerous Goods.

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

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

Fleet-tech™ Biocide



Part No.	Size
CC2661	.946lt
CC2663	3.785lt

Mix 1:10,000

Product

Fleet-tech™ Microbicide is dual-phased that is soluble in both water and fuel. It concentrates where the microbes thrive, at the fuel/water interface. It quickly kills micro organisms, bacteria and fungi in fuels and oils. Fuel is vulnerable to water contamination during transport and storage. Once water is in the system, micro organisms will thrive and multiply. Treat storage fuel tanks twice a year.

Benefits

- Kills micro organisms where they grow.
- Protects tanks from micro organism influenced corrosion.
- 100% bio-degradable.
- Twice a year treatment. (not every tank fill)
- One of only two products in the world that works within both the water and the fuel.

Fuel Tank Testing

CC2523
CC2524

Fuel Sampling Kit comes with Bacon Bomb to be used in conjunction with:-

Microbicide Test Kit comes with 10 test packs for testing Bacteria, Mould and Yeast. 72 hours result time.

Fuel Conditioning

Fleet-tech™ Winter Conditioner



Part No.	Size	
CC2592	.946lt	Base
CC2593	18.9lt	Base
CC2595	9.475lt	Concentrate
Mix 1:1,000		Base
Mix 1:3,000		Concentrate

Product
A multi-functional diesel fuel additive designed to ensure reliable fuel system performance in severe winter conditions. Fleet-tech™ Winter Conditioner Super Concentrate is a super concentrated formula designed to treat bulk diesel fuel storage tanks. Simply add the proper amount of Concentrate to the tank and load bulk diesel fuel.

- Benefits**
- Reduces cold filter plugging point (CFPP) down to -16°C.
 - Prevents fuel filter gelling, fuel line freeze up and fuel system freeze damage.
 - Protects against corrosion for longer injector life.
 - Improves fuel economy.
 - Increases power.
 - Prevents filter plugging for extended service.
 - Meets CECOSB3379001-07

Fleet-tech™ Asphaltene Conditioner



Part No.	Size	
CC2597	.946lt	Base
CC2596	9.475lt	Concentrate
Mix 1:1,000		Base
Mix 1:3,000		Concentrate

Product
Asphaltene conditioning enhances fuel stability for longer fuel filter life and increased vehicle uptime. With its proprietary formula, it lubricates the fuel system, while keeping fuel injectors clean to improve fuel economy. In addition, Fleet-tech™ Asphaltene Conditioner helps diesel fuels meet Truck Maintenance Council (TMC) requirements for Cummins L10 injector cleanliness specification at recommended treatment.

- Benefits**
- Improves fuel economy and power.
 - Improves fuel filter life.
 - Improves fuel lubricity.
 - Improves exhaust emissions.
 - Prevents fuel system corrosion.
 - Meets EMA Lubricity specification.
 - Meets CUMMINS L10 injector cleanliness specification.
 - Meets PEUGEOT XUD-9 deposit test specification.

Fleet-tech™ Turbo Diesel



Part No.	Size	
CC2588	.473lt	

Product
The Fleet-tech™ Turbo Diesel All Seasons Fuel Additive is a convenient additive package that will address all major fuel quality concerns in one simple dosing step.

- Benefits**
- Pour point and cold filter plugging point suppression.
 - Fuel line freeze-up prevention.
 - Corrosion inhibition.
 - Fuel Economy and power optimization.
 - Fuel injector cleaners. Meets Cummins L10 Specification.
 - Fuel filter life extension.
 - Cetane booster to reduce hard starts and engine noise.
 - Lubricity enhancement.

Coolant Maintenance Recommendations

For Standard Service 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

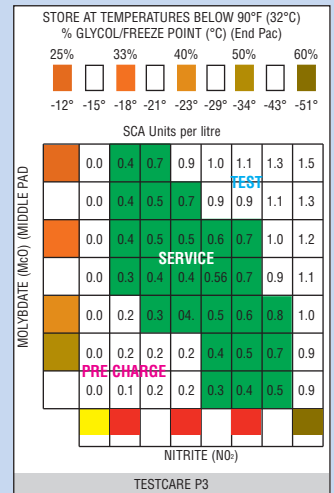
Replace service filter and add 1 litre of DCA4 per 32 litres of coolant.

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.



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 SCA units below					
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 76 litres.</u>						
Install service filter(s) and/or liquid containing number of SCA units below						
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

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 of ES Extender™ 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 CC2602AM

Below 0.3 units per litre

Add 2 litres of ES EXTENDER™ (2 x CC2840) per 60 litres of coolant

0.3 - 0.8 units per litre

Add 1 litre of ES EXTENDER™ (1 x CC2840) per 60 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

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 PGPlus™ 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 Plus™ 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										
Glycol %	0	10	15	20	25	30	35	40	45	50

Glossary of Terms

ANTIFREEZE

A base containing ethylene glycol or propylene glycol and chemical additives to prevent corrosion, foaming and other damage to the cooling system components. The most common mixture is to 50% water.

ASPHALTENE CONDITIONERS

Fleet-tech™ Asphaltene Conditioners are proprietary mixtures of aliphatic hydrocarbons formulated to clean fuel injectors and stabilise diesel fuel.

ASTM

American Society for Testing of Materials (www.astm.org). Most important standards setting organization in the world. ASTM publish specifications for engine coolants.

BORATE

A pH buffer used in some antifreezes and SCAs to maintain the pH of coolant as it ages.

BUFFER

Part of the chemical inhibitor package which absorbs any free acid to prevent the coolant from becoming acidic and damaging the engine (see also pH and Reserve Alkalinity).

CARBOXYLATES

Organic acids having the fragment COOH in the molecule. Used to compose OAT coolants.

CHARGE

To charge or pre-charge a low silicate ASTM 4985 specification antifreeze and 50% water mix to make suitable for heavy duty diesel engines. The preferred method is to use fully formulated coolant.

CHELATING CLEANER

A cleaner containing a chelating agent; an organic compound capable of forming chemical bonds with metals.

CLOUD POINT

The cloud point of a liquid is a measure of the degree of crystallization in a stock that can be measured by the refractive index

COLD FILTER PLUGGING POINT

The CFPP is the higher temperature at which a determined fuel sample stops to come through a standardized filtration apparatus in a limited time and when it is cooled under normalized conditions.

CONDEMNATION LIMIT

The point at which individual, critical contaminants within the coolant signal the end of the life of that coolant.

CONVENTIONAL COOLANT

Glycol based coolant using a mainly inorganic based inhibitor package such as borate, phosphate, nitrite, nitrate, silicate etc.

COOLANT

The fluid in the cooling system, usually 50% antifreeze and 50% water.

COOLANT FILTER

A filter through which the coolant flows. These filters are widely used as delivery devices for SCA chemicals. Care is necessary to insure the proper size filter, containing the proper chemical dose, is being used. Extended life slow release coolant filters are now used with extended life coolants.

DEIONISED (DI) WATER

Water purified by deionisation. It is chemically pure, and contains no calcium or magnesium found in many tap waters. It is recommended as the make up for coolant, especially extended service coolants.

DEPLETION RATE

The rate at which the corrosion inhibitors within a coolant deplete or wear out as they protect the cooling system.

DILUTION

By adding an antifreeze/water only mixture to the coolant the inhibitor level can be reduced. This is why the use of fully formulated, premixed coolant such as either PGPlus™ or Compleat-50™ is recommended.

DISTILLED WATER

Water which is purified by being boiled and the steam is condensed and collected.

ESI

Extended service interval.

ETHYLENE GLYCOL (EG)

Is an organic chemical most often used as a base for antifreeze.

ESTERS

A chemical family found in some recycled antifreezes. These chemicals quickly deplete the inhibitor package, acidify the coolant and cause catastrophic cooling system failure in remarkably short periods of time.

FREEZE POINT

Measured by a specific ASTM test, the point where coolant freezes.

FULLY FORMULATED

The term describes heavy duty coolants that contain all necessary chemicals to protect diesel as well as car systems. The ASTM specification for fully formulated coolant, ASTM D6210, requires simultaneous compliance with all previous specifications. This is now the preferred type of coolant to be used as recommended by many leading engine manufacturers.

HARDNESS SALTS

The minerals usually found in most tap water, based on calcium and magnesium salts.

HYDROMETER

A testing device used to measure the concentration of glycol by measuring its specific gravity (sg) or density.

HYBRID COOLANT

Glycol based coolant using part organic acid and part inorganic corrosion inhibitor package.

MOLYBDATE

Present in Fleetguards' DCA-4 corrosion inhibitor packages and coolant technology, a component to prevent cylinder liner cavitation and protect hard and soft metals from corrosion.

NITRATE

A general anti-corrosion additive that is especially effective in preventing aluminium and solder corrosion.

NITRITE

Present in all good SCAs and fully formulated coolants, it is the most important additive for preventing cylinder liner cavitation.

Glossary of Terms

OAT COOLANT

Organic acid technology-coolant using essentially organic acids/carboxylates for corrosion inhibitor package.

ORGANIC ACID

A large family of chemicals used to make OAT and hybrid coolants.

PH

A scale that indicates the acidity or alkalinity of fluid. The scale runs from 0 to 14 with values below 7 being acidic and those above 7 being alkaline. Most coolant and SCA solutions range from 7.5 to 11.0. Coolant becomes unstable if pH drops too much while in use.

PARTS PER MILLION (PPM)

A ratio or way of expressing the concentration of a chemical.

PHOSPHATE

A pH buffer used in some antifreezes and SCAs to maintain the pH of coolant as it ages. An alternative to borate.

PRE-CHARGED

A term to describe antifreeze that contains SCA. It is now obsolete; the term fully formulated is much better.

PROPYLENE GLYCOL (PG)

An alternative organic chemical sometimes used as an antifreeze base, slightly more expensive and more environmentally friendly than ethylene glycol.

REFRACTOMETER

An optical testing device used to measure the concentration of glycol using the principle of refractive index (how much a beam of light is bent as it passes through a sample of coolant).

RESERVE ALKALINITY

The ability of a coolant to resist aging as reflected by the amount of hydrochloric acid required to lower pH to 7.0 in an ASTM test.

SCA

Supplemental coolant additive – heavy duty inhibitor package used to bring a light duty coolant up to heavy duty status. No longer the preferred method, fully formulated coolant should be used.

SILICATE

By far, the best protection against aluminum corrosion.

SILICATE STABILIZER

A chemical used in the best coolants and SCAs to prevent silicate drop out.

SOLDER BLOOM

Solder corrosion caused by poorly inhibited coolant.

TOTAL DISSOLVED SOLIDS (TDS)

The concentration of everything dissolved in the coolant (water and glycol mixture) such as the inhibitors and hardness salts from tap water and dirt.



Complete Engine System Supplier

Other Fleetguard Product Catalogues Available



Part No. 3300966A



Part No. 3300998A

Asia Pacific Customer Assistance Locations

Australia

31 Garden Street
Kilsyth Victoria 3137 Australia
Tel. 1 800 032 037
Tel. 61 3 9721 9100
Fax. 1 800 032 036
Fax. 61 3 9721 9147
fleetassist.australia@cummins.com

New Zealand

Tel. 0800 448 363
Fax. 0800 448 367
fleetassist.australia@cummins.com

China

No. 9 Building, 353 RiYing North Road
Waigaoqiao Free Trade Zone
Pudong, Shanghai 200131 China
Tel. 86 21 50463918
Fax: 86 21 50463928
fleetassist.china@cummins.com

India

Fleetguard Filters Pvt. Ltd.
Kirkoskar House 100, Anand Park, Aundh
Pune - 411 007 India
Tel. 91 20 2588 3903-0537
Fax. 91 20 2588 7428
marketing@fleetguard-filtrum.com

Cummins Exhaust India Ltd
Plot No. 1, Silver Industrial Estate
Village Bhimpore
Dist. Daman (Union Territory)
Pin 396 210 India
Tel. 91 260 257384
Fax. 91 260 257238

Japan

PO Box 536, Ark Mori Building 22nd Floor
12-32 Akasaka 1-Chome
Minato-Ku, Tokyo, 107-6022 Japan
Tel. 81 3 3505 1851
Fax. 81 3 3505 0990
fleetassist.japan@cummins.com

Korea

1293-2, (4-NA-203) Jeongwang-Dong
Siheung-City, Gyunggi-Do, Korea 429-450
Tel. 82 31 432 0616-9
Fax. 82 31 432 9478
fleetmaster.korea@cummins.com

Singapore

8 Tanjong Penjuru
Jurong Industrial Estate
Singapore 609019
Tel. 65 6266 3833
Fax. 65 6265 6909
fleetassist.singapore@cummins.com

www.fleetguard.com

For more information, contact your nearest stockist or Cummins Filtration Customer Assistance Centre.



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