

Fleetguard®



ES Compleat™

Lifetime Heavy Duty Hybrid Antifreeze/Coolant



ES Compleat™ is formulated specifically for use in heavy-duty diesel engines. These products contain conventional heavy-duty chemical and organic corrosion inhibitors, which provide enhanced protection for diesel engines from liner pitting and hard water scale deposits.

In addition, ES Compleat™ products provide the highest water pump protection available in the marketplace.

Fleetguard ES Compleat™ Concentrate mixes readily with clean tap water or, better still, de-mineralised water (50/50 mix), while ES Compleat™ Premix is fully formulated with de-mineralised water and ready to use.

Performance

- Fully formulated Life-of-the-engine hybrid coolant with 1,600,000km useful life under normal conditions
- Test at 250,000km, 4,000 hours or once/year; only add SCA when needed
- Provides freeze protection up to -37 °C at 50/50 premix and -54 °C at 60/40 premix
- Maximum corrosion and liner pitting protection with conventional heavy duty chemical inhibitors and organic acids
- Fully meets requirements of ASTM D-6210, Cummins CES14603, CES14439, AFNOR NF R15-601
- Meets many leading OEM requirements including: Case New Holland, CAT, Cummins, DDC, EMD, Freightliner, International, John Deere, Komatsu, Kubota, Mack, Mitsubishi, PACCAR, Volvo, Waukesha

Versatility

- Available based on Ethylene Glycol (EG) or Propylene Glycol (PG), in Concentrate and Premix

Serviceability

- Minimal maintenance - does not require SCA pre-charge
- Always maintain the system coolant level by topping up the system with supplemental coolant additive (SCA)

ES Compleat™ is fully compatible with all other antifreeze/coolants and corrosion inhibitor packages. ES Compleat™ Antifreezes are universal products highly recommended for use in all heavy-duty diesel engines. ES Compleat™ is formulated to last till engine rebuilt and can be used until contamination levels are exceeded.

Use ES Compleat to provide superior engine protection and extend service intervals.

Typical properties	ASTM test no.	EG Conc.	EG Premix 50/50	EG Premix 40/60	PG Conc.	PG Premix 50/50
Colour	Visual	Blue	Blue	Blue	Blue	Blue
Specific Gravity @15°C	D1122	1.13	1.07	1.06	1.05	1.045
pH	D1287	10.5	10.5	10.5	10.5	10.5
Reserve Alkalinity (ml)	D1121	10.0	> 5.0	> 5.0	10.0	> 5.0
Freeze point (°C)	D1177	< -14	< -36	< -24	< -56	< -32
Boiling point (°C)	D1120	> 174	> 108	> 106	> 160	> 105
Water, weight (%)	D1123	4	< 47	59	4	< 47
Glycol, weight (%)	-----	> 95	> 51	41	> 95	> 51
Glassware corrosion test	D1384	Pass	Pass	Pass	Pass	Pass
Water pump cavitation test	D2809	Pass	Pass	Pass	Pass	Pass
Aluminium corrosion test	D4340	Pass	Pass	Pass	Pass	Pass
Simulated service test	D2570	Pass	Pass	Pass	Pass	Pass
Ash content (%)	D1119	< 5	< 2.5	< 2.5	< 5	< 2.5
Chloride (ppm)	-----	< 25	< 25	< 25	< 25	< 25

ES Compleat is available in the following packaging sizes...

	EG Concentrate	EG PreMix 50/50*	EG PreMix 40/60*	PG Concentrate	PG PreMix 50/50*
5 Liter	CC2747M	CC2748M	N/A	CC2751M	CC2752M
20 Liter	CC2749M	CC2750M	N/A	CC2753M	CC2754M
208 Liter (Drum)	CC2821M	CC2826M	CC2919ESD**	CC2831M	CC2836M
1.000 Liter (Tote)	CC2851M	CC2852M	CC2919EST**	CC2853M	CC2854M
Bulk	CC2822M	CC2827M	N/A	CC2832M	CC2837M

* The first number indicates % glycol followed by the % water.

** 'Made to order' product : pls. ask customer assistance for details (MOQ)

Simplify your cooling system maintenance program.

How do I have to use ES Compleat™ concentrate?

In Heavy Duty applications it is necessary to maintain an antifreeze/ glycol (EG or PG) concentration of 40 to 60 %, depending on your work environment. A 50/50 mix of good quality water, or demineralised water, and antifreeze is preferred.

Do I also need to apply a 50/50 mix in hot climate conditions?

Besides offering freeze protection, antifreeze also increases the boiling point of the coolant to avoid boiling on hot surfaces (i.g. cylinder heads in the cooling system. Antifreeze also supports the suppression of liner pitting and cooling system corrosion.

What's the major benefit of using ES Compleat™ Premix products?

ES Compleat™ Premix is an easy and ready-to-use product, eliminating the risk of diluting the system. It contains the appropriate amount of inhibitors and anti-freeze (EG or PG) for your initial cooling system fill and worry-free top-up afterwards.

What are the benefits of using ES Compleat™ PG?

Propylene Glycol (PG) has a much lower toxicity than Ethylene Glycol (EG). PG is considered safer for use in the environment primarily because of the lower acute toxicity. PG is not considered a hazardous pollutant. OSHA has not seen the need to set a limit regarding human exposure. These benefits make PG a more user and environmentally friendly product.

Fleetguard's ES Compleat™ EG and PG Extended Life Coolants meet or exceed the performance requirements of the following:

TMC RP-338 Extended Life ● TMC RP-329 (EG) ● THC RP-330 (PG) ● ASTM D-4985 (EG) ● D-5216 (PG) ● ASTM D-6210 (EG) ● ASTM-6211 (PG)
 ● CID-A-A-52624 ● Waukesha® 4-1974D ● GM6038M ● Cummins® SB 3666132 ● Cummins® CES 14603 ● Caterpillar® ● Detroit Diesel® 7SE298 ● John Deere® 8650-5
 ● Case New Holland® Navistar® ● Freightliner® 48-22880 ● Volvo® ● PACCAR® ● MACK® 014617004 ● EMD M.I. 1784E