

# Coolant Filtration FACT SHEET



## ! The Importance of Coolant Filtration

40% of ALL engine problems originate from within the Cooling System with many being caused by inadequate maintenance practices. Modern diesel engines require a fully formulated, premixed, glycol based coolant containing a heavy duty additive package and de-ionised water. You would not consider messing about with lubricating oil, mixing in additional additives etc. so why do it with Coolant ?

## The Cooling System - An Extreme Environment

The Cooling System is a very aggressive environment and can become a corrosion nightmare if not maintained correctly. A relatively small volume of Coolant is propelled around the Cooling System at high velocity (typically 45,000 to 60,000 litres/hour), there are some very high temperatures involved (3,000°C in the combustion chamber) and various metallic components plus other materials. In effect, the Cooling System can virtually become a giant battery resulting in corrosion and ultimately something will fail! This is why control of the Coolant pH is vital. Whether it is a simple Coolant leak from a corroded radiator or a more expensive engine rebuild because of liner cavitation and corrosion, the net result is the same. If the engine breaks down and cannot operate, the vehicle or machine is not working and when this happens it is not earning its living. It's as simple as that !

## ! Start Clean - Stay Clean

The largest problem we face is that glycol (also referred to as antifreeze) has been used for years to protect the Coolant from freezing in some countries. What is very often overlooked however, is that it also raises the boiling point of the Coolant and should protect the Cooling System from corrosion. These last two points are why most OEM's require the use of 40% to 60% glycol based Coolant to be used all year round irrespective of the ambient climate/temperature. A 50% glycol/water solution will increase the boiling point from 100°C to 108°C, suppress the freezing point from 0°C to -37°C and provide good corrosion protection capabilities. A Water Filter is also an important part of many cooling Systems. Not only is it a visible reminder that the Cooling System needs to be serviced, it provides a way of maintaining both the corrosion inhibitor level and the cleanliness level within the coolant thus protecting the water pump from abrasive wear. The key to a reliable cooling system is to Start Clean/Stay Clean. The best way to achieve this is by using Fully Formulated, Pre-Mixed, Life Time Coolant for 1st Fill/Top Up together with Correct Maintenance Practices.

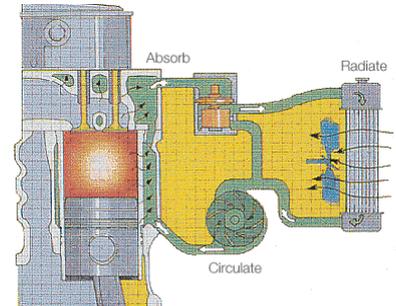
## ! The Fleetguard Product Solution

There are many products available in the Fleetguard range to assist with Cooling System maintenance:

- **Ethylene Glycol (EG) and Propylene Glycol (PG) based Fully Formulated Coolants (ES Complet)**
    - Available both as pre-mixed products, using de-ionised water, which are ready to use.
    - Then there is the more traditional concentrated format requiring dilution with good quality water before use.
- These products are available in a range of package sizes from 5L through to bulk tanker deliveries.
- **DCA (Diesel Coolant Additive) heavy duty corrosion inhibitor**
    - Available as a liquid concentrate to allow initial charging of a standard antifreeze product or to re-charge a coolant which is low in inhibitor levels.
    - Available in a range of package sizes from 0.5L to 208L
    - Also available in our spin-on water filter product as a routine maintenance tool
  - **Cooling System flushing/cleaning agents to remove scale, corrosion products, oil and gel contamination etc. (Restore and Restore Plus)**
  - **Various test kits and Refractometers etc. to enable the checking of Coolant**
    - Overall freeze protection and key inhibitor quantity levels
    - Overall Quality of the coolant (is it fit for continued use or is it contaminated)
    - Water Quality – is this water suitable for use in a cooling system
  - **Range of Extended Service Interval products which help to maximise the life of the Coolant and safeguard the operators investment at the lowest overall cost**

It is important to understand that Coolant is not a 'fit and forget' item. It needs to be maintained, tested and inspected on a regular basis and periodically will require to be changed out. It should be remembered that dosing instructions need to be rigorously followed to ensure full system protection. The key thing to remember as far as the Cooling System is concerned is: **If you look after the Coolant, the Coolant will look after the Cooling System and then the Cooling System can look after the engine.** Fleetguard has an extensive range of Water Filters covering OEM's as diverse as Volvo, Scania, Iveco, Caterpillar, Komatsu, CNH, Navistar, Perkins and Mack.

▼  
The Cooling System



▼  
The Real World



▼  
Fully Formulated =  
Glycol + deionised water + DCA

▼  
Fill-Maintain-Control



The wide range of Coolant Products

# Check your knowledge about Coolant

## 1 Other than providing freeze protection, what are the other two main benefits of good coolant?

- a) It's a fit & forget item and it allows service intervals to be extended
- b) Raise the boiling point and provide corrosion protection
- c) Ethylene glycol and propylene glycol

## 2 What are the three benefits of having a mechanical filter on the Cooling System of an engine?

- a) It controls the pH, flow rate and boiling point of the coolant
- b) It allows the use of a fully formulated, pre-mixed, lifetime coolant
- c) It's a visible service reminder, a method of maintaining the corrosion inhibitor level and a way to manage the cleanliness level of the coolant

## 3 What are the three most important factors to ensure reliable cooling system operation?

- a) Start Clean/Stay Clean, use a Fully Formulated Pre-Mixed Life Time Coolant for 1st Fill and Top Up, and Correct Maintenance Practices.
- b) Absorb, circulate and radiate the excess heat from the engine
- c) Use water only where there is no risk of freezing, in cold climates use the minimum amount of glycol required to protect from freezing and drain down the coolant in the summer months and replace with water only.

Answers:  
a) 3  
b) 1  
c) 2

Other Fact Sheets available:



**Air Filtration**  
LT36178



**Fuel Filtration**  
LT36179



**Lube Filtration**  
LT36180



**Hydraulic Filtration**  
LT36182