



CENTURY AUTOCARE FACTSHEET – ANTI-FREEZE

In the good old days as winter approached, we used to drain a few pints of water from our cars cooling system, and tip in the equivalent quantity of anti-freeze from our local shop. However, technology has moved on, and has even affected good old anti-freeze.

We now have a bewildering choice of colours, specifications, and brands. Many customers make their way to our St Helens garage confused about whether they can mix the various types of anti-freeze now available. So let me attempt to break them down into more easily understood terms and try to clear up the confusion. First of all it's probably helpful to explain what the cooling system does.

The internal combustion engine creates terrific heat which can cause catastrophic damage to an engine if the heat isn't somehow dissipated. This is achieved by adding a cooling system to your car. Very simply, coolant is circulated in small pockets, galleries and tubes around your engine; the heat is absorbed into the coolant, and then circulated into your radiator,

The radiator consists of a collection of many fine tubes through which the hot water passes, and is then cooled by the force of air from either forward motion, or your cars integral fan. The cooled water from the radiator then circulates back in to your engine and is then replaced by hot water to be cooled again, and so on and so on. Your cooling system is sealed, and pressurised so the water has a substantially higher boiling point than unpressurised water

Anti-freeze has to perform a number of functions in your cars cooling system. As its name suggests, its most obvious function is to stop your coolant freezing. We can all remember school experiments where we would fill a glass bottle with water and then freeze the bottle, the bottle would of course break under the expanding pressure of the ice. The same is true of our cooling system, if we allowed the water in our cooling system to freeze, we would get the same effect, bursting or damaging engine components and radiators. Not recommended.

As well as preventing freezing, anti-freeze should prevent corrosion, (many engine components are now manufactured from aluminium, which is particularly prone to corrosion). So anti-freeze has the big job of enhancing the dissipation of heat, lubricating various components, preventing the build-up of harmful sludge and contaminants, and of course, preventing the formation of ice.

Many customers don't realise that anti-freeze has to be periodically topped up so the first check we carry out at [Century AutoCare](#) is to see if it is the correct concentration. How do we do this? A simple hydrometer test takes a few minutes and gives an accurate indication as to the temperature that your coolant will freeze, but it will not give any indication as to how effective you coolant is at protecting against corrosion damage.

Almost all modern anti-freeze is based on a chemical called ethylene glycol, numerous other

chemicals are added to your antifreeze to assist it in performing its various other duties. Basically you should be able to tell the various types of antifreeze apart by colour, which is likely to be either blue or red.

Blue is the more traditional anti-freeze and would generally have a useful life span of two years after which it should be renewed. The freezing properties generally remain effective for longer, but the other functions, primarily corrosion protection, decline over time and after 2 years are probably not sufficiently protecting your engine.

Red antifreeze has a different mix of chemicals that have much longer lasting properties, and generally red antifreeze should have a life span of up to 5 years. As with blue, the antifreeze properties may actually last longer, but the anti-corrosion benefits will cease to provide sufficient protection over time.

As the blue and red have different chemical properties, they should not be mixed. If you mix different antifreeze types it can have an adverse effect, and cause a chemical reaction. This could actually accelerate the corrosion process inside your engine. Some manufacturers claim to have created anti-freeze that can be used with any brand. Our view at Century AutoCare is that that scientists are developing and changing the chemical make ups so fast and often, that it is better to err to the side of caution and always stick with your chosen brand and type.

In older cars, it can be quite difficult to establish just what was in there originally, as often a poorly maintained cooling system will contain a muddy brown liquid. Was it red or blue? Who knows?

If this is the case, the correct course of action would be to drain the cooling system completely, thoroughly flushing the system with clean water, and replacing the coolant with a 50/50 mix of your chosen antifreeze and water. Always keep a note of the type of anti-freeze you have used, and any periodic topping up should be with the same 50/50 mix. At Century AutoCare we will tell you what antifreeze we have used so you can top up with confidence.

Remember that regular topping up with just water, will eventually dilute your coolant to a point where it may not be providing sufficient protection for your cooling system. If you find you have to top up your cooling system often, it may well be that you have a leak. It's then a good idea to call into the workshop where we can test your cooling system for leaks.

Please bear in mind that anti-freeze is toxic, and contains many harmful chemicals. Never allow anti-freeze to enter the water course or any drains. Most local council tips have facilities where you can dispose of your old coolant free of charge.

If all this sounds interesting but seems like a lot of effort then why not ask for the [Century AutoCare](#) free winter check? We will check the strength and condition of your anti-freeze and let you know what (if anything) needs to be done. The chances are we can solve any problems while you wait.

Century AutoCare
Merton Bank Road
St Helens
Meseaside

Telephone 01744 753333

Web <http://centuryautocare.wordpress.com>