

# **COOLANT FOR OLDER MOTOR VEHICLES**



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This is a summary of the correspondence by **Bruce Acutt** in his quest to find a suitable coolant for his 1950 Traction. Dec 2010

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Hi Ted, Rob & Leigh,

I went onto the nulon.com.au website and checked out their section on coolants. They mentioned their (HOAT) and (OAT) coolants and a "glycol free inhibitor suitable for older engines" but when their products were mentioned below the write up, they did not specify which was which.

I sent Nulon the email below asking if they can provide us with more info.

There is another Coolant manufacturer that is popular in or shops, Website = stalyce.com I will check it out as well.  
Another manufacturer is Techalloy (spelling??)

Coolant Manufacturers are subject to international standards/codes for their products, similar to oil manufacturers.  
Ie. One coolant said that it conforms with; AS2108:1:1997 (Type B) standard.

Leigh, I will send you the link to the UK article.  
Regards Bruce.

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From: Bruce Acutt  
Sent: Friday, 10 December 2010 10:25 AM  
To: 'info@nulon.com.au'  
Subject: Coolant for older vehicles

Dear Sir,

Please find attached an article that is on a website for Old Citroens in the United Kingdom.  
I have a 1950 Citroen Light 15 Traction Avant and am a member of The Citroen Society in Australia.

Would you please be able to assist us to advise our members of what Nulon product we should be using in the radiators of older cars.  
Any Technical advice would be much appreciated.

I looked at the Nulon Website Coolant section and at the top it mentioned (HOAT) and (OAT) products and "we also offer a radiator Corrosion inhibitor that is Glycol free for older vehicles"  
but the actual products listed below did not say whether they were the (HOAT) or (OAT) coolants or which was the coolant suitable for the older vehicles.

Please could Nulon provide us with assistance and advise on this matter.

Regards, Bruce Acutt.

**Article from FBHVC (Federation of British Historic Vehicle Clubs) referred to by Bruce Arcutt**

**ANTIFREEZE**

*Technology moves forward and new products are constantly being launched with claims to improved formulations and performance. With the recent bitterly cold weather in January antifreeze has been in the headlines, with some alarming stories which at first seem to be about the well-known tendency of antifreeze to find the tiniest hole and cause leakages-but in these cases it has led to catastrophic engine problems.*

*Traditional blue ethylene glycol is a toxic but highly effective antifreeze and contains silicates as an inhibitor to help prevent corrosion in an engine with mixed metals in its make-up. Bluecol and Blue Star are well known brand names and both of these ARE declared suitable for 'classic cars' on their company web sites.*

*Be aware that there are also low- or no-silicate ethylene glycol formulations (usually red) available which may NOT be suitable for all engines.*

*Propylene glycol is another well-known and less toxic antifreeze formula and usually contains silicates but Comma, the main manufacturer, have now discontinued it in favour of an ethylene glycol product containing 'bittering agents' to make it less palatable and minimise the risk of accidental poisoning. Both of the above products use inorganic additive technology (IAT).*

*Recently problems have been reported concerning the use of antifreeze mixtures using organic acid technology (OAT). OAT was introduced in the mid-1990s and the products are biodegradable, recyclable and do not contain either silicates or phosphates and are designed to be longer lasting.*

*However, these products do seem to cause problems in older engines; over and above the ability of antifreeze to find the smallest crevice and leak, OAT antifreezes have been accused of destroying seals and gaskets and causing a great deal of damage in 'old' engines.*

*For this reason the manufacturers DO NOT recommend the use of OAT antifreezes in historic vehicles. These products are usually coloured red, pink or orange.*

*The final category is HOAT. These products use hybrid organic acid technology in an ethylene glycol base with some silicates in the formulation alongside the organic corrosion inhibitors. The product is usually coloured green and ARE NOT recommended for use in historic vehicles.*

*The FBHVC are still researching this problem but their advice at the moment is:*

- *Only use blue coloured IAT antifreeze in historic vehicles*
- *Only use OAT products('advanced' or 'long life' antifreeze) if the vehicle used it when new and if specifically directed by the vehicle's manufacturer*
- *Never mix different types of antifreeze without thoroughly flushing out the system*

- *Always replace the coolant within the time scale specified by the antifreeze manufacturer as the corrosion inhibitors break down over time*

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Below is the reply from Nulon to Bruce's e-mail on 10 December 2010 requesting information on what coolant to use in his car.

Hi Bruce,

Both the Red (OAT) and Green (HOAT) Long Life (Glycol Based) coolants are not suitable for your Citroen. Nulon Ultra Cool coolant would be ideal for your vehicle as this is a corrosion inhibitor only and is design for older vehicle (pre 1984).

Please find below link containing information on the Nulon Ultracool.

[http://www.nulon.com.au/products/Ultra\\_Cool/](http://www.nulon.com.au/products/Ultra_Cool/)

Ultra Cool

Nulon Ultra Cool (R45) is formulated to keep your engine cool and rust free. It will keep your radiator and cooling system clean and free from corrosion, electrolysis, rust and scale build-up. R45 protects aluminium copper, cast iron, brass and solder and extends the life of all cooling system components.

Nulon Ultra Cool Anti-Corrosion Radiator Coolant (R45) is formulated to provide maximum rust and corrosion protection for your engine's cooling system. It will keep your radiator and cooling system clean and free from corrosion, electrolysis, rust and scale build-up. Nulon Ultra Cool protects aluminium, copper, cast iron, brass and solder, and extends the life of all cooling system components.

Suits pre-1984 cooling system requirements

NOT suitable where anti-freeze/anti-boil coolant is specified. Use Nulon Long Life Concentrated Coolant (LL) for anti-freeze/anti-boil protection.

Nulon Ultra Cool (R45) contains corrosion inhibitors and is designed to provide maximum heat transfer in cooling systems where anti-freeze/anti-boil (glycol) is not specified. Heat transfer in the cooling system is done predominantly by water which has an excellent heat transfer coefficient. Glycol has the ability to extend the operating temperature range of a coolant, however it has a higher heat transfer coefficient than that of water. This is the main reason why non-glycol based coolants transfer heat much more efficiently than glycol based coolants.

In motor sport applications, Nulon Ultra Cool (R45) is a suitable alternate to glycol based coolant. Glycol is very slippery and is difficult to remove from the race track surfaces, which poses risks to other drivers on the track.

The use of tap water is not recommended for automotive cooling systems. Chlorine is usually added to tap water in order to kill bacteria and make it safe for drinking. However chlorine is found to be corrosive in cooling

systems. Tap water also contains minerals that can cause scaling when used in a cooling system. Use suitable demineralised water for use with R45.

Where a vehicle manufacturer particularly specifies the use of anti-freeze/anti-boil coolant with glycol it is essential to use it as some engines suffer from localised "hot spot" boiling and require a glycol coolant.

Benefits:

- \* Provides protection for up to 2 years or 40,000 km
- \* Concentrated solution - makes 10 litres
- \* Recommended for motor sport use
- \* Exceeds Australian Standard AS 2108-2004 Type B coolant
- \* Recommended for motor sport because it contains no glycol
- \* Harmless to hoses & seals
- \* Protects all cooling systems against corrosion, rust & scale

Regards,

Frank Machado  
Technical Support Co-ordinator

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**From:** Bruce Acutt [mailto:[Bruce@giralia.com.au](mailto:Bruce@giralia.com.au)]  
**Sent:** Friday, 10 December 2010 3:26 PM  
**To:** Cross Family; Robert Little; [leigh.miles@fronterra.com](mailto:leigh.miles@fronterra.com)  
**Subject:** Tectaloy

Gents,

Check out the [tectaloy.com](http://tectaloy.com) website.  
They have a wealth of information on coolants and as with Nulon they recommend an Ethylene Glycol free rust inhibitor coolant for older vehicles called Rustguard.

Interesting about how engine water can become electrified and aluminium in particular is corroded because it acts like a sacrificial anode.  
You can check the volts in the coolant with a multimeter.

Regards Bruce.