

Antifreeze in 2010

by Josh B. Malks

With winter approaching bringing below-freezing temperatures to much of North America, many ACD cars will be going into winter storage soon. If you live in an area where the temperature never drops below freezing, don't put anti-freeze in your radiator. Just add an anti-corrosion product to water. (I use No-Rosion.) If your tap water is soft, use that. If not, bottled drinking water from the supermarket is good. (Avoid "designer" waters; they have minerals added.)

If freezing temperatures occur in your hometown, it is important to pay attention to the current state of anti-freeze technology.

It appears that some coolant leakage in the UK and the USA have been traced to the new "long-life" anti-freezes. The exact reasons are not yet clear. Since alternatives are easily available, and it seems better to be safe than sorry, some information from other club publications is reprinted here.

I. Important warning regarding antifreeze

by Bill Kennedy, Technical VP, Silver Ghost Association.

NO OATS!

1. Use only IAT inhibited antifreeze. That means "Inorganic Additive Technology".
2. You cannot tell by the color.
3. You cannot tell by the type. Both ethylene glycol and propylene glycol could have either technology.
4. IAT may be called 'conventionally inhibited', but you really should know for sure before you pour it in.
5. You cannot tell by statements on the container about suitability for 'older cars'.
6. You cannot tell by the service life stated (although it will generally be longer for OAT fluids – they may state 'extended service').
7. Similarly, do not use NOAT or HOAT technology fluids.

Why? OAT and its related fluids were designed to have a longer service life than that of IAT coolants. Unfortunately that came with a set of bad side affects. Read more below.

Remember, NO OATs!

II. Details about antifreeze in 2010

by Derek J. Harris, Rolls-Royce Owners Club.

This note recently appeared on the website for Enthusiasts of Rolls-Royce and Bentley Motor Cars (www.rrbew.co.uk).

This is a dire warning concerning the change of formulae in various antifreeze products. Manufacturers have quietly moved to the new Organic Acid Technology (OAT) from the old Inorganic Additive Technology (IAT). That's fine for modern-day cars but in most cases the antifreeze is totally unsuitable to our types of cars and their ages. Unless the antifreeze is specifically stated as IAT, you need to check with the manufacturer's technical department. Whilst manufacturers say that the new technology is suitable for old cars, their definition of old means ten years.

There was also the story from (RR) Phantom III expert Stephe Boddice in the UK. Wanting to replace his two-year-old fluid Stephe bought new antifreeze for his PH I. His usual brand was out of stock so he bought the new "advanced" formula. It came with no warning of danger, saying it was suitable for old cars. Four weeks later he found pools of antifreeze under his car. Five months later he had a meeting with the National Technical Manager of the "advanced" coolant manufacturer. He was categorical in his statement that this "technology" is inappropriate for use in any Rolls-Royce or Bentley engine other than the latest Bentley GT and Goodwood Phantoms; no "ifs" and/or "buts"!

It turns out that "advanced" and "long-life" coolants are manufactured using an Organic Acid Technology (OAT) corrosion-inhibitor pack. The previous antifreeze used an Inorganic Additive Technology (IAT). Evidence supplied to the retailer by the manufacturer admits that the OAT-inhibited coolant is known to cause leak problems even in engines that do not use wet liners. The major fault with the inhibitor is that it attacks, amongst other things, silicone compounds. The most commonly used base compound for gasket sealants is silicone. It also attacks lead-based products (solder, babbitt), some yellow metals (cam bearings, radiators) and conventional gaskets and packing materials.

The conclusion: do not use OAT-inhibited coolant in your 20th century engine!

Inorganic Additive Technology (IAT) is the chemical composition for the traditional antifreezes that are blue in color in the UK and green in the US. An IAT can be used with either ethylene glycol (EG) or propylene glycol (PG). The normal IAT service life is two years or 30,000 miles. In the USA antifreeze with IAT is often called "conventionally-inhibited".

Organic Acid Technology (OAT) was the first long-life/extended-life antifreeze. OAT can be either EG or PG but is mostly EG-based. It was introduced in an effort to reduce maintenance costs, downtime and environmental disposal costs and issues. With the introduction of this totally new concept, antifreeze manufacturers wanted to

differentiate this new product from existing antifreezes. To accomplish this, they introduced different colored dyes for their long-life/extended-life products. Orange and red dyes were used first. These dye colors are still used by GM and Caterpillar. Now it appears there may be virtually no limit to the different dye colors: green, pink and blue have been added to the list of available OAT antifreezes. It is recommended that OAT not be mixed with any other antifreeze technology. The normal OAT antifreeze service life is five years or 150,000 miles.

Hybrid Organic Acid Technology (HOAT) is a combination of IAT and OAT with nitrates added. This makes HOAT suitable for use in both light-duty and heavy-duty systems. Currently, two manufacturers are using HOAT for their vehicles. The Daimler-Benz version is dyed orange and contains 10% recycled antifreeze. Ford Motor Company's version is dyed yellow and does not contain any recycled antifreeze. Both of these HOAT antifreezes use the marketing designator G-05. They are compatible with each other but mixing them with IAT or OAT is not recommended. The normal HOAT antifreeze service life is five years or 150,000 miles.

Nitrated Organic Acid Technology (NOAT) is an OAT with nitrates added. This makes NOAT suitable for use in both light- and heavy-duty systems. NOAT and HOAT are very similar in performance characteristics. The

normal NOAT service life is five years or 150,000 miles.

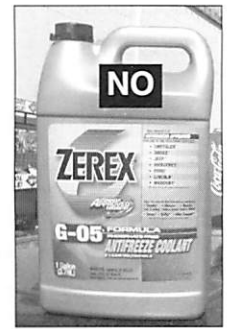
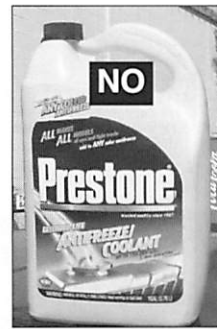
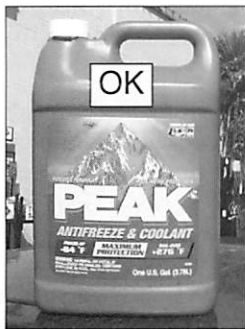
The color of antifreeze is no longer an accurate indicator as to whether it is an IAT, OAT, HOAT or NOAT formulation. There are currently at least two oranges, two reds, green, dark green, yellow, blue, blue-green, clear and pink dye colors available. Further, some antifreeze manufacturers market "universal" antifreeze they say is compatible with all OAT, HOAT and NOAT formulations. These "universal" formulas are not for use with IAT and they will not convert an IAT to a long-life or extended-life antifreeze.

The editor contacted the technical departments of three major manufacturers of antifreeze regarding the additive package in their products.

Peak says that their Peak Antifreeze and Coolant is an IAT formula. The container is blue. It is important that it NOT say "Long Life". Peak's Sierra brand is propylene glycol, for those who prefer that. It too uses an IAT formula.

Prestone says that ALL their current antifreezes are OAT formulas. Do not use Prestone antifreeze in your ACD car.

Zerex says that Zerex Original Green is an IAT formula. It comes in a white container. Do not use their G-05 formula in the gold jug.



If you missed it, here's a taste of what it looked like!



ACD Club board member Joel Givner prepares to start a drag race between two Model J Duesenbergs at the Ab Jenkins Memorial Exhibition of Speed and Stinson Fly-In at the Kendallville Airport on September 3. More competitors wait behind them. The event was part of the 2010 Auburn Annual Reunion. Full coverage in a coming issue.

Photo courtesy *The Star*, Auburn, Indiana.