

Compatibility of Pencool

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Introduction:

Many customers have expressed a desire for information and recommendations regarding the use of Pencool brand products and other brands of SCAs and/or antifreezes.

Pencool is compatible with most antifreezes and competitive SCA products, including Baldwin®, Fleetguard®, and all of the American OEM brand products. Pencool® 3000 is the first stabilized chemistry to be made available. This feature further increases its compatibility with other products.

Background:

Antifreeze varies from brand to brand and from country to country. For example, American automotive (light duty) antifreeze typically contains phosphate, silicate and nitrate as primary inhibitors. Other countries' suppliers may use alternative chemistries, including Triethanolamine (TEA), carboxylic acids, benzoate, or even soluble oils. Most American heavy-duty engine manufacturers currently recommend "fully-formulated" antifreeze that meets the ASTM D-6210 or TMC RP-329 specification. There is also carboxylic acid inhibited (orange or red/orange) antifreeze being installed at truck factories. It is easy to understand the concern which customers may have when faced with the prospect of mixing antifreezes and SCAs of either unknown origin or from different sources of supply. Recently, the issue of compatibility, defined as the ability of coolants and/or SCAs to be mixed without inherently interfering with each others' chemistries, has been discussed. A mixture would be considered incompatible if a reaction occurred resulting in chemicals falling out of the solution, or if another negative chemical reaction might take place which could harm the engine, its operator or its mechanic.

Penray's Recommendation:

For optimum performance, maintain your cooling systems as follows:

I. Use a proper initial fill coolant:

Use 30% to 60% fully formulated, (ASTM D-6210 / D-6211 specification) antifreeze and pure water. (See ASTM water quality recommendation) or, in warm climates, use 5% Pencool 3000 in pure water.

II. Periodic maintenance:

Test

Test the coolant at every PM interval to assure that adequate freeze point and nitrite levels are being maintained (1,200 ppm min.). Use a Penray Coolant Test Strip. Do not use a molybdate-dependant test method, such as a Fleetguard® test strip, to evaluate coolants containing Penray technology.

Maintain the SCA level

Change the Penray Need-Release® filter every 2,500 hours, 15 months or 120,000 miles, whichever comes first. (If using conventional Pencool, every 15,000 miles or 250 operating hours, add 1 pint of Pencool 3000 liquid for every 20 gallons of cooling system capacity or replace the coolant filter with an appropriate size Pencool 3000 filter.)

III. Observe coolant change intervals:

Need-Release Program

Change the coolant only when the need is indicated by high coolant conductivity of 3,000 μ mhos or more by the Penray method (10% coolant in 90% distilled water). Thoroughly clean the system and refill with coolant as described above. Read the Fill-For-Life® Technical Bulletin for more information.

Conventional Program

Change the coolant per OEM engine manufacturer's recommendations, typically every 2 years, 200,000 miles or 4,000 operating hours. Thoroughly clean the system and refill with coolant as described above in Step I.

IV. WARNING:

There are organic acid antifreeze/coolants advertised as "extended life" coolants i.e. DEXCOOL®, Texaco® Extended Life Antifreeze and Caterpillar® Extended Life Antifreeze. These products' performance may be compromised if mixed with conventional coolants. Do not mix the two. Organic acid antifreeze/coolant can be recognized by its distinctive orange or red-orange color.