

Coolant Guide

Why Maintain Your Coolant?

Using and maintaining a properly formulated coolant is one of the most important aspects of engine maintenance. 40% of engine breakdowns are a direct result of improper coolant maintenance. Don't believe it? Check out this graphic representation and see if you have any of these problems. The intent of this Coolant Maintenance Guide is to provide the information required to help diesel engine operators avoid cooling system problems. Coolant is used to meet the following basic requirements:

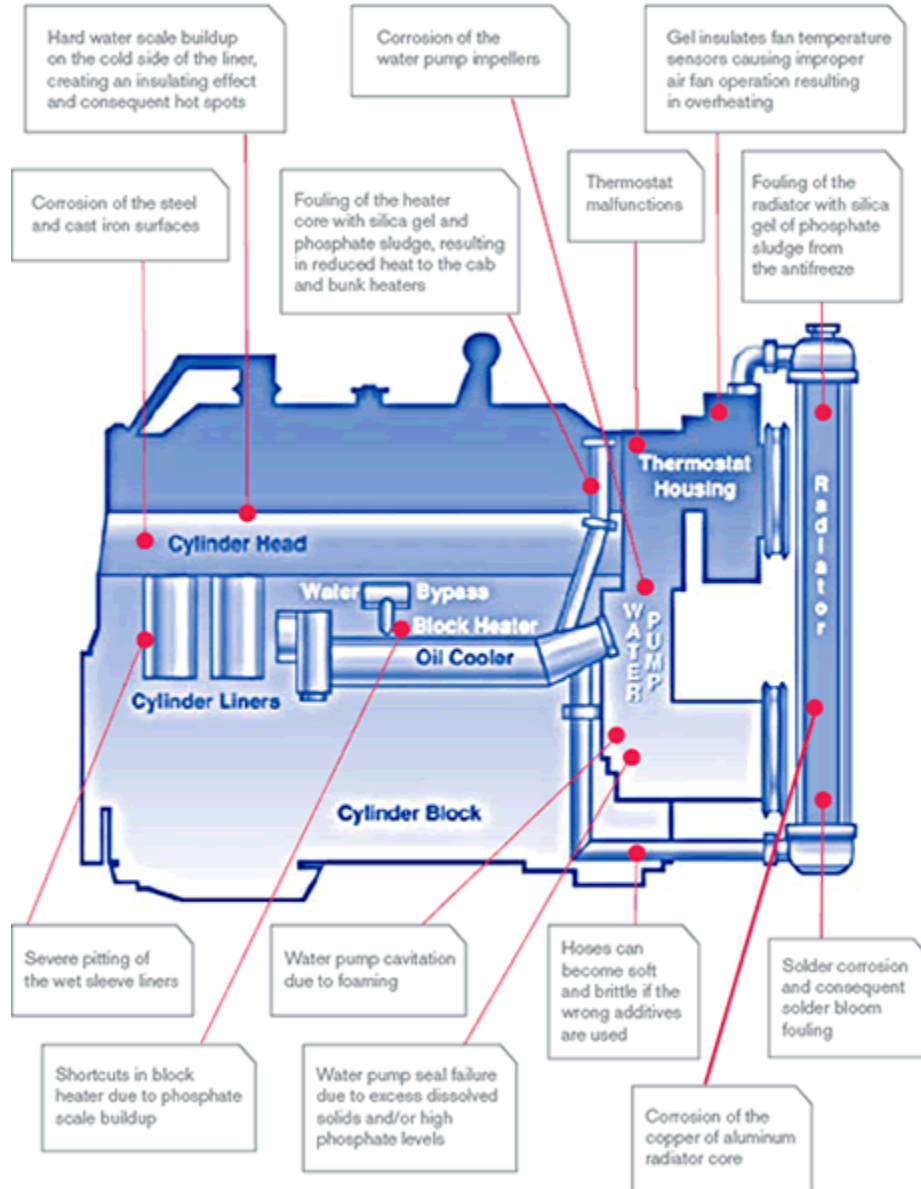
- Provide an adequate heat transfer medium.
- Protect against cavitation damage.
- Provide a corrosion-resistant environment.
- Prevent formation of scale and deposits.

To achieve these requirements, coolants must be of good quality. Demineralized or deionized water mixed with fully formulated antifreeze is the best choice. Pencool 3000 may be used to provide corrosion protection in coolant, while Pencool 2000 recommended for water-only coolant. Penray recommends fully formulated, phosphate-free extended service interval (ESI) coolants. Use antifreeze or coolant that meets ASTM D-6210 or D-6211 "Type A" phosphate-free requirements. The maintenance procedures described below for "antifreeze" or "coolant" apply equally to PG and EG. *(Note: Coolant recycled by reverse osmosis or ion exchange, properly re-inhibited to meet RP-329 or 330 requirements has been demonstrated to provide service equivalent to virgin antifreeze. Recycled antifreeze or coolants of these types are preferred.)* For best overall performance, use a coolant consisting of 33% to 60% fully formulated antifreeze. Fully formulated antifreeze should be used without the addition of any additional coolant additive. If a pre-diluted fully formulated coolant is purchased, simply fill the clean cooling system. Always verify that the freeze point and nitrite concentrations are correct with a Penray test strip, to insure engine protection. Many antiquated antifreeze formulations available in the market may not contain all the required additives. Penray recommends against using these types of antifreezes.

After billions of miles, Penray knows what works in cooling systems. For more information about Penray cooling system products, or for technical data, check out our catalog and technical bulletins. In the meantime, go through the Coolant Maintenance Guide to check your coolant .

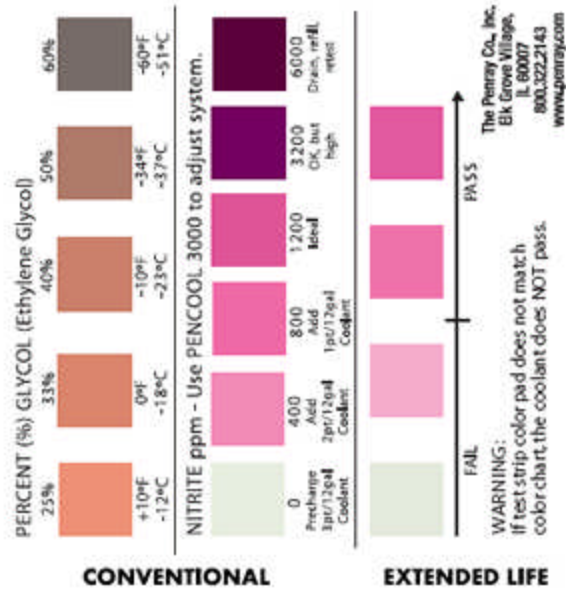
Poorly Treated Indications

What happens if a diesel engine cooling system is NOT treated properly with chemicals?



UPGRADE YOUR COOLANT

The first step to upgrading your coolant is to test the coolant with a Penray Universal 3-Way Test Strip. The readings from the test strip will guide you to the appropriate maintenance action.



WHAT DOES THE COOLANT LOOK LIKE?

Click on the closest match below.



[PINK](#)
[FLEETCHARGE](#)
[OR](#)
[POWERCOOL](#)



[RED](#)
[TEXACO](#) [OR](#)
[NOAT](#)



[ORANGE](#)
[TEXACO](#) [OR](#)
[NOAT](#)



[GREEN](#)



[BLUE](#)
[FLEETGUARD](#)

