



Good Maintenance Starts with Coolant Protection

High operating temperatures cause premature oil deterioration and damage to the components in any oil-wetted system.

That's why proper cooling-system maintenance is vital year-round.

Once temperature-related problems start, their effects spread. Power is drained, productivity is lost and major breakdowns can occur.

Analysts' Cool-Test coolant program detects potential problems for you before they threaten your liquid-cooled systems.

The competitively-priced Cool-Test program includes a series of sophisticated laboratory tests and evaluations which diagnose the condition of your coolant and cooling system, enabling you to correct deficiencies inexpensively before they turn into costly problems.

The Dangers

Engines suffer the most evident problems from ineffective cooling. Within an engine, overheating contributes to reduced lubricity and rapid deterioration of the oil.

Those conditions can lead to bearing failure or liner and ring damage. Many other engine problems are either caused or accelerated by poor cooling.

In the same way that oil analysis indicates the oil's deterioration, coolant analysis forewarns you to take steps to avoid lubricant degradation and system failure from improper cooling.

Cool-Test Procedures

Both conventional and extended-life coolants inevitably deteriorate over time, regardless of the additive package. Overheating accelerates this deterioration.

For conventional coolants, periodic additions of supplemental coolant additives (SCA) protect your engines' parts from corrosion and erosion. If the SCA concentrations are too low, corrosion will occur, eventually resulting in damage to the block and cylinder liners. Yet, if the SCA concentration is too high, deposits may form that weaken water pump seals. Seal failure allows coolant to enter an engine's lubrication system.

Extended life coolants do not require the same type of periodic additive replenishment as conventional coolants, but they must be monitored closely for contamination.

Your Analysts representative will help you establish a correctly specified and efficient sampling program for the units in your fleet. Our rep will explain the program, sampling techniques and how to interpret analysis reports. If you have Internet access, you can enhance your maintenance even further by downloading and managing analysis data through Analysts Online or LOAMS®.

Contaminants and Acidity

Cool-Test begins with the spectrochemical analysis of the coolant samples that you send to one of our five regional laboratories. This testing determines in parts per million the levels of trace metals present in your coolant.

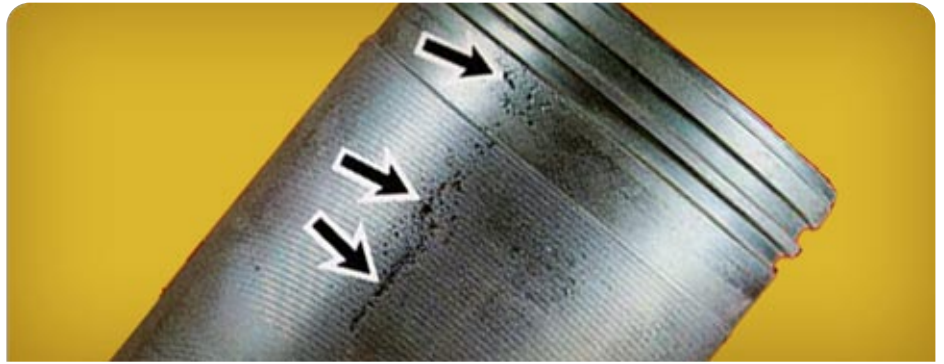
Conditions that spectrochemical analysis identifies include the presence and levels of wear products and corrosion residues.

The pH of your coolant is measured to reflect the alkaline range of the fluid. A high pH range means that the fluid can be corrosive to aluminum blocks, cooler-tubing or water-pump components. A low pH means the coolant's acidity could damage engine blocks, cylinder liners, copper tubing and water pumps.

Most coolant formulations require a reserve-alkalinity (RA) level to control corrosion and neutralize blowby acids. The remaining alkaline additives are measured for these coolants.

Freeze and Boiling Protection

Basic testing is performed to measure the freeze point and boiling protection of your coolant. A mixture of 45-55% coolant to water in your cooling system provides optimum performance. Lower amounts fail to provide adequate freeze protection in winter and boilover problems in summer. Either condition nullifies the temperature-regulating function of your cooling system, leaving your engine vulnerable to seizure and lubricant failure.



Chemistry

Analysts' recommendations will assist you in establishing and maintaining proper additive levels and service intervals to maintain the coolant balance. Both conventional and extended-life coolants may require maintenance dosages.

Visual Assessment

A meaningful visual assessment is important. The color and shadings of your coolant confirms proper products are in service and reflects possible mixtures of anti-freezes.

Coolant should be clear. If it's cloudy, rusty or contains contaminant debris, or if the additives have separated, the system is contaminated and action is warranted. If oil is present, leaks exist between the cooling and oil systems. Significant amounts indicate a critical situation.

Call Today for Cool-Test Details

Lab tests and evaluations are performed within 24 hours after receiving your samples. You will be contacted immediately if critical conditions are detected. A report can be mailed to you for each analysis.

If you prefer, you can access your analysis data through Analysts Online or Analysts' LOAMS® software.

Call the lab nearest you to speak with a technical representative. Or visit us at www.analystsinc.com.

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