

Coolant Analysis



The Benefits of Coolant Analysis

There's more to coolant analysis than testing coolant formulations — it's about identifying problems within the cooling system that can be detrimental to engine and lubrication system performance and lead to premature engine failure. Coolant analysis can detect:

- Cavitation Corrosion
- Air Leaks
- Glycol Degradation/Overheating
- Cavitation Erosion
- Combustion Gas Leaks
- Acid Formation
- Contamination
- Electrolysis

Four Goals of Coolant Analysis

1 – Preventive Maintenance

Coolant testing and analysis can:

- Determine the coolant's suitability for continued use
- Identify coolant mixing
- Measure additives levels for adequate metal protection
- Identify scale or acid-forming contaminants
- Determine appropriate maintenance – coolant replenished or full drain and replacement

2 – Predictive Maintenance

Regular testing helps in predicting impending failures by identifying abnormalities and trends in sample results indicative of operational issues within the cooling system.

3 – Life Cycle Management

Coolant analysis is just as powerful as oil analysis in identifying areas for improvement in equipment operations practices and maintenance procedures.

4 – Component Failure Identification

Testing can identify engine or cooling system component failures such as blown head gaskets, EGR cooler failures, electrolysis, defective pressure caps or plugged coolant lines.



Coolant Analysis Test Packages

Labcheck Coolant Analysis test packages are designed for the coolant formulations on the market today and the applications in which they are used. Regular testing and analysis can detect problems within the cooling system before they cause major damage or even failure.

Our Standard and Premium test packages monitor the corrosive acidic and alkaline attributes of the coolant, freeze and boil point protection, corrosion metals, contaminants and inhibitor levels. Also monitoring the organic acids in extended life coolants is beneficial in confirming proper fluid maintenance.

Standard Coolant Analysis – Conventional & Extended Life Coolants

Standard testing is beneficial in determining if a conventional coolant or an ELC is acceptable for continued use as well as identify contaminants or any corrosion present resulting from a mechanical issue. It can also identify coolant “mixing,” which can leave the system vulnerable to corrosion.

Physical Tests

- Visuals (color, foam, oil, fuel, magnetic precipitate, non-magnetic precipitate, & odor)
- pH
- Glycol %
- Freeze Point
- Nitrite
- SCA Number
- Specific Conductance
- Total Hardness

Corrosion Metals & Inhibitors by Atomic Emission Spectroscopy (AES)

- | | |
|------------|--------------|
| • Iron | • Magnesium |
| • Copper | • Borate |
| • Aluminum | • Silicon |
| • Lead | • Molybdenum |
| • Tin | • Phosphorus |
| • Zinc | • Potassium |
| • Silver | • Sodium |
| • Calcium | |

Premium Coolant Analysis – Conventional & Extended Life Coolants

Premium testing for conventional coolants identifies possible mechanical issues such as combustion gas leaks, air contamination, electrical ground problems, localized over-heating, chemical breakdowns or other contamination sources inside or outside the system. Premium testing can also determine the type and degree of coolant degradation and acid formation resulting from a cooling system problem.

Premium testing includes all testing in the Standard package plus:

Conventional & Extended Life Coolants Contaminant and Inhibitor Anions by Ion Chromatography (IC)

- | | | |
|------------|-------------|-----------|
| • Chloride | • Nitrate | • Formate |
| • Sulfate | • Phosphate | • Acetate |
| • Nitrite | • Glycolate | • Oxalate |

Extended Life Coolants Contaminant and Inhibitor Anions by Ion Chromatography (IC)

- | | | |
|------------------------|-----------------|-------|
| • Benzoate | • Sebacic Acid | • MBT |
| • 2-Ethylhexanoic Acid | • Octanoic Acid | • TTZ |
| | • p-Toluic | • BZT |

To order kits, call 1-866-Labcheck

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