



**FLUID
ANALYSIS
LABORATORY**



Fluid Analysis
Laboratory

Hewitt Equipment
Limited

5001, Trans-Canada
Highway
Pointe-Claire, QC
H9R 1B8

Telephone :
(514) 630-3124

Fax :
(514) 630-3212

e-mail :
soslab@hewitt.ca

Web site:
www.hewitt.ca

Your Fluid
Analysis
Laboratory
(ISO 9001:2000
Registered Quality
System)

*Service par
Excellence*

List of tests offered for coolant analysis

Cooling system problems cause the majority of engine breakdowns (more than 50%). Coolants analyses help detect problems before breakdowns occur. We offer two levels of analysis.

Level 1

These analyses are performed in our laboratory. Their primary purpose is to monitor the coolant quality (concentration, additives) and they may also indicate the presence of a major problem.

This level of analysis covers the following tests:

- **Percentage of glycol:** using a refractometer, we measure the percentage of glycol present in the coolant. That information tells us what the freezing and boiling points of the coolant are.
- **pH:** determines whether the solution is acid, neutral or basic. Tolerance limits depend on the type of antifreeze used (conventional or long life).
- **Conductivity:** measures the rate of dissolved salts in the coolant, and refers to the ability of the liquid to transmit electrical current. When this value is too high, the coolant should be changed.
- **Nitrite titration:** nitrites are found in most additives (SCAs), but quantities vary from one brand to another. It is important to know the brand used so that appropriate recommendations can be made.
- **Visual observations:** appearance (clear, cloudy, opaque), colour, presence of precipitate (deposits), and their characteristics (magnetic or not, flocculent), odor (ammonia, fuel, burnt smell) and the presence of foam are all important parameters to consider when evaluating coolant.

Level 2

These analyses are performed at the Caterpillar laboratory. They aid diagnosis of a problem with the coolant or in the cooling system. A level 1 analysis can tell you when it makes sense to perform a level 2 analysis. In addition to the tests covered in level 1, level 2 covers the following tests:

- **Wear metals:** measures concentration in ppm of eight corrosion products (iron, copper, lead, etc.)
- **Chromatography:** determines concentration of a wide range of additives necessary for the protection of your cooling system (nitrates, silicates, molybdates, etc.)
- **Products of oxidation:** shows degradation of chemical condition of the coolant (glycolate, formate, carbonate)
- **Water quality:** measurement of parameters indicating water quality or the presence of contaminants (chlorine, sulphates, hardness, etc).

But though coolant analyses are already part of the solution, what really counts is how they are interpreted. At Hewitt Equipment's Fluid Analysis Laboratory, you will receive an interpretation tailored to your application. To the mechanical knowledge of our lab specialists, you can add the support offered by Hewitt Equipment Technical Services, access to the Caterpillar Engineering Services database, a communication network with other Caterpillar dealers, not to speak of the knowledge you have of your own equipment. Good communication between all the players is the key to ensuring that these resources are used in **YOUR** best interests!