

# **TRIBOLOGIK®**

## **INFOLETTE**

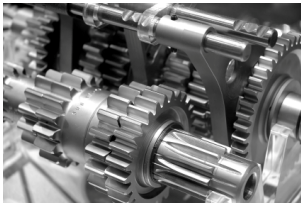
**Your Equipment's Best Friend!** [www.tribologik.com](http://www.tribologik.com)

September 2012

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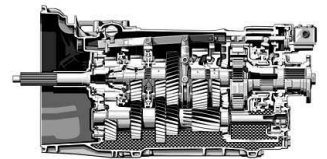


### **Testing your Transmissions, Differentials and Gearboxes**

Failure of transmissions, differentials, or gearboxes on your equipment can be extremely costly.

A defective truck transmission, bus differential or industrial gearbox will considerably slow down operation or stop production and may cause irreparable damage to your machinery.

In this context, the early detection or the postponing of potential problems before they become critical is not a question but a necessity. By comparison, have you ever asked your doctor whether you should get your first cholesterol screening test now or wait two more years? Chances are that his answer will be "now". Why? Because procrastinating can be full of bad surprises, including a stroke.



This advice applies to tribology as well. By following an oil analysis program, your equipment will be in better shape and you'll rest easier at night.

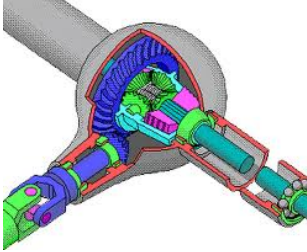
### **5 Basic Tests**

A typical transmission, differential and gearbox oil analysis program consists of five (5) basic tests :

1. **Color, odor, clarity, precipitate and foam** : This visual test provides a first indication of the degree of use of your oil.
2. **Elemental Analysis by ICP (inductively coupled plasma)** detects small metal wear particles that can be present in used oil due to mechanical wear, lubricant contamination or additive depletion. Spectroscopy indicates the condition of the equipment, parts and components and suggests those requiring specific attention.
3. **Fourier Transform Infrared Analysis (FTIR)** measures the depletion of additives, detects chemical degradation products and identifies the presence of contaminants such as **soot, water, ethylene glycol and unburned fuel**.

For additional information on these testes, see the June and August issues of this newsletter : (<http://www.tribologik.com/predictive.php?section=NEWSLETTER>).

The following two (2) tests are also prescribed each time you are testing your gearboxes :



4. **Viscosity at 40 °C** measures the thickness of the oil sample. Unlike engines, where viscosity is tested at 100 °C, the viscosity of gearbox lubricants is tested at 40 °C, which is the operational temperature of these pieces of equipment. The viscosity test indicates the level of compliance of your lubricant with the equipment manufacturer's specifications regarding machine tolerance, bearing loads and the rate of heat removal. Your Tribologik® report will recommend corrective action if required.

5. **Particle Quantifier Index (PQ)** : This test measures the mass of a wide range of ferrous wear debris and particle sizes in a sample. The larger the index the greater the ferrous wear content.

### Advanced Testing

Two additional tests can also be recommended from time to time :

- **Total Acid Number (TAN)**: This test is used on lubricants which have been in use for a certain time. It measures the total amount of acidic material present in a lubricant. A TAN increase above that of the new product indicates a degradation of oil by oxidation or contamination. Acid oil causes corrosion on the metallic parts of the equipment.
- **Karl Fischer Water Test** : The Karl Fischer Water Test is used for components and applications where water contamination can cause severe lubricant breakdown and must be kept extremely low. The Karl Fischer titration method measures and reports water content as a percentage (e.g. 0.005% = 50 ppm).

Contact your rep for additional information.

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## Friday September 21 WEBINAR : Why test your Equipment with Tribologik®?

Learn why by attending this webinar by **Jeremie Verdene**

**When:** Friday September 21, 2012

**Time :**

- **Ontario-Manitoba : 11:00 AM, Toronto time**
- **Saskatchewan-Alberta : 10:00 AM, Calgary time**

**Duration :** 30 minutes

**Reserve now with Jeremie :** [jeremie@tribologik.com](mailto:jeremie@tribologik.com)

**GlobalMeet**

**You're invited.**

You've been invited to a web meeting starting lundi 9 juillet 2012 at 11:35 Canada, Québec.

**Have the meeting call you.**  
Click the Connect Me link below. No need to dial-in.

**Connect Me**

**Not at your computer?**  
You can join by dialing one of the access numbers below:  
BlackBerry® +1-719-457-6209x7025895745#  
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