TRIBOLOGIK®

NEWSLETTER

ISO 17025:2005 **www.tribologik.com**

February 2013

In this issue :

The Ruler® Test – An Oil Analysis Technology to Estimate the Remaining Useful Life of the Lubricant

The RULER® test (Remaining Useful Life Evaluation Routine) is an oil analysis technology provided by PMC/Tribologik® to customers needing to measure the resistance to oxidation of high performance lubricants and greases, used in critical equipment operating on a continuous basis such as turbines, aircraft engines and related equipment such as pumps and compressors…

The effectiveness of a lubricant in protecting these pieces of equipment depends on the additives concentration. Some of these additives are **formulated not only to protect the equipment but to protect the lubricant itself**. These additives, phenols and amines, are called **antioxidant.** As their name suggests, their role consists of protecting the lubricant against oxidation by preventing the formation of resins and varnish resulting from air, heat and moisture.

Oxidation is the source of oil acidity which in turn is the source of rust and corrosion. Whereas the role of the antioxidant additives is crucial to counter lubricant **acidification**, it is therefore critical to prevent **corrosion** of the equipment.

As we have seen in a previous issue (December 2012), the main concern with hydraulic and steam turbines is with water emulsion in the oil. Water being the primary cause of corrosion**,** it is therefore of prime importance to make sure that the level of **antioxidants** is at all times sufficient to protect these critical equipments against rust and corrosion.

Measuring the Level of Antioxydants with the Ruler®

Measuring the level of antioxidants in a lubricant is not an easy task. In the past, it has been more often than not based on a subjective opinion because traditional oil analysis methods such as RPVOT (Rotary Pressure Vessel Oxidation Test) are time and money consuming and are not really efficient in detecting precisely the degradation of antioxidants before they are almost totally depleted; which is practically nothing but a warning to change oil.

At PMC/Tribologik®, we use the Ruler® test, which allows comparing the concentration of antioxidants in the oil currently used in your equipment with its reference oil at any time.

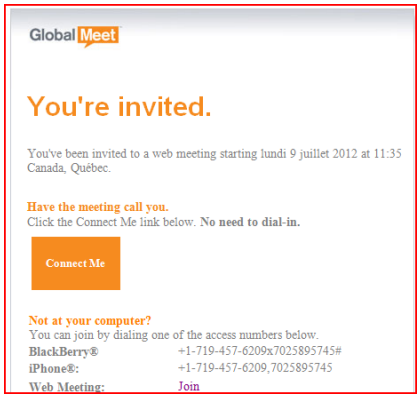
As an example, if the result shows a concentration of 75% in the used oil compared with the new oil (100%), the conclusion will be that 25% of the antioxidants have been degradated, and by extension, that the lubricant has only spent 25% of its useful life or that the remaining portion is 75%.

Understanding the health of your individual antioxidants and establishing a trend over time helps to understand the life of your fluid and predict when optimum oil change interval is required, i.e : when the level of antioxidants will be depleted to a point where they will not protect the lubricant anymore, usually at 30% at which time you can take the decision to change the oil or replenish antioxidants.

The RULER® oil analysis technology can indeed be used to prolong these intervals by replacing the antioxidant additives when required. It can also be used to quantify the levels of antioxidants in oils at the time of receipt, or in tanks, or a method to detect sudden additive depletion rate indicating abnormal operating condition.

For additional information on the Ruler® test, please contact your technical sales rep.

Friday February 22 WEBINAR : Oil Analysis Fundamentals



By **Jeremie Verdene**

Date : Friday February 22, 2013

Time :

- **Ontario, Manitoba : 12 :00 AM, Toronto time**
- **Saskatchewan, Alberta : 10 :00 AM, Calgary time**

Duration : 30 minutes

Reserve now with Jeremie : jeremie@tribologik.com