

MicroLab 40

On-Site Oil Analyzer

ASTM D7417

The MicroLab combines automation and artificial intelligence in an all-in-one oil analysis tool, making on-site oil analysis possible for any fleet.

- **Simple to use** – no special operator required
- **Fast** – results in less than 15 minutes
- **Easy to read reports** – color-coded alarms and maintenance actions

MicroLab 40 is designed primarily for fleets operating equipment with hydraulic components or heavy equipment gears and transmissions. This would include off-road mining and construction vehicles as well as over-the-road equipment with hydraulics such as bucket trucks, fire engine ladder trucks or solid waste trucks. The MicroLab 40 is also used in applications for offshore drilling equipment. In addition to the basic oil chemistry and extended elemental analysis provided with the MicroLab 30, the MicroLab 40 model includes a particle counter which provides critical analysis for cleanliness of hydraulic oils and gear oils to determine the health of those oils and mechanical condition of those components.

Monitoring equipment and oil health with oil analysis

The four automated MicroLab tests provide a complete look at equipment and oil condition.

Mechanical condition parameters indicate potential equipment failure:

- Wear metal analysis
- Contamination (glycol, dirt, water)

Oil condition parameters indicate potential degradation and contamination:

- Viscosity
- Oil chemistry
(Total Base Number, oxidation, nitration)
- Contamination (glycol, water, soot, particle count)
- Oil additive levels



Chemistry

The MicroLab infrared spectrometer measures six key parameters which indicate potential oil degradation and contamination.

Both the MicroLab 30 and 40 provide:

- Oil degradation: oxidation, nitration, total base number
- Oil contamination: soot, water, glycol

Viscosity

The MicroLab Dual Temperature Viscometer (DTV) provides kinematic viscosity analysis which can identify potential oil degradation or contamination.

- Kinematic viscosity at 40°C and 100 °C
- Viscosity index (VI)

Elemental Analysis

The MicroLab Optical Emission Spectrometer quantifies wear metals caused from mechanical components, as well as other elements from oil additives and contamination.

- Basic metals include: Al, Cr, Cu, Fe, Pb, Mo, K, Si, Na, Sn
- Extended metals include: Ba, B, Ca, Mg, Mn, Ni, P, Ti, V, Zn

Particle Count

The MicroLab 40 is equipped with a particle counter to measure particle contamination which is crucial for maintaining hydraulic systems, compressors and turbines.

- Gross particle count
- ISO particle size

