

Fluids Analysis Lab

Cashman Equipment's Fluids Analysis (SOS) Lab provides customers with convenient testing, analysis and interpretation of fluids from mobile machines and stationary equipment. Specializing in analyzing used and new oils, fuels and coolants, Cashman's fluids analysis team provides customers with timely, reliable, comprehensive sample reports and interpretation analysis.

- Fluids testing and interpretation since 1980
- ISO 17025 Accredited

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**LABORATORY
ACCREDITATION
BUREAU**
ACCREDITED ISO/IEC 17025

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Cashman Equipment's Fluids Analysis (SOS) Lab is ISO 17025 accredited. This means that Cashman's calibration methods, sample test processes, data collection, and reporting follow standard operating procedures and are consistently accurate.

SOME OF OUR TESTS INCLUDE:

SPECTROGRAPH WEAR ANALYSIS BY ICP (inductively-coupled plasma). It utilizes Perkin Elmer Optima V units to detect up to 22 metals, including aluminum (Al), chromium (Cr), copper (Cu), iron (Fe), nickel (Ni), lead (Pb), silver (Ag), tin (Sn), potassium (K), sodium (Na), silicon (Si), titanium (Ti), boron (B), calcium (Ca), magnesium (Mg), molybdenum (Mo), phosphorus (P), vanadium (V), cadmium (Cd), barium (Ba), manganese (Mn), and zinc (Zn).

FTIR (FOURIER TRANSFORM INFRARED) SPECTROSCOPY utilizes the Perkin Elmer Oil Express infrared spectrometer to measure for contaminations like soot, oxidation, sulfation, nitration, fuel, water, and glycol in engine, transmission, and hydraulic oils.

VISCOSITY TESTING utilizes the TriVisc Automated Viscometer to measure the viscosity, of machine fluids at 100° C and 40°C, then compares the results against the viscosity index.

LASERNET FINES is a direct imaging particle counter that can determine the cleanliness of the oil by measuring the quantity and size of particles that are present in the fluid. This instrument is unique in that it also provides classification of particles by indicating if they are fatigue, sliding, cutting wear particles, or non-metallic. The cleanliness of an oil can only be measured by particle counting.

TBN/TAN (Total Base Number/Total Acid Number) Testing compares the TBN and TAN levels to determine oil condition. High TAN numbers indicate the potential for increased rust and corrosion due to high acid concentration, while low TBN numbers indicate that the oil's ability to neutralize acids is used up.

KARL FISCHER WATER would follow a failed Crackle Test to find the exact percentage of water in the oil.

Additional tests analyze filter patches, coolant freezing and boiling points, pH levels, conductivity of fluids, nitrate parts per million, minor fuel issues, and major fuel problems.

SPECTRO FUEL ANALYZER measures up to 10% fuel dilution, or the amount of raw, unburned fuel that ends up in an engine's crankcase. Fuel dilution lowers oil viscosity, creating the possibility of friction-related wear, metal -to-metal contact and mechanical failure.

CRACKLE / GLYCOL TESTS examine oil for water or coolant contamination - a potential indicator of defective seals, blown or cracked gasket heads or a cracked engine block.

GAS CHROMATOGRAPHY (GC) measures the amount of glycol (antifreeze) and fuel in your oil within .01 of a percentage.

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