

**Eurofins TestOil - Testing Capabilities 5/1/2023**

Analytical Test	Method	Volume	Purpose of Test	Test Results
Acid Crack	IWI-370	4 oz.	Determines amount of water present in emulsion and cutting fluids	1-3 days
Acid Number	ASTM D974	4 oz.	Measurement of the acidic constituents in lubricating oil - key indicator of oil condition.	same day
Analytical Ferrography	IWI-180	4 oz.	Determines the type and severity of wear a machine is experiencing through microscopic examination of solid wear debris suspended in a lubricant sample	same day
API Gravity	ASTM D287	30 ml	This method determines the °API of petroleum and petroleum products.	3-5 days
Ash %	ASTM D874	20 g	Test uses a procedure to measure the amount of residual substance not volatilized from a sample when the sample is ignited in the presence of sulfuric acid. The test is usually used for determining the content of inorganic impurities in an organic substance.	3-5 days
Ashing	IWI-450	Filter	Determines the concentration of inorganic materials present in sample patches made from filter debris	3-5 days
Bacteria Test	IWI-350	4 oz.	Counts aerobic bacteria in a sample	1-3 days
Bacteria, Fungus & Algae Microbial Test	Test Kit	2 oz	Tests for microbial growth in diesel fuel	3-5 days
Base Number (Titration)	ASTM D4739	4 oz.	Measures the lubricants ability to neutralize corrosive acids	same day
Base Number (FTIR)	IWI-390	4 oz.	Measures the lubricants ability to neutralize corrosive acids that may be formed during normal operations	same day
Biodiesel	IWI-470	4 oz.	Measures the amount of biodiesel (Fatty Acid Methyl Ester - FAME) in diesel fuel samples	same day
Boiling Point	ASTM D1120	4 oz.	Glycol provides increased boiling point to engine coolant, above that of water. Determination of Engine Coolant boiling temperature.	>1 wk
Carbon Residue	ASTM D524	100 ml	The carbon residue of a fuel is the tendency to form carbon deposits under high-temperature conditions in an inert atmosphere.	3-5 days
Cetane Index	ASTM D4737	200 ml	Cetane tests measure diesel and fuel oil characteristics related to fuel quality.	3 days
Cold Filter Plugging Point (CFPP)	ASTM D6371	50 ml	Used in estimating the lowest temperature at which a fuel will give trouble-free flow in certain fuel systems.	3-5 days
Chlorine	ASTM D5384 Method B	4 oz.	Quantitative determination of total chlorine (halogens) in used oil - from 200-4,000 ppm	same day
Cloud Point	ASTM 2500 mod	50 ml	Cloud point of a petroleum product is an index of the lowest temperature of their utility for certain applications.	7 days
Color	ASTM D1500	4 oz.	Visually indicates possible contamination with other products - ASTM Color units	same day
Conductivity	IWI-480	4 oz.	Measurement of an engine coolant's ability to conduct electricity	>1 wk
Copper Corrosion	ASTM D130	4 oz.	Tests the corroding action of sulfur compounds on copper strip suspended in petroleum	same day
Copper Strip	ASTM D130	75 ml	Determines the relative degree of corrosivity of diesel fuel	3-5 days
Crackle	IWI-130	4 oz.	Crackle Test serves as a screen to detect the presence of water in lubricating oil	same day
Demulsibility	ASTM D1401	4 oz.	Measures the ability of oil to separate from water	1-3 days
Density	ASTM D287	100 ml	Density is an important quality indicator for automotive, aviation and marine fuels, where it affects storage, handling and combustion.	3 days
Deposit Classification by FTIR	IWI-255	4 oz.	Characterization of deposits from UC test using FTIR Spectroscopy	2-3 days
Distillation	ASTM D86	100 ml	To determine boiling range of diesel fuel	3 days
EDXRF	IWI-270	4 oz.	Determines the elemental composition of different types of foreign material	1-3 days
Elemental Spectroscopy	ASTM D5185	4 oz.	Measures the concentration of elements in fluid which are indicators of wear metal levels, additive levels, and contamination	same day
Engine Coolant Visual Analysis	IWI-520	4 oz.	Visual inspection of engine coolant for multiple physical indicators of possible circulating system issues	>1wk
Extraction	IWI-230	4 oz.	Extracts and determines the percentage of mineral oil in a sample	same day
Ferrous Wear Concentration	IWI-160	4 oz.	Measures the amount of ferrous wear in a lubricant	same day
Filter Debris Analysis	IWI-380-385	Filter + 4 oz. of fluid	Determines amount of metallic wear generated by machinery components through microscopic examination of solid wear debris suspended in a filter	3-5 days
Flash Point	ASTM D92	8 oz.	Measures the temperature at which an oil sample will form a flammable vapor in air and ignite in the presence of an open flame	1-3 days
Flash Point (Pensky-Martens)	ASTM D93	8 oz.	Closed Cup flash test	1-3 days

Foam Seq 1-3	ASTM D892	16 oz.	Determination of the Foaming Tendency of an oil sample	1-3 days
Freezing Point	IWI-134	4 oz.	Glycol is used in Engine coolant to prevent the coolant from freezing in cold temperature environments - This is a measurement a coolant's freezing temperature.	same day
FTIR	ASTM E2412, D7412, D7414, D7415 and D7624	4 oz.	Reports levels of additives, fluid breakdown products, and external contamination in lubricants that serve as indicators of oil condition and contamination.	same day
Fuel Dilution by GC	ASTM D7593	4 oz.	This test measures the percent fuel in diesel and gasoline engine oils. Excess fuel dilution in an engine oil will cause oil thinning and can lead to premature engine failure.	same day
Glycol	ASTM D2982	4 oz.	Detects the presence of ethylene glycol contamination in either water or oil	same day
Gravimetric Analysis	ASTM D4898	4 oz.	Measures insoluble containments in a lubricant	same day
High Pressure Liquid Chromatography	IWI-510	4 oz.	Identification and quantification of organic acid additives in engine coolants.	>1 wk
Ion Chromatography	ASTM D5827	4 oz.	Detection and quantification of anions present in engine coolant. Monitors levels of corrosion inhibitors, degradation products and contaminants.	>1 wk
Karl Fischer Water	ASTM D 6304C	4 oz.	Provides the concentration of water present in oil from 0.001%-100.0%	same day
Material Identification Analysis			Identifies the origin of a foreign material	varies
Measurable Water	IWI-135	4 oz.	Identify the percentage of water in an oil sample containing a definitive layer of water.	same day
Membrane Patch Colorimetry	ASTM D7843	8 oz.	Colorimetric varnish potential is used to quantify the oxidation by-products associated with varnishing, particularly in turbines	5-7 days
Nitrites	IWI-321	4 oz.	Determination of Nitrite concentration in Engine Coolant - nitrite is sometimes an additive (usually in the form of sodium nitrite) used in coolant as a corrosion inhibitor.	same day
Particle Count (Pore Blockage)	IWI-150	4 oz.	Measures the size and quantity of hard particles in a lubricant - Converted into ISO Cleanliness Code	same day
Particle Count (Optical)	IWI-151	8 oz.	Measures the size and quantity of hard and soft (i.e. varnish) particles in a lubricant - Converted into ISO Cleanliness Code	same day
pH	ASTM D1287	4 oz.	Measures the alkalinity or acidity of an aqueous fluid	same day
Pour Point	ASTM D97	1 oz.	To determine lowest flow temperature of diesel fuel	3-5 days
Reserve Alkalinity	ASTM D1121	4 oz.	Measures an oils ability to neutralize acids in water glycol hydraulic fluids	same day
Resistivity	ASTM D1169	4 oz.	Measurement of lubricant's ability to resist or conduct the flow of electric current.	1-3 days
Rotating Pressure Vessel Oxidation Test (RPVOT)	ASTM D2272	8 oz.	Evaluation of the oxidation stability of an oil sample	varies (at least 72 hrs)
RULER	ASTM D6971	4 oz.	Compares levels of antioxidants in the used oil sample to the levels present in a virgin reference sample of the same lubricant - determines the percentage of remaining useful life of the oil	1-3 days
Soot	IWI-600	1 oz.	Test method for measuring percent soot in diesel engine lubricating oils.	3 days
Soot	Wilkes Soot Meter	1 oz.	Test method for measuring percent soot in diesel engine lubricating oils.	same day
Rust	ASTM D665 Procedure A and B	32 oz.	Evaluation of lubricant's ability to prevent formation of rust on ferrous- based equipment in the presence of water	1-3 days
Specific Gravity	ASTM D1298	4 oz.	Compares the density of one substance to the density of a reference substance (water) through a fixed ratio	same day
Sugar	IWI-200	4 oz.	Detects possible carbohydrate contamination in gasoline or oil samples.	same day
Sulfur	ASTM D5453	30ml	Total Sulfur Content in Diesel	3 days
Thermal Stability	ASTM D6468	100 ml	High temperature stability of middle distillate fuels	3-5 days
Tramp Oil	IWI-360	4 oz.	Determines percentage of tramp/contaminating oil present in metalworking/cutting fluids	same day
Ultra Centrifuge	IWI-251	4 oz.	Quantifies oxidation by-products associated with varnishing	same day
Viscosity @ 100	ASTM D445	4 oz.	Kinematic Viscosity reported in Centistokes (cSt) - lubricant resistance to flow at 100°C	same day
Viscosity @ 40	ASTM D445	4 oz.	Kinematic Viscosity reported in Centistokes (cSt) - lubricant resistance to flow at 40°C	same day
Viscosity Index	ASTM 2270	4 oz.	Calculated from D445 Viscosity results - the effect of temperature on fluid viscosity	same day
Bottom Water & Sediment	ASTM D2709	200 ml	Determination of the volume of free water and sediment suspended in diesel fuel	1-3 days
Water by Refractometer	IWI-134	4 oz.	Refractive Index of water glycol fluid provides percentage of water in fluid; also is used to calculate ratio of glycol to water in engine coolant	same day
Yeast and Mold	IWI-350	4 oz.	Counts yeast mold in a sample	3-5 days

## Fuel Testing