

RECOMMENDED OIL ANALYSIS TESTS AND SAMPLE FREQUENCIES (BY COMPONENT)

CATEGORY / LABORATORY TEST		ENGINES			HYDRAULICS		GEARBOXES		COMPRESSORS		GAS / STEAM TURBINES			BEARINGS / PUMPS	
		Diesel	Natural Gas	Gasoline	Mobile	Fixed Plant	Mobile	Fixed Plant	Mineral Oils	Synthetic Oil	Mineral Oils	PAG Oils	Ester Oils	Splash Fed	Circulating Oil
Sampling Frequency		500 hrs. / Monthly	500 hrs. / Monthly	As Needed	500 hrs. / Monthly	1 - 3 months	500 hrs. / Monthly	1 - 3 months	1 - 3 months	1 - 3 months	1 - 3 months	1 - 3 months	1 - 3 months	1 - 3 months	
FLUID PROPERTIES	Viscosity @ 40C	○	○	○	○	○	○	○	○	○	○	○	○	○	
	Viscosity @ 100C	○	○	○	○	○	○	○	○	○	○	○	○	○	
	Viscosity Index (VI)	○	○	○	○	○	○	○	○	○	○	○	○	○	
	Oxidation / Nitration / Sulfation	○	○	○											
	Oxidation				□	□					□	□	□	□	□
	Base Number (BN)	□	□	□			□	□							
	Acid Number (AN)	▲	▲	▲	□	□	□	○	□	○	○	○	○	○	○
	ipH Test	▲	▲	▲	□	□			□	○	○	○	○	○	○
	Copper Corrosion Test										□	▲	▲		
	Rust Test										□	▲	▲		
	Foam Test (Tendency / Stability)					▲					□	▲	▲		
	Demulsibility					▲					□	▲	▲		
	RULER Test				▲	▲			▲	▲	□	□	□		▲
	RPVOT										□				
	ICP Spectrometry (Additives)	○	○	○	○	○	○	○	○	○	○	○	○	○	○
CONTAMINATION	Water (Crackle Test)	○	○	○	○	○	○	○	○				○	○	
	% Water (Karl Fischer)				□	□	□	□	□	○	○	○	□	□	
	% Soot	○	○	○											
	Fuel Dilution	○	○	○											
	Glycol Contamination (Gas Chromatography)	○	○	○											
	Glycol Contamination (Chemometric Coolant)	□	□	□											
	ISO Particle Count		□	□	○	○									
	ISO Particle Count w/Optical Particle Classification (OPC)						○	○						□	□
Varnish Potential (Membrane Patch Colorimetry)					▲	▲	▲	□	□				□	□	
WEAR DEBRIS	ICP Spectrometry (Wear Debris)	○	○	○	○	○	○	○	○	○	○	○	○	○	
	Total Magnetic Iron (TMI)	□	□	□	□	□	□	□	□	□	□	□	□	□	
	Large/Early Wear Debris Detection – SEM-EDS	□	□	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲

Minimum Testing
 Standard Testing
 Advanced or Proactive Testing

NOTE: Minimum or Standard tests should be performed frequently to detect issues at an early stage. Standard or Advanced tests can be used to confirm the severity or urgency of the issue. Adjust sampling frequencies based on the nature of failure modes, asset criticality, safety, and environmental concerns. Please contact Fluid Life for program planning support (www.fluidlife.com).