

HORIZON® develops and validates modifications to ASTM standard methods. Reasons for modification include: minimization of required sample and supplies, use of modern automated equipment, and less variation in sample preparation and testing. The modifications reduce costs and in most cases improve throughput, which results in lower sample pricing and faster turnaround time for our customers.

OILS										
TEST	METHOD	UNITS OF MEASURE	SAMPLE REQD	RUSH AVAILABILITY ¹						NOTES
				IND	HOU	SLC	EDM	GUA	POZ	
Acid Number	mod. ASTM D664	mg KOH/g	5 mL							
Base Number	mod. ASTM D4739	mg KOH/g	3 mL							
Elemental Metals Analysis(24 by ICP)	mod. ASTM D5185	ppm	2 mL							
Fuel Dilution %	ASTM D7593	%	5 mL							Diesel Engine and Gasoline Engine Lube Oils Only.
Glycol	mod. ASTM D2982	pos/neg	8 mL							
Soot %	ASTM E2412	%	40 mL							Rush available for FT-IR analysis only.
Nitration		abs/0.1mm								
Oxidation		abs/cm								
Particle Count (Calibration: ISO 11171)	ISO 4406	counts/mL	80 mL							Not available for black samples (e.g. Used Diesel Engine Oils)
Particle Quantifier (Ferrous Density)	Manufacturer	no units	4 mL							
i-pH	mod. ASTM D7946	pH	5 mL							
Viscosity - 40° or 100°C	mod. ASTM D445	cSt	2 mL							High water samples not suitable for 100°C analysis.
Viscosity Index - includes Vis @ 40° & 100°C	ASTM D2270	no units	4 mL							Not available for high water samples (see above).
Water by Crackle (estimate)	Internal Method	%	2 mL							
Water by Karl Fischer - Coulometric	mod. ASTM D6304C	% or ppm	10 mL							

1. Rush Availability Key:

Key	Rush Type	Time Frame
	Same-Day Service	Received by 2pm local time – completed by 5pm local time Received after 2pm local time – completed by noon local time the next business day
	Next Day Service	Completed by 5pm local time the next business day
	Expedited Exception	Sample will be moved next in line for testing, but no time guarantee for results
	Testing performed at a different POLARIS location.	Same as Expedited Service
	Outsourced Test	Rush Service Unavailable

COOLANTS

TEST	METHOD	UNITS OF MEASURE	SAMPLE REQD	RUSH AVAILABILITY ¹						NOTES
				IND	HOU	S/LC	EDM	GUA	POZ	
Antifreeze % - Ethylene or Propylene Glycol)	Internal Method	%	60 mL							
Boil Point	Internal Method	Fahrenheit								
Freeze Point	mod. ASTM D3321	Fahrenheit								
Carboxylic Acid	Manufacturer	pass/fail	10 mL							
Elemental Metals Analysis by ICP	mod. ASTM D6130	ppm	8 mL							
Total Hardness	Internal Method	ppm	8 mL							Result is a calculation of Elemental Analysis
HPLC - Benzotriazole, Tolytriazole, Mercaptobenzothiazole, Benzoic Acid, Sebacic Acid, 2-Ethylhexanoic Acid, Octanoic Acid, P-Toluic Acid)	Internal Method	ppm	20 mL							Technical approval required for non-Engine Coolant samples.
Ion Chromatography - Chloride, Sulfate, Nitrite, Nitrate, Phosphate, Glycolate, Acetate, Formate & Oxalate.	ASTM D5827	mg/L	5 mL							Technical approval required for non-Engine Coolant samples.
Nitrite	Internal Method	ppm	2 mL							
pH Waters	ASTM D1287	pH	20 mL							
Reserve Alkalinity	ASTM D1121	mL	20 mL							
SCA Number	Internal Method	no units	8 mL							Result is a calculation of ICP and Nitrite testing
Total Dissolved Solids	Meter Measurement	mg/L	60 mL							
Specific Conductance	Meter Measurement	µS								
Visuals - color, oil, fuel, foam, magnetic precipitate, non-magnetic precipitate, odor & foam.	Internal Method	description	25mL							

1. Rush Availability Key:

Key	Rush Type	Time Frame
	Same-Day Service	Received by 2pm local time – completed by 5pm local time Received after 2pm local time – completed by noon local time the next business day
	Next Day Service	Completed by 5pm local time the next business day
	Expedited Exception	Sample will be moved next in line for testing, but no time guarantee for results
	Testing performed at a different POLARIS location.	Same as Expedited Service
	Outsourced Test	Rush Service Unavailable

DIESEL FUEL

TEST	METHOD	UNITS OF MEASURE	SAMPLE REQD	RUSH AVAILABILITY ¹						NOTES
				IND	HOU	SLC	EDM	GUA	POZ	
Aerobic Bacteria	Manufacturer	counts	100 mL							
API Gravity	ASTM D4052	no units	20 mL							
Aromatic Contents	ASTM D6591	separate report	60 mL							
Ash	ASTM D482/IP4	%	50 mL							
Bacteria, Fungi, Mold	Manufacturer	counts	60 mL							
% Biodiesel (FAME)	ASTM D7371	%	100 mL							
BTU per gallon	ASTM D4868	btu/gal	300 mL							
BTU per pound	ASTM D4868	btu/lb	300 mL							
Density	ASTM D4052	g/mL	20 mL							
Micro-Distillation	Predicted D86 results by ASTM D7345	Celsius	20mL							Result is a calculation of Distillation and API Gravity.
Cetane Index	ASTM D976	no units								
Cloud Point	ASTM D7689	Celsius	10 mL							
Cold Filter Plug Point	IP309/ASTM D6371	Celsius	100 mL							
Flash Point - Closed Cup	ASTM D3828	Celsius	20 mL							Not available for gasoline products and some solvents. Please consult if unsure.
Lubricity	ASTM D6079	µm	20 mL							
Oxidation Stability	ASTM D2274	%	700 mL							
Pour Point	ASTM D7346	Celsius	10 mL							
Specific Gravity	Internal Method	no units	20 mL							
Sulfur	ASTM D7220	ppm	50 mL							
Viscosity - 40°C	mod. ASTM D445	cSt	2 mL							Not available for 100°C analysis.
Thermal Stability	mod. ASTM D6468	%	120 mL							
Total Free Glycerin	ASTM D6584	%	60 mL							
Water & Sediment	ASTM D2709	%	200 mL							

1. Rush Availability Key:

Key	Rush Type	Time Frame
	Same-Day Service	Received by 2pm local time – completed by 5pm local time
	Next Day Service	Received after 2pm local time – completed by noon local time the next business day
	Expedited Exception	Completed by 5pm local time the next business day
	Testing performed at a different POLARIS location.	Sample will be moved next in line for testing, but no time guarantee for results
	Outsourced Test	Same as Expedited Service
		Rush Service Unavailable

Specialty

TEST	METHOD	UNITS OF MEASURE	SAMPLE REQD	RUSH AVAILABILITY ¹						NOTES
				IND	HOU	SLC	EDM	GUA	POZ	
4 Ball Wear Test	ASTM D5183	no units	200 mL							
Acid Digestion	ASTM D5198	Sample Prep	1-5 g							
Acidity (as acetic acid)	ASTM D1613	%	60 mL							
Air Release	ASTM D3427	minutes	250 mL							
Aniline Point	ASTM D611	Celsius	100 mL							
Appearance	Internal Method	description	10 mL							
Base Number by Perchloric Acid	ASTM D2896	mg KOH/g	5 mL							
Carbon Residue (Conradson)	ASTM D189/IP13	%	200 mL							
Chlorine	ASTM D5384	ppm	20 mL							
Cold Crank Simulator	ASTM D5293	mPa·s	120 mL							Suitable for Multi-Grade Lubricants only.
Color	ASTM D6045	no units	50 mL							
Cone Penetration Unworked	ASTM D217	mm	500 g							
Cone Penetration Worked	ASTM D217	mm	500 g							
Copper Corrosion	ASTM D130	no units	70 mL							
Contamination Dispersancy	mod. ASTM D7899	IC, MD, DP	10mL							
Density	ASTM D4052	g/mL	20 mL							
Dielectric Strength	ASTM D877	volts	450 mL							
Filter Debris Analysis	Internal Method	no units	1 Filter							
Ferrography - Analytical	ASTM D7690	picture	2 mL							
Flash Point - Cleveland Open Cup	ASTM D92	Celsius	200 mL							Not available for gasoline products and some solvents. Please consult if unsure.
Fire Point										
Foam	ASTM D892	mL	800 mL							
FTIR - Full Spectrum Scan	FTIR	graph	20 mL							
FTIR - Full Spectrum Scan w/ interpretation	FTIR	graph w/ consult	20 mL							
Gravimetric Solids	Internal Method	ppm	10 mL							
MicroPatch	Internal Method	picture	20 mL							
MPC (Membrane Patch Colorimetry)	mod. ASTM D7843	no units	120 mL							
Pentane Insolubles (Coagulated)	ASTM D893	%	35 mL							
Pentane Insolubles (Uncoagulated)	ASTM D893	%	35 mL							
Photo Micrograph (Picture Only)	Internal Method	Picture	20 mL							
RPVOT	ASTM D2272	minutes	200 mL							
LSV (Ruler)	ASTM D6971	%	4 mL							
Resistivity	ASTM D1169	ohms	300 mL							

Specialty (cont.)

TEST	METHOD	UNITS OF MEASURE	SAMPLE REQD	RUSH AVAILABILITY ¹						NOTES
				IND	HOU	SLC	EDM	GUA	POZ	
Rust	ASTM D665	pass/fail	1200 mL							
Saponification Number	ASTM D94	mg KOH/g	50 mL							
Seta Flash	ASTM D3828	Celsius	50 mL							Not available for gasoline products and some solvents. Please consult if unsure.
Strong Acid Number	mod. ASTM D664	mg KOH/g	5 mL							
Sulfated Ash	ASTM D874	%	100 mL							
Sulfur in Oil	ASTM D4951	%	10 mL							
Toluene Insolubles (Coagulated)	ASTM D893	%	35 mL							
Toluene Insolubles (Uncoagulated)	ASTM D893	%	35 mL							
Brookfield Viscosity	ASTM D2983	mPa·s	200 mL							
Water Separability Characteristics	ASTM D1401	mL	80 mL							
Water Saturation	Manufacturer	%	30 mL							

1. Rush Availability Key:

Key	Rush Type	Time Frame
	Same-Day Service	Received by 2pm local time – completed by 5pm local time Received after 2pm local time – completed by noon local time the next business day
	Next Day Service	Completed by 5pm local time the next business day
	Expedited Exception	Sample will be moved next in line for testing, but no time guarantee for results
	Testing performed at a different POLARIS location.	Same as Expedited Service
	Outsourced Test	Rush Service Unavailable