



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

POLARIS LABORATORIES, LLC¹
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Indianapolis, IN 46268
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CHEMICAL

Valid To: June 30, 2024

Certificate Number: 2145.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests on petroleum products including oil, fuel, hydraulic fluid, lubricants, and coolants:

<u>Test(s)</u>	<u>Test Method(s)</u>
Lubricants/Oils	
Acid Number	WI-0329 (Based on Modified ASTM D664)
Analytical Ferrography	WI-0016; ASTM D7690
Base Number	WI-0195 (Based on Modified ASTM D4739)
Chlorine	WI-0052; ASTM D5384
Flash Point – Cleveland Open Cup	WI-0025; ASTM D92
Fuel Dilution by Gas Chromatography	WI-0086; ASTM D7593
Fuel Soot % (FTIR)	WI-0256, WI-157; ASTM E2412
Glycol	WI-0024 (Based on Modified ASTM D2982)
Gravimetric Solids	WI-0027
ICP Elemental Analysis Ag, Al, B, Ba, Ca, Cd, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Si, Sn, Ti, V, Zn	WI-0121, WI-0390 (Based on Modified ASTM D5185)
i-pH	WI-0329 (Based on Modified ASTM D7946)
Karl Fischer Coulometric	WI-0259; ASTM D6304C
Oxidation/Nitration (FTIR)	WI-0256, WI-0157; ASTM E2412

<u>Test(s)</u>	<u>Test Method(s)</u>
Particle Count	WI-0322; ASTM D7647; ISO4406
Particle Quantifier	WI-0255
RPVOT	WI-0031; ASTM D2272
Viscosity @ 40° C	WI-0061 (Based on Modified ASTM D445, ASTM D7279)
Viscosity @ 100° C	WI-0393 (Based on Modified ASTM D445, ASTM D7279)
Viscosity Index (Calculation)	WI-0234; ASTM D2270 X2
Water % (Estimate) (FTIR)	WI-0256, WI-0157; ASTM E2412
Water % by Crackle (Estimate)	WI-0012
Water Separability Characteristics	WI-0203; ASTM D1401
Coolants	
Antifreeze % Refractometer	WI-0087
Conductivity & Total Dissolved Solids	WI-0497
Freeze Point & Boil Point (Calculation)	WI-0126
Hardness % Calcium Carbonate (Calculation)	WI-0127
ICP Elemental Analysis Ag, Al, B, Ca, Cu, Fe, K, Mg, Mo, Na, P, Pb, Si, Sn, Zn	WI-0120 (Based on Modified ASTM D6130)
Ion Chromatography Glycolate, Acetate, Formate, Chloride, Nitrite, Nitrate, Phosphate, Sulfate, Oxalate	WI-0209 (Based on Modified ASTM D5827)
Nitrites	WI-0276
pH Waters	WI-0497; ASTM D1287
SCA Number (Calculation)	WI-0127
Visual Coolant Testing	WI-0053

<u>Test(s)</u>	<u>Test Method(s)</u>
Fuels	
Aerobic Bacteria	WI-0036
API Gravity	WI-0266; ASTM D7777
Bacteria, Fungi, Mold	WI-0037
Cetane Index (Calculation)	WI-0165
Cloud Point	WI-0274; ASTM D7689
Micro – Distillation	WI-0326; ASTM D7345
Pour Point	WI-0274; ASTM D7346
Seta Flash	WI-0191; ASTM D3828
Specific Gravity (Calculation)	WI-0164
Sulfur	WI-0070; ASTM D7220
Thermal Stability	WI-0034 (Based on Modified ASTM D6468)
Water & Sediment	WI-0144; (Based on Modified ASTM D2709)

¹ This accreditation covers testing performed at the main laboratory listed above, and the satellite laboratories listed below.

POLARIS Laboratories, LLC
10910 W. Sam Houston Parkway North, Suite 700
Houston, TX 77064

<u>Test(s)</u>	<u>Test Method(s)</u>
Lubricants/Oils	
Acid Number	WI-0329 (Based on Modified ASTM D664)
Base Number	WI-0195 (Based on Modified ASTM D4739)
Fuel Dilution by Gas Chromatography	WI-0086; ASTM D7593
Fuel Soot % (FTIR)	WI-0256; ASTM E2412
Glycol	WI-0024 (Based on Modified ASTM D2982)



<u>Test(s)</u>	<u>Test Method(s)</u>
ICP Elemental Analysis Ag, Al, B, Ba, Ca, Cd, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Si, Sn, Ti, V, Zn	WI-0121, WI-0385 (Based on Modified ASTM D5185)
i-pH	WI-0329 (Based on Modified ASTM D7946)
Oxidation/Nitration (FTIR)	WI-0256; ASTM E2412
Particle Count	WI-0322; ASTM D7647; ISO 4406 (Based on Modified ISO 11500)
Particle Quantifier	WI-0255
Viscosity @ 40° C	WI-0061 (Based on Modified ASTM D445)
Viscosity @ 100° C	WI-0393 (Based on Modified ASTM D445)
Viscosity Index (Calculation)	WI-0234; ASTM D2270 X2
Water % (Estimate) (FTIR)	WI-0256; ASTM E2412
Water % by Crackle	WI-0012
Water by Karl Fischer (% or ppm)	WI-0259 (Based on Modified ASTM D6304C)
Coolants	
Antifreeze % Refractometer	WI-0087
Conductivity & Total Dissolved Solids	WI-0056
Freeze Point & Boil Point (Calculation)	WI-0126
Hardness % Calcium Carbonate (Calculation)	WI-0127
ICP Elemental Analysis Ag, Al, B, Ca, Cu, Fe, K, Mg, Mo, Na, P, Pb, Si, Sn, Zn	WI-0120 (Based on Modified ASTM D6130)
Nitrites	WI-0276
pH Waters	WI-0023; ASTM D1287
SCA Number	WI-0127
Visual Coolant Testing	WI-0053

<u>Test(s)</u>	<u>Test Method(s)</u>
Fuels	
Aerobic Bacteria	WI-0036
Bacteria, Fungi, Mold	WI-0037

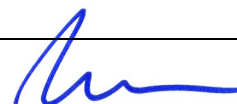
POLARIS Laboratories, LLC
3060 California Ave., Suite B
Salt Lake City, UT 84104

<u>Test</u>	<u>Test Method(s)</u>
Lubricants / Oils	
Acid Number	WI-0329 (Based on Modified ASTM D664)
Base Number	WI-0195 (Based on Modified ASTM D4739)
Fuel Dilution by Gas Chromatography	WI-0086; ASTM D7593
Fuel Soot % (FTIR)	WI-0157; ASTM E2412
Glycol	WI-0024 (Based on Modified ASTM D2982)
ICP Elemental Analysis: Ag, Al, B, Ba, Ca, Cd, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Si, Sn, Ti, V, Zn	WI-0121, WI-0385 (Based on Modified ASTM D5185)
i-pH	WI-0329 (Based on Modified ASTM D7946)
Oxidation / Nitration (FTIR)	WI-0157; ASTM E2412
Particle Count	WI-0322; ASTM D7647; ISO 4406 (Based on Modified ISO 11500)
Particle Quantifier	WI-0255
Viscosity @ 40° C or 100° C	WI-0061 (Based on Modified ASTM D445)
Viscosity Index (Calculation)	WI-0234; ASTM D2270 X2
Water % (Estimate) (FTIR)	WI-0157; ASTM E2412
Water % by Crackle (Estimate)	WI-0012

<u>Test</u>	<u>Test Method(s)</u>
Water by Karl Fischer (% or ppm)	WI-0259 (Based on Modified ASTM D6304C)
Coolants	
Antifreeze % Refractometer	WI-0087
Conductivity & Total Dissolved Solids (Calculation)	WI-0056
Freeze Point & Boil Point (Calculation)	WI-0126
Hardness % Calcium Carbonate (Calculation)	WI-0127
ICP Elemental Analysis: Ag, Al, B, Ca, Cu, Fe, K, Mg, Mo, Na, P, Pb, Si, Sn, Zn	WI-0120 (Based on Modified ASTM D6130)
Nitrites	WI-0276
pH Waters	WI-0023; ASTM D1287
SCA Number	WI-0127
Visual Coolant Testing	WI-0053
Fuels	
Aerobic Bacteria	WI-0036
Bacteria, Fungi, Mold	WI-0037

POLARIS Laboratories, ULC
5140 75th Street
Edmonton, AB Canada T6E 6W2

<u>Test</u>	<u>Test Method(s)</u>
<u>Lubricants/Oil</u>	
Acid Number	WI-0175 (Based on Modified ASTM D664)
Base Number	WI-0046 (Based on Modified ASTM D4739)
Fuel Dilution by Gas Chromatography	WI-0086; ASTM D7593
Fuel Soot % (FTIR)	WI-0157; ASTM E2412



<u>Test</u>	<u>Test Method(s)</u>
Glycol	WI-0024 (Based on Modified ASTM D2982A)
ICP Elemental Analysis Ag, Al, B, Ba, Ca, Cd, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Si, Sn, Ti, V, Zn	WI-0121 (Based on Modified ASTM D5185)
i-pH	WI-0175 (Based on Modified ASTM D7946)
Oxidation/Nitration (FTIR)	WI-0157; ASTM E2412
Particle Count	WI-0004 (Based on Modified ISO 11500)
Particle Quantifier	WI-0041
Viscosity @ 40° C or 100° C	WI-0061 (Based on Modified ASTM D445)
Viscosity Index (Calculation)	WI-0234; ASTM D2270
Water % (Estimate) (FTIR)	WI-0157; ASTM E2412
Water % by Crackle	WI-0012
Water by Karl Fischer (% or ppm)	WI-0259 (Based on ASTM D6304C)
<u>Coolants</u>	
Antifreeze % Refractometer	WI-0087
Conductivity & Total Dissolved Solids	WI-0056
Freeze Point & Boil Point (Calculation)	WI-0126
Hardness % Calcium Carbonate(Calculation)	WI-0127
ICP Elemental Analysis Ag, Al, B, Ca, Cu, Fe, K, Mg, Mo, Na, P, Pb, Si, Sn, Zn	WI-0120 (Based on ASTM D6130)
Nitrites	WI-0276
pH Waters	WI-0023; ASTM D1287
SCA Number (Calculation)	WI-0127
Visual Coolant Testing	WI-0053
<u>Fuels</u>	
Aerobic Bacteria	WI-0036
Bacteria, Fungi, Mold	WI-0037

POLARIS Laboratories Europe Sp. Z. o.o.
 ul. Rubież 46H 61- 612
 Poznan, Poland

<u>Test</u>	<u>Test Method(s)</u>
<u>Lubricants/Oil</u>	
Acid Number	WI-0015, WI-0175 (Based on Modified ASTM D664)
Base Number	WI-0264, WI-0322 (Based on Modified ASTM D4739)
Base Number (Perchloric)	WI-0316 (Based on Modified ASTM D2896)
Fuel Dilution by Gas Chromatography	WI-0086; ASTM D7593
Fuel Soot % (FTIR)	WI-0045; ASTM E2412
Glycol	WI-0024 (Based on Modified ASTM D2982)
Gravimetric Solids	WI-0027
ICP Elemental Analysis Ag, Al, B, Ba, Ca, Cd, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Si, Sn, Ti, V, Zn	WI-0121 (Based on Modified ASTM D5185)
i-pH	WI-0324 (Based on Modified ASTM D7946)
Oxidation/Nitration (FTIR)	WI-0045; ASTM E2412
Particle Count	WI-0196 (Based on Modified ISO 11500)
Particle Quantifier	WI-0041
Viscosity @ 40° C or 100° C	WI-0017 (Based on Modified ASTM D445)
Viscosity Index (Calculation)	WI-0234; ASTM D2270 X2
Water by Karl Fischer (% or ppm)	WI-0259 (Based on Modified ASTM D6304C)
Water % (Estimate) (FTIR)	WI-0045; ASTM E2412
Water % by Crackle	WI-0012
<u>Fuels</u>	
Bacteria, Fungi, Mold	WI-0037

Key: WI = Laboratory Internal SOP



Accredited Laboratory

A2LA has accredited

POLARIS LABORATORIES, LLC

Indianapolis, IN

for technical competence in the field of

Chemical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Presented this 8th day of July 2022.

A blue ink signature of the Vice President of Accreditation Services.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 2145.01
Valid to June 30, 2024

For the tests to which this accreditation applies, please refer to the laboratory's Chemical Scope of Accreditation.