PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

Perry Johnson Laboratory Accreditation, Inc. has assessed the Laboratory of:

Predictive Maintenance Corporation-Tribologik®

6980 Cote de Liesse, Saint-Laurent, QC, Montreal H4T1Y5

(Hereinafter called the Organization) and hereby declares that Organization is accredited in accordance with the recognized International Standard:

ISO/IEC 17025:2017

This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system
(as outlined by the joint ISO-ILAC-IAF Communiqué dated April 2017):

Chemical Testing

(As detailed in the supplement)

Accreditation claims for such testing and/or calibration services shall only be made from addresses referenced within this certificate. This Accreditation is granted subject to the system rules governing the Accreditation referred to above, and the Organization hereby covenants with the Accreditation body's duty to observe and comply with the said rules.

For PJLA:

Tracy Szerszen
President

Perry Johnson Laboratory Accreditation, Inc. (PJLA)
755 W. Big Beaver, Suite 1325
Troy, Michigan 48084

Initial Accreditation Date:	*Issue Date:*	*Expiration Date:*
May 14, 2012	December 05, 2023	January 31, 2026

Accreditation No. :	*Certificate No.:*
73353	L23-887-1

The validity of this certificate is maintained through ongoing assessments based on a continuous accreditation cycle. The validity of this certificate should be confirmed through the PJLA website: www.pjlabs.com

Certificate of Accreditation: Supplement

Predictive Maintenance Corporation-Tribologik®
6980 Cote de Liesse, Saint Laurent, QC, Montreal H4T1Y5
Contact Name: Moussa Zidoune Phone: 514-383-6330 Ext. 24

Accreditation is granted to the facility to perform the following testing:

FIELD OF TEST	ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	RANGE (WHERE APPROPRIATE) AND DETECTION LIMIT
Chemical [F]	Lubricant, Cooling Liquids and Other Relevant Liquid	Additive Elements and Contamination	ASTM D5185 ASTM D6130 Inductively Coupled Plasma Atomic Emission	D.L. = 1 ppm
		Chloride, Fluoride, Nitrite, Nitrate, Bromide, Phosphate, Sulfate Formate Glycolate	ASTM D5827 ASTM D3634	Chloride: D.L.= 2 mg/L Nitrite: D.L.= 5 mg/L Bromide: D.L.= 4 mg/L Nitrate: D.L.= 7 mg/L Phosphate: D.L.= 20 mg/L Sulfate: D.L.= 8 mg/L Fluoride: D.L.= 2 mg/L Formate: D.L.= 2 mg/L Glycolate: D.L.= 10 mg/L
		pH	ASTM D1287	1 pH to 14 pH
		Freeze Protection	ASTM D3321	-65 °C to 0 °C
		Ethylene Glycol %	In-House Method	Up to 100 %
		Glycol Detection In Oil	ASTM D2982	Per Method
		Total Base Number	ASTM D4739 ASTM D2896	
		Total Acid Number	ASTM D664 ASTM D974	
		Viscosity Index	ASTM D2270	
		Kinematic Viscosity	ASTM D445	
		Infra-Red	JOAP	FTIR: 0 in absorbency
		TDS	In-House SOP	N/A
		Conductivity	In-House SOP	N/A
		% Water Crackle	In-House Method	Visual
		Flash Point Fire Point	ASTM D3828 ASTM D92	Per Method
		Density	ASTM D1298 ASTM D4052	D.L. = 0.000 05 g/cm^3 T = 0.03 °C
		Particle Count/Direct Reading Ferrography	NAS 1638 ISO 4406 In-House Method	Per Method
		Cloud Point Pour Point	ASTM D2500 ASTM D97	
		Water by Karl Fisher	ASTM D6304 ASTM D4928	
		Particle Quantifier	In-House Method	
	Grease	Ferrous debris monitoring	In-House Method	LL.: 0.001 mg/g UL: 25 mg/g
		Cone Penetration	ASTM D217	Up to 6 (NLGI)

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Chemical [F]	Lubricant, cooling liquids, and fuel	Flash point Closed Cup	ASTM D93 ASTM D56 ASTM D6450	UL: 42.7 °C LL: 40.4 °C
		Distillation Petroleum	ASTM D86	Initial BP: UL: 160 °C LL: 154 °C
		Cetane Index	ASTM D4737 ASTM D976	UL: 45.7 °C LL: 42.68 °C
		Copper Corrosion	ASTM D130	Range 1a to 4c
	Lubricant and Grease	Remaining Useful Life (RUL) and Routine Useful Life Evaluation Routine (RULER™) Number by Linear Sweep Voltammetry (LSV)	ASTM D6971 ASTM D6810 ASTM D7590S	Amine: UL: 68.5 % LL: 62.3 % Phenol: UL: 44.5 % LL: 40.11 %
	Cooling Liquids	Boiling Point (coolant)	ASTM D1120	UL: 112.4 °C LL: 106.12 °C
		Reserve Alkalinity	ASTM D1121	UL: 2.67 mL LL: 2.02 mL
	Oil	Diesel Fuel in Used Engine Oils (Fuel %)	ASTM D3524	D.L. = 1 %S
	Transformer Oil	Corrosive sulfur in electrical insulating liquids	ASTM D1275	Non Corrosive / Corrosive
		Dibenzyldisulfide (DBDS)	IEC 62697: Test method for quantitative determination of dibenzyldisulfide (DBDS) by GC	5 ppm to 600 ppm
		Dielectric Breakdown volt	ASTM D 1816	Up to 100 kV
		Dissipation factor, @ 25 &100C	ASTM D924	0.000 1 % to 0.3 %
		Interfacial tension	ASTM D971	Up to 100 dyne/cm
	Oil/Fuel	Sulfur Content	ASTM D4294	0.000 7 % to 3.0 %
		Color of petroleum Products ASTM (Color scale)	ASTM D1500	Up to 10

1. The presence of a superscript F means that the laboratory performs testing of the indicated parameter at its fixed location.

2. This is the primary site for all quality management system activities.