



**LABORATORY
ACCREDITATION
BUREAU** a division of A-S-B

Certificate of Accreditation

ISO/IEC 17025:2005

Certificate Number L2255.04

ALS Tribology
4943 NW Front Avenue
Portland OR 97210-4128

has met the requirements set forth in L-A-B's policies and procedures, all requirements of ISO/IEC 17025:2005 "General Requirements for the competence of Testing and Calibration Laboratories".*

The accredited lab has demonstrated technical competence to a defined "Scope of Accreditation" and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009).

Accreditation valid through: June 27, 2017

R. Douglas Leonard, Jr., President, COO
Laboratory Accreditation Bureau
Presented the 29th of April 2015

*See the laboratory's Scope of Accreditation for details of accredited parameters

**Laboratory Accreditation Bureau is found to be in compliance with ISO/IEC 17011:2004 and recognized by ILAC (International Laboratory Accreditation Cooperation) and NACLA (National Cooperation for Laboratory Accreditation).

Scope of Accreditation For ALS Tribology

4943 NW Front Avenue
Portland OR 97210
Ambrose Hughey
503-286-9845

In recognition of a successful assessment to ISO/IEC 17025:2005, accreditation is granted to **ALS Tribology** to perform the following tests:

Accreditation granted through: **June 27, 2017**

Testing - Chemical

| Technology | Range, when necessary | Methods Used | Product Types | Remarks |
|--|-----------------------|--|-----------------|------------------------------------|
| Acid Number by Colorimetric Titration | | ASTM D974 | Lubricants/Oils | |
| Acid Number by Potentiometric Titration | | ASTM D664 | Lubricants/Oils | |
| Base Number by Potentiometric Titration | | ASTM D4739 | Lubricants/Oils | |
| Fuel Dilution by Viscosity / Setaflash | | ALS SOP 5004 | Lubricants/Oils | Based on: ASTM D445 and ASTM D3828 |
| Fuel Soot by ATR/IR | | ASTM D7686 | Lubricants/Oils | |
| Spectrochemical Analysis by ICP | | ASTM D5185 | Lubricants/Oils | |
| Nitration, Oxidation, Sulphation by FTIR | | ASTM D7418 ASTM D7624 ASTM D7414 ASTM D7415 | Lubricants/Oils | |



| Technology | Range, when necessary | Methods Used | Product Types | Remarks |
|--|--------------------------------------|--|----------------------|----------------|
| Particle Count by Light Extinction | | ASTM D7647 | Lubricants/Oils | |
| Viscosity, Kinematic | | ASTM D445 | Lubricants/Oils | |
| Water by Crackle | | ALS SOP 17.0 | Lubricants/Oils | |
| Water by Karl Fischer Oven, Volumetric Titration | | ASTM E203 (Modified) ASTM D 1744 (Modified) | Lubricants/Oils | |
| Particle Quantification Index | | ALS SOP 5009 | Lubricants/Oils | |

Notes:

- 1) This laboratory offers commercial testing service.

Approved by: _____


R. Douglas Leonard
Chief Technical Officer

Date: April 29, 2015

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