



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

Certificate of Accreditation

ISO/IEC 17025:2005

Certificate Number L2255.01

ALS Tribology
935 Sunshine Road
Kansas City KS 66115

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 27th of June 2014

*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

935 Sunshine Road
Kansas City KS 66115
Deanna Angst-Hyland
913-281-9881

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/Parameter | Range | Method | Product Types | Remarks |
|--|-------|--|-----------------|--|
| Fuel Dilution by Viscosity / Setaflash | | ALS SOP 5004 | Lubricants/Oils | Based on: ASTM D445 ASTM D7279 ASTM D3828 |
| Fuel Soot by Infracal Soot Meter | | ASTM D7686 | Lubricants/Oils | |
| Total Base Number (Perchloric acid) | | ASTM D2896 | Lubricants/Oils | |
| Crackle Test/Hotplate | | ALS SOP 043 | Lubricants/Oils | |
| Viscosity, Kinematic (Cannon and TriVisc) | | ASTM D445 | Lubricants/Oils | |
| Viscosity, Kinematic (Houillon) | | ASTM D7279 | Lubricants/Oils | |
| Viscosity Index | | ASTM D2270 | Lubricants/Oils | |
| Wear Metals and Additives by Rotating Disk Spectrometer | | ASTM D6595 | Lubricants/Oils | |
| Oxidation, Nitration, Sulphation and Soot by FTIR | | ASTM D7418, D7414, D7415, D7624, & D7844 | Lubricants/Oils | |



| Technology/Parameter | Range | Method | Product Types | Remarks |
|---|--------------|--|----------------------|----------------|
| Wear Metal Analysis and Additives by ICP | | ASTM D5185 (Modified) | Lubricants/Oils | |
| Automated Particle Count by Light Extinction | | ASTM D7647 (Modified) | Lubricants/Oils | |
| Water by Karl Fischer | | ASTM D1744 (Modified) ASTM E 203 (Modified) | Lubricants/Oils | |
| Total Acid Number | | ASTM D664 (Modified) | Lubricants/Oils | |
| Total Base Number (Hydrochloric acid) | | ASTM D4739 | Lubricants/Oils | |

Notes:

- 1) This laboratory offers commercial testing service.

Approved by: _____



R. Douglas Leonard
Chief Technical Officer

Date: June 16, 2015