Deutsche Akkreditierungsstelle

Annex to the Accreditation Certificate D-PL-20281-01-00 according to DIN EN ISO/IEC 17025:2018

Valid from: **19.12.2022**

Date of issue: 19.12.2022

Holder of accreditation certificate:

Deutsche Ölwerke Lubmin GmbH
Freesendorfer Weg 4, 17509 Lubmin

The testing laboratory meets the minimal requirements of DIN EN ISO/IEC 17025:2018 and, if applicable, additional legal and normative requirements, including those in relevant sectoral schemes, in order to carry out the conformity assessment activities listed below.
The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of testing laboratories and confirm generally with the principles of DIN EN ISO 9001.

Chemical and physical-chemical testing of mineral oil and related products; Selected properties of lubricants such as engine oils, gear oils and hydraulic oils

The testing laboratory is permitted, without being required to inform and obtain prior approval from DAkkS, to apply the standardized test methods in different versions listed in this document. The testing laboratory maintains a current list of all test methods within the flexible scope of accreditation.

This certificate annex is only valid together with the written accreditation certificate and reflects the status as indicated by the date of issue. The current status of any given scope of accreditation can be found in the directory of accredited bodies maintained by Deutsche Akkreditierungsstelle GmbH at https://www.dakks.de.

1. Automotive Oils

Test Method	Title	Process-Matrix-Number[+)]
	Density at 15 ° C	**5.1.22**
DIN EN ISO 12185 1997-11	Crude petroleum and petroleum products - Determination of density - Oscillating U-tube method	**5.1.22**
	Kinematic Viscosity at 40 °C and 100 °C	**5.1.54**
DIN 51562-1 1999-01	Viscometry - Measurement of kinematic viscosity by means of the Ubbelohde viscometer - Part 1: Viscometer specification and measurement procedure	**5.1.54**
DIN 51659-2 2017-02	Lubricants - Test methods - Part 2: Determination of the kinematic viscosity of used lubricating oils by Stabinger viscometer	**-.-.-**
	HTHS-Viscosity	**5.1.142**
ASTM D 5481 2013	Standard Test Method for Measuring Apparent Viscosity at High-Temperature and High-Shear Rate by Multicell Capillary Viscometer	**-.-.-**
	CSS Viskosity (Apparent Viscosity)	**5.1.173**
ASTM D 5293 2017a	Standard Test Method for Apparent Viscosity of Engine Oils between -5 °C and -30 °C using the Cold Cranking Simulator	**5.1.173**
	Viscosity Index	**5.1.171**
DIN ISO 2909 2004-08	Petroleum products - Calculation of viscosity index from kinematic viscosity	**5.1.171**
	Evaporation Loss	**5.1.141**
ASTM D 5800 2019a	Standard Test Method for Evaporation Loss of Lubricating Oil by the Noack Method	**-.-.-**

Test Method	Title	Process-Matrix-Number[+)]
	Flash Point (COC)	**5.1.28**
DIN EN ISO 2592 2018-01	Petroleum products - Determination of flash and fire points - Cleveland open cup method	**5.1.28**
	Pour Point	**5.1.79**
ASTM D 7346 2015	Standard Test Method for No Flow Point and Pour Point of Petroleum Products and Liquid Fuels	**-.-.-**
	Colour	**5.1.26**
DIN ISO 2049 2001-06	Petroleum products - Determination of colour (ASTM scale)	**5.1.26**
	IR-Spectrum	**5.1.166**
DIN 51451 2004-09	Testing of petroleum products and related products - Analysis by infrared spectrometry - General working principles	**5.1.166**
	Total Base Number	**5.1.70**
ASTM D 2896 2015	Standard Test Method for Base Number of Petroleum Products by Potentiometric Perchloric Acid Titration	**-.-.-**
	Additive Elements	
ASTM D 4927 2015	Standard Test Method for Elemental Analysis of Lubricant and Additive Components – Barium, Calcium, Phosphorus, Sulfur, and Zinc by Wavelength-Dispersive X-Ray Fluorescene Spectroscopy	**-.-.-**
	MRV Viscosity	**5.1.120**
ASTM D 4684 2018	Standard Test Method for Determination of Yield Stress and Apparent Viscosity of Engine Oils at Low Temperature	**5.1.120**

Test Method	Title	Process-Matrix-Number[+)]
	Sulfated Ash	**5.1.93**
DIN 51575 2016-06	Testing of mineral oils - Determination of sulfated ash	5.1.93

2. Gear Oils

Test Method	Title	Process-Matrix-Number[+)]
	Density at 15°C	**5.2.22**
DIN EN ISO 12185 1997-11	Crude petroleum and petroleum products - Determination of density - Oscillating U-tube method	5.2.22
	Kinematic Viscosity at 40 °C and 100 °C	**5.2.54**
DIN 51562-1 1999-01	Viscometry - Measurement of kinematic viscosity by means of the Ubbelohde viscometer - Part 1: Viscometer specification and measurement procedure	**5.2.54**
DIN 51659-2 2017-02	Lubricants - Test methods - Part 2: Determination of the kinematic viscosity of used lubricating oils by Stabinger viscometer	**-.-.-**
	Viscosity Index	**5.2.171**
DIN ISO 2909 2004-08	Petroleum products - Calculation of viscosity index from kinematic viscosity	**5.2.171**
	Evaporation Loss	
ASTM D 5800 2019a	Standard Test Method for Evaporation Loss of Lubricating Oil by the Noack Method	**-.-.-**
	Flash Point (COC)	**5.2.28**
DIN EN ISO 2592 2018-01	Petroleum products - Determination of flash and fire points - Cleveland open cup method	**5.2.28**
	Pour Point	**5.2.79**

Test Method	Title	Process-Matrix-Number[+)]
ASTM D 7346 2015	Standard Test Method for No Flow Point and Pour Point of Petroleum Products and Liquid Fuels	**-.-.-**
	Colour	**5.2.26**
DIN ISO 2049 2001-06	Petroleum products - Determination of colour (ASTM scale)	**5.2.26**
	IR-Spectrum	
DIN 51451 2020-02	Testing of petroleum products and related products - Analysis by infrared spectrometry - General working principles	-.-.-
	Additivelemente	
ASTM D 7751 2016	Standard Test Method for Determination of Additive Elements in Lubricating Oils by EDXRF Analysis	**-.-.-**
	Brookfield Viscometry	**5.2.229**
ASTM D 2983 2009	Standard Test Method for Low-Temperature Viscosity of Lubricants Measured by Brookfield Viscometer	**5.2.229**

3. Hydraulic Oils (HL, HLP, HVLP)

Test Method	Title	Process-Matrix-Number[+)]
	Density at 15°C	**6.16.170**
DIN EN ISO 12185 1997-11	Crude petroleum and petroleum products - Determination of density - Oscillating U-tube method	**6.16.170**
	Kinematic Viscosity at 100 °C	**6.16.117**
DIN 51562-1 1999-01	Viscometry - Measurement of kinematic viscosity by means of the Ubbelohde viscometer - Part 1: Viscometer specification and measurement procedure	**6.16.117**

Test Method	Title	Process-Matrix-Number[+)]
DIN 51659-2 2017-02	Lubricants - Test methods - Part 2: Determination of the kinematic viscosity of used lubricating oils by Stabinger viscometer	**-.-.-**
	Kinematic Viscosity at 40 °C	**6.16.118**
DIN 51562-1 1999-01	Viscometry - Measurement of kinematic viscosity by means of the Ubbelohde viscometer - Part 1: Viscometer specification and measurement procedure	**6.16.118**
DIN 51659-2 2017-02	Lubricants - Test methods - Part 2: Determination of the kinematic viscosity of used lubricating oils by Stabinger viscometer	**-.-.-**
	Viscosity Index	
DIN ISO 2909 2004-08	Petroleum products - Calculation of viscosity index from kinematic viscosity	**-.-.-**
	Evaporation Loss	
ASTM D 5800 2019a	Standard Test Method for Evaporation Loss of Lubricating Oil by the Noack Method	**-.-.-**
	Flash Point	**6.16.28**
DIN EN ISO 2592 2018-01	Petroleum products - Determination of flash and fire points - Cleveland open cup method	**6.16.28**
	Pour Point	**6.16.79**
ASTM D 7346 2015	Standard Test Method for No Flow Point and Pour Point of Petroleum Products and Liquid Fuels	**-.-.-**
	Colour	
DIN ISO 2049 2001-06	Petroleum products - Determination of colour (ASTM scale)	**-.-.-**

Test Method	Title	Process-Matrix-Number[+)]
	IR-Spectrum	
DIN 51451 2020-02	Testing of petroleum products and related products - Analysis by infrared spectrometry - General working principles	**-.-.-**
	Additivelemente	
ASTM D 7751 2016	Standard Test Method for Determination of Additive Elements in Lubricating Oils by EDXRF Analysis	**-.-.-**
	Additive Elements	
ISO 4406 2021-01	Hydraulic fluid power - Fluids - Method for coding the level of contamination by solid particle	**6.16.270**

Abbreviations used:

ASTM	American Society for Testing and Materials
DIN	Deutsches Institut für Normung e.V.
EN	European Standard
ISO	International Organization for Standardization
Process-Matrix-Number+)	Number of the characteristics within the Process-Matrix for Mineral Oel (FO-Antrag GB_Mineralöl.xlsx, Vers. 1.1, 23. Februar 2022)