

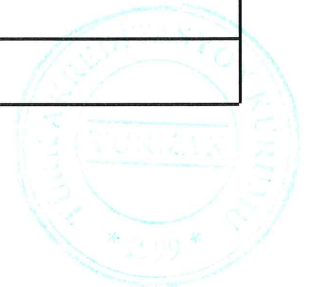


## Annex of the certificate (Page 1/4)

### Accreditation Scope

 	<p><b>OPET FUCHS MADENİ YAĞ SAN. TİC. A.Ş .</b></p> <p><b>Accreditation Nr: AB-0549-T</b>  <b>Revision Nr: 010 Date: 03.02.2022</b></p>
<b>As a Testing Laboratory</b>	
<p><b>Address:</b></p> <p>Opet Fuchs Madeni Yağ Sanayi ve Ticaret  A.Ş. Atatürk Mahallesi İnönü Bulvarı No:52/19  TR 35800 Aliağa / İZMİR 35800</p>	<p><b>Phone</b> : 0 232 376 78 38  <b>Fax</b> : 0 232 376 78 39  <b>E-Mail</b> : OFT-DL-Laboratory@opetfuchs.com.tr  <b>Website</b> : www.opetfuchs.com.tr</p>

Tested Materials / Products	Name of Test	Testing Method (National, International standards, in house methods)
Lubricating Oil	Determination of ASTM Color	ASTM D 1500 ASTM D 6045 TS 1713 ISO 2049
Lubricating Oil	Calculating of Viscosity Index	ASTM D 2270 TS ISO 2909
Lubricating Oil	Determination of Flash Points Cleveland Open Cup Method	ASTM D 92 TS EN ISO 2592
Lubricating Oil	Determination of Pour Point	ASTM D 97 TS EN ISO 3016
Lubricating Oil	Determination of Pour Point Automatic Tilt Method	ASTM D 5950
Lubricating Oil	Determination of Foaming Characteristics	ASTM D 892 TS 1834 ISO 6247
Lubricating Oil	Determination of Base Number Potentiometric Perchloric Acid Titration Method	ASTM D 2896 TS 5655 ISO 3771
Lubricating Oil	Determination of Acid Number Non-Aqueous Potentiometric Titration Method	TS 2432 EN 12634
Lubricating Oil	Determination of Acid Number Potentiometric Titration Method	ASTM D 664
Lubricating Oil	Determination of Acid Number Color- Indicator Titration Method	ASTM D 974 TS 9178 ISO 6618
Lubricating Oil	Determination of Water Separability	ASTM D 1401 TS 6122 ISO 6614
Lubricating Oil	Determination of Corrosion Preventing Characteristics Chip/Filter Paper Method	DIN 51360/2 TS 5208
Lubricating Oil	Determination of Refractive Index	ASTM D 1218 TS 4368 ISO 5661
Lubricating Oil	Determination of Extreme Pressure Properties of Lubricating Fluids Four Ball Method	ASTM D 2783 TS 5654
Lubricating Oil	Determination of Wear Preventive Characteristics Four-Ball Method	ASTM D 4172 TS 5715
Lubricating Oil	Determination of Apparent Viscosity Cold-Cranking Simulator Method	ASTM D 5293 TS 1896

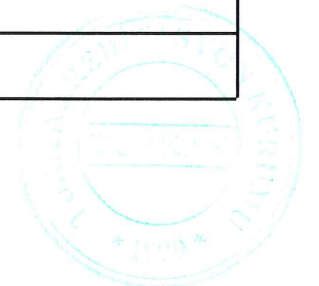


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### Accreditation Scope

 <p style="font-size: small; text-align: center;">Test TS EN ISO/IEC 17025 AB-0549-T</p>	<p><b>OPET FUCHS MADENİ YAĞ SAN. TİC. A.Ş .</b></p> <p><b>Accreditation Nr: AB-0549-T</b></p> <p><b>Revision Nr: 010 Date: 03.02.2022</b></p>
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Tested Materials / Products	Name of Test	Testing Method (National, International standards, in house methods)
Lubricating Oil	Determination of Additive Elements (Calcium (Ca), Copper (Cu), Zinc (Zn), Magnesium (Mg), Boron (B), Molybdenum (Mo), Sodium (Na) Phosphorus (P), Sulfur (S) Determination)) ICP Emission Spectrometry Method	ASTM D 4951
Lubricating Oil	Determination of Additive Elements, Wear Metals and Amount of Contaminants (Aluminum (Al), Boron (B), Calcium (Ca), Copper (Cu), Iron (Fe), Magnesium (Mg), Molybdenum (Mo), Sodium (Na), Nickel (Ni), Lead (Pb) Phosphorus (P), Silicon (Si) Tin (Sn) and Zinc (Zn) ICP Emission Spectrometry Method	ASTM D 5185 TS 13351
Lubricating Oil	Determination of Copper Strip Corrosion	ASTM D130 TS 2741 EN ISO 2160
Lubricating Oil	Determination of Water Coulometric Karl Fischer Titration Method	ASTM D 6304 TS 6147 EN ISO 12937
Lubricating Oil, NOx reducing agent AUS-32	Determination of Density and Relative Density Oscillating U-Tube Method	ASTM D 4052 ISO 12185 TS EN ISO 12185
Lubricating Oil	Determination of Kinematic Viscosity and Calculation of Dynamic Viscosity	ASTM D 445 TS EN ISO 3104
Lubricating Oil	Determination of Saybolt Color Saybolt Chromometer Method	ASTM D 6045 ASTM D 156 TS 2991
Lubricating Oil	Determination of Low-Temperature Viscosity Rotational Viscometer (Brookefield) Method	ASTM D 2983 TS 13488
Lubricating Oil	Estimation of Mean Relative Molecular Mass Viscosity Measurements Method	ASTM D 2502 TS 5215
Lubricating Oil	Calculation of Carbon Distribution and Structural Group Analysis d-M Method	ASTM D 3238 TS 6519
Lubricating Oil	Calculation of Viscosity-Gravity Constant (VGC)	ASTM D 2501 TS 7113
Lubricating Oil	Determination of Pentane Insolubles Membrane Filtration Method	ASTM D 4055 TS 7713
Lubricating Oil	Determination of Dynamic Viscosity and Density and the Calculation of Kinematic Viscosity Stabinger Method	ASTM D 7042
Lubricating Oil	Rust Preventing Characteristics in the Presence of Water	ASTM D665 TS 6830 ISO 7120



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Tested Materials / Products	Name of Test	Testing Method (National, International standards, in house methods)
Lubricating Oil	Determination of Cloud Point	ASTM D2500 TS 2834 EN 23015
Lubricating Oil	Determination of Flash Point Pensky-Martens Closed Cup Method	ASTM D93 TS EN ISO 2719
Lubricating Oil	Determination of elements content of additives, wear and other contaminations - Barium (Ba), Copper (Cu), Calcium (Ca), Magnesium (Mg), Molybdenum (Mo), Sodium (Na), Phosphorus (P), Zinc (Zn), Chlorine (Cl), Sulfur (S) Wavelength dispersive X-ray fluorescence spectrometry (WDXRF) Method	DIN 51399-2 ASTM D6443
Lubricating Oil	Determination of Saponification Number	ASTM D 94 TS 4730 ISO 6293-1 TS ISO 6293-2
Lubricating Oil	Determination of No Flow Point and Pour Point	ASTM D7346
Lubricating Oil	Evaluation of Used Oils FTIR Method	ASTM E2412
Engine Coolants	Determination of Reserve Alkalinity	ASTM D1121
Engine Coolants	Determination of pH	ASTM D 1287 TS 4614
Engine Coolants	Determination of Density and Relative Density Oscillating U-Tube Method	ASTM D 5931
Engine Coolants	Determination of Boiling Point	ASTM D 1120
Lubricating Grease	Determination of Wear Preventive Characteristics Four-Ball Method	ASTM D 2266 TS EN ISO 20623
Lubricating Grease	Determination of Extreme Pressure Properties Four-Ball Method	ASTM D 2596 TS EN ISO 20623
Lubricating Grease	Determination of Penetration	ASTM D 217 TS 1799 ISO 2137
Lubricating Grease	Determination of Dropping Point Over Wide Temperature Range	ASTM D2265 TS 5937 ISO 6299
Lubricating Grease	Determination of Copper Strip Corrosion	ASTM D 4048
Lubricating Grease	Determination of Dropping Point	ASTM D 566 TS 1267 ISO 2176
Lubricating Grease	Determination of Oil Separation During Storage	ASTM D 1742 TS 2263





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Tested Materials / Products	Name of Test	Testing Method (National, International standards, in house methods)
Lubricating Oil, Lubricating Grease	Determination of Water Distillation Method	ASTM D 95 TS ISO 3733
NOx reducing agent AUS-32	Determination of Urea Content by Refractive Index Method	ISO 22241-2, Annex C TS ISO 22241-2 Annex C
NOx reducing agent AUS-32	Determination of Biuret Content Spectrometry Method	ISO 22241-2, Annex E TS ISO 22241-2 Annex E
NOx reducing agent AUS-32	Determination of Refractive index	ISO 22241-2, Annex C TS ISO 22241-2 Annex C
NOx reducing agent AUS-32	Determination of Alkalinity Titration Method	ISO 22241-2, Annex D TS ISO 22241-2 Annex D
NOx reducing agent AUS-32	Determination of Aldehyde Content Spectrometry Method	ISO 22241-2, Annex F TS ISO 22241-2 Annex F
NOx reducing agent AUS-32	Determination of Insoluble Matter Content Gravimetric Method	ISO 22241-2, Annex G TS ISO 22241-2 Annex G
NOx reducing agent AUS-32	Determination of Phosphate (PO <sub>4</sub> ) Content Spectrometry Method	ISO 22241-2, Annex H TS ISO 22241-2 Annex H
NOx reducing agent AUS-32	Determination of Trace Element Content  Calcium (Ca), Iron (Fe), Copper (Cu), Zinc (Zn), Chrome (Cr), Nickel (Ni), Aluminum (Al), Magnesium (Mg), Sodium (Na) and Potassium (K)  ICP Emission Spectrometry Method	ISO 22241-2, Annex I TS ISO 22241-2 Annex I
NOx reducing agent AUS-32	Determination of Identity FTIR Spectrometry Method	ISO 22241-2, Annex J TS ISO 22241-2 Annex J
Water	Determination of Conductivity	ASTM D 1125

End of Scope



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**G. Banu MÜDERRİSOĞLU**  
Secretary General