REPUBLIC OF BULGARIA
Executive agency
Bulgarian accreditation service

Signatory to the EA Multilateral Agreement in this field

ORDER

No A 441

Sofia, 29.11.2024

Pursuant to Art. 10, para. 1, items 3 and 4, Art. 28, para. 1 and Art. 30, para. 1 of the Law on National Accreditation of Conformity Assessment Bodies, items 6 and 7 of the BAS QR 2 Accreditation Procedure, in connection with an open procedure reg. № 19/10 ЛИК/ПА/РО/05.06.2024, assessment report reg. № 19/10 ЛИК/4/В/16.09.2024 and statement of the Accreditation Commission reg. № 19/10 ЛИК/ПА/РО/5/В/22.11.2024, I hereby

RE-ACCREDIT AND EXTEND THE SCOPE OF ACCREDITATION

SAYBOLT-BULGARIA LTD
TEST CENTRE SAYBOLT-BULGARIA

Management and Laboratory address:
8104, Burgas, Industrial Zone № 3, Lukoil Neftohim Burgas AD

I.To perform testing of:

Type of the scope: *flexible for a part of the scope*

№	Tested products	Type of test / characteristic	Testing methods (standard/ validated method)
1	2	3	4
1.	CRUDE OIL	1.1 Density	БДС EN ISO 3675 ASTM D 1298 ASTM D 5002
		1.2 Sulfur content	БДС EN ISO 8754 ASTM D 4294
		1.3 Water content	БДС EN ISO 9029 ASTM D 4006
		1.4Salts content	ASTM D 3230
		1.5 Sediments (by extraction)	БДС EN ISO 3735 ASTM D 473
		1.6 Maximum pour point	ASTM D 5853 (A)
2.	AUTOMOTIVE FUELS, UNLEADED GASOLINES, GASOLINES, BIOGASOLINE,	2.1 Appearance	БДС ISO 1998-2 БДС EN 228 cl.5.4 ASTM D 4176
		2.2 Density	БДС EN ISO 3675 ASTM D 1298 БДС EN ISO 12185 ASTM D 4052
		2.3 Distillation characteristics	БДС EN ISO 3405 ASTM D 86
		2.4 Vapour pressure (Reid method)	ASTM D 323
		2.5 Volatility index	БДС EN 228 cl.5.5.2
		2.6 Sulfur content	БДС EN ISO 8754

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Type of the scope: *flexible for a part of the scope*			
№	**Tested products**	**Type of test / characteristic**	**Testing methods (standard/ validated method)**
1	2	3	4
			ASTM D 4294 БДС EN ISO 20846 ASTM D 5453 БДС EN ISO 20884
		2.7 Copper strip corrosion	БДС EN ISO 2160 ASTM D 130 ASTM D 4814 cl.7.1.4
		2.8 Gum content (unwashed or solvent washed)	БДС EN ISO 6246 ASTM D 381
		2.9 Vapour pressure	БДС EN 13016-1 ASTM D 5191
		2.10 Lead content	БДС EN 237 ASTM D 3237
		2.11 Water-soluble acids and bases	БДС 5252 ASTM D 1093
		2.12 ydrocarbon type: - Arenes (aromatic) - Alkenes (olefins) - Saturated (paraffins)	БДС ISO 3837 ASTM D 1319 ASTM D 5134 БДС EN 15553 ASTM D 6839 ASTM D 5443 БДС EN ISO 22854
		2.13 Motor Octane number, MON	БДС EN ISO 5163 ASTM D 2700 ГОСТ 511 ГОСТ Р 52946
		2.14 Research Octane number, RON	БДС EN ISO 5164 ASTM D 2699 ГОСТ 8226 ГОСТ Р 52947
		2.15 Mercaptan sulfur	БДС ISO 3012 ASTM D 3227 UOP 163
		2.16 Hydrogen sulfide	ASTM D 4952 БДС 5579 UOP 163
		2.17 Oxygen content	БДС EN 13132 БДС EN ISO 22854 ASTM D 6839
		2.18 Oxygen-containing compounds	БДС EN 13132 БДС EN ISO 22854 ASTM D 6839
		2.19 Methyl tert-butyl ether (MTBE) content	IP PM BG/91 (modified)
		2.20 Benzene content	БДС EN 12177 ASTM D 5134 БДС EN ISO 22854 ASTM D 6839
		2.21 Oxidation stability (Induction period)	БДС EN ISO 7536 ASTM D 525
		2.22 Manganese content	БДС EN 16135 БДС EN 16136

Type of the scope: *flexible for a part of the scope*			
№	**Tested products**	**Type of test / characteristic**	**Testing methods (standard/ validated method)**
1	2	3	4
		2.23 Saybolt colour	ASTM D 156
		2.24 Metals content - Lead - Arsenic	ВЛМИ-СБ/001/2019
		2.25 Iron content	БДС EN 16136
3.	FUELS FOR DIESEL ENGINES, GASOILS FOR INDUSTRIAL AND COMMUNAL PURPOSES, MARINE DISTILLATE FUELS	3.1 Density	БДС EN ISO 3675 ASTM D 1298 БДС EN ISO 12185 ASTM D 4052
		3.2 Appearance	ASTM D 4176
		3.3 Distillation characteristics	БДС EN ISO 3405 ASTM D 86
		3.4 Sulfur content	БДС EN ISO 8754 ASTM D 4294 БДС EN ISO 20846 ASTM D 5453 БДС EN ISO 20884
		3.5 Copper strip corrosion	БДС EN ISO 2160 ASTM D 130
		3.6 Water-soluble acids and bases	БДС 5252
		3.7 Hydrogen sulfide	БДС 5579
		3.8 Cetane number, CN	БДС EN ISO 5165 ASTM D 613
		3.9 Cetane index	БДС EN ISO 4264 ASTM D 4737 ASTM D 976
		3.10 Kinematic viscosity	БДС EN ISO 3104 ASTM D 445
		3.11 Flash point (closed-cup), Pensky- Martens	БДС EN ISO 2719 ASTM D 93
		3.12 Ash content	БДС EN ISO 6245 ASTM D 482
		3.13 Carbon Residue	БДС ISO 6615 ASTM D 189 БДС EN ISO 10370 ASTM D 4530
		3.14 Water content	БДС EN ISO 12937 БДС ISO 3733 ASTM D 6304 ASTM D 95
		3.15 Water and sediments	ASTM D 2709
		3.16 Cloud point	БДС EN ISO 3015 ASTM D 2500
		3.17 ASTM scale colour	БДС ISO 2049 ASTM D 1500
		3.18 Lubrication ability at 60°C	БДС EN ISO 12156-1 ASTM D 6079
		3.19 Fatty acids methyl esters (FAME) content	БДС EN 14078
		3.20 Acid number	ASTM D 974 ASTM D 664

Type of the scope: *flexible for a part of the scope*			
№	**Tested products**	**Type of test / characteristic**	**Testing methods (standard/ validated method)**
1	2	3	4
		3.21 Freezing point	БДС 1751
		3.22 Pour point	БДС EN ISO 3016 ASTM D 97
		3.23 Cold filter plugging point (CFPP)	БДС EN 116 ASTM D 6371
		3.24 Oxidation stability	БДС EN ISO 12205 ASTM D 2274
		3.25 Total contamination	БДС EN 12662-1 IP 440
		3.26 Total sediment by hot filtration	БДС ISO 10307-1 ASTM D 4870 IP 375
		3.27 Aromatic hydrocarbons type - Monoaromatic - Diaromatic - Triaromatic (arenes) - Polycyclic aromatic (arenes)	БДС EN 12916 IP 391
		3.28 Manganese content	БДС EN 16576
		3.29 Specific heat of combustion	БДС ISO 8217 Annex J ASTM D 4868
		3.30 Oxidation stability by accelerated oxidation method, 110°C	БДС EN 15751
		3.31 Iron content	БДС EN 16576
		3.32 Electrical conductivity	ASTM D 2624
		3.33 Solvent Blue 79 Similar content	ВЛМИ-СБ/002/2024
		3.34 Content: - n-Butyl phenyl ether (Butoxybenzene) - ACCUTRACE™ PLUS	ВЛМИ-СБ/003/2024
4.	BIODIESEL	4.1 Density	БДС EN ISO 3675 ASTM D 1298 БДС EN ISO 12185 ASTM D 4052
		4.2 Sulfur content	БДС EN ISO 20846 ASTM D 5453
		4.3 Copper strip corrosion	БДС EN ISO 2160 ASTM D 130
		4.4 Cetane number, CN	БДС EN ISO 5165 ASTM D 613
		4.5 Kinematic viscosity	БДС EN ISO 3104 ASTM D 445
		4.6 Flash point (closed-cup), Pensky - Martens	БДС EN ISO 2719 ASTM D 93
		4.7 Carbon Residue	БДС EN ISO 10370 ASTM D 4530
		4.8 Water content	БДС EN ISO 12937 ASTM D 6304
		4.9 Pour point	БДС EN ISO 3016 ASTM D 97

Type of the scope: *flexible for a part of the scope*			
№	**Tested products**	**Type of test / characteristic**	**Testing methods (standard/ validated method)**
1	2	3	4
		4.10 Cold filter plugging point (CFPP)	БДС EN 116 ASTM D 6371
		4.11 Total contamination	БДС EN 12662-2 IP 440
		4.12 Oxidation stability by accelerated oxidation method, 110°C	БДС EN 15751 БДС EN 14112
5.	FUEL OILS, MARINE RESIDUAL FUELS	5.1 Density	БДС EN ISO 3675 ASTM D 1298 БДС EN ISO 12185 ASTM D 4052
		5.2 Sulfur content	БДС EN ISO 8754 ASTM D 4294
		5.3 Water-soluble acids and bases	БДС 5252
		5.4 Kinematic viscosity	БДС EN ISO 3104 ASTM D 445
		5.5 Flash point (closed-cup), Pensky- Martens	БДС EN ISO 2719 ASTM D 93
		5.6 Ash content	БДС EN ISO 6245 ASTM D 482
		5.7 Carbon Residue	БДС ISO 6615 ASTM D 189 БДС EN ISO 10370 ASTM D 4530
		5.8 Water content	БДС ISO 3733 ASTM D 95
		5.9 Water and sediments	БДС ISO 3734 ASTM D 1796
		5.10 Sediments (by extraction)	БДС EN ISO 3735 ASTM D 473
		5.11 Specific heat of combustion	БДС ISO 8217 Annex J ASTM D 4868
		5.12 Freezing point	БДС 1751
		5.13 Pour point	БДС EN ISO 3016 ASTM D 97
		5.14 Flash point open - cup	БДС EN ISO 2592 ASTM D 92
		5.15 ASTM scale colour	БДС ISO 2049 ASTM D 1500
		5.16 Acid number	ASTM D 664
		5.17 Total sediment by hot filtering	БДС ISO 10307-1/2 ASTM D 4870 IP 375 IP 390
		5.18 Asphaltene content	ASTM D 6560 IP 143
		5.19 Element content - Sodium - Nickel - Calcium - Vanadium	IP 470

Type of the scope: *flexible for a part of the scope*			
№	**Tested products**	**Type of test / characteristic**	**Testing methods (standard/ validated method)**
1	2	3	4
		- Aluminum - Silicon - Zinc - Iron	
		5.20 Element content - Phosphorus - Sodium - Nickel - Calcium - Vanadium - Aluminum - Silicon - Zinc - Iron	IP 501
		5.21 Element content - Aluminum - Silicon	ASTM D 5184
		5.22 Metal content - Sodium - Nickel - Vanadium - Iron	ASTM D 5863
6.	JET FUELS	6.1 Density	БДС EN ISO 3675 ASTM D 1298 БДС EN ISO 12185 ASTM D 4052
		6.2 Distillation characteristics	БДС EN ISO 3405 ASTM D 86
		6.3 Sulfur content	БДС EN ISO 8754 ASTM D 4294 БДС EN ISO 20846 ASTM D 5453 БДС EN ISO 20884
		6.4 Specific heat of combustion	ASTM D 3338
		6.5 Copper strip corrosion	БДС EN ISO 2160 ASTM D 130
		6.6 Hydrocarbon type: - Arenes (aromatic) - Alkenes (olefins) - Saturated (paraffins)	ASTM D 1319 БДС EN 15553
		6.7 Content of resins -ubwashed, washed with solvent	БДС EN ISO 6246 ASTM D 381
		6.8 Mercaptan sulfur	БДС ISO 3012 ASTM D 3227 UOP 163
		6.9 Hydrogen sulfide	ASTM D 4952 UOP 163
		6.10 Saybolt colour	ASTM D 156
		6.11 electrical conductivity	ASTM D 2624
7.	METHYL TERT- BUTYL ETHER (MTBE)	7.1 Appearance	БДС ISO 1998-2 ASTM D 4176
		7.2 Density	ASTM D 4052

Type of the scope: *flexible for a part of the scope*			
№	**Tested products**	**Type of test / characteristic**	**Testing methods (standard/ validated method)**
1	2	3	4
			БДС EN ISO 12185
		7.3 Methyl tert-butyl ether (MTBE)	ASTM D 5441
		7.4 Methanol	ASTM D 5441
		7.5 Tert-butyl alcohol (TBA)	ASTM D 5441
		7.6 Water content	ASTM E 1064
		7.7 Sulfur content	БДС EN ISO 20846 ASTM D 5453
8.	TECHNICAL SULFUR	8.1 Sulfur content	БДС 1678 cl. 4.1
		8.2 Ash content	БДС 1678 cl. 4.5
		8.3 Acids content recalculated as H_2SO_4	БДС 1678 cl. 4.4
		8.4 Organic substances content	БДС 1678 cl. 4.5
		8.5 Moisture content	БДС 1678 cl. 4.9

****Flexible Scope:** *Implementing a new version of standards/documents or standards/ documents replacing them is allowed. An updated list of standards/documents and their dated versions is provided by CAB.*

References:

1. ВЛМИ-СБ/001/2019-Determination of the content of lead and arsenic in motor fuels and components for fuels, by ICP-OEC, from 2019.

2. IP PM BG/91 (modified)-Determination of the content of methyl tert-Butyl ether (MTBE) and tert- Amyl methyl ether (TAME) in light distillate raw materials - gas chromatography method.

3. ВЛМИ-СБ/002/2024-Determination of the content of the Solvent Blue 79 Similar marker using a spectrophotometer with ultraviolet measurement capabilities - Cary Win UV 50 BIO, from 2024.

4. ВЛМИ-СБ/003/2024- Determination of the content of n-Butyl phenyl ether (Butoxybenzene) in diesel fuels by two-dimensional gas chromatography with mass selective detector (GCMS) and calculation of the total content of the fuel marker ACCUTRACE ™ Plus, from 2024.

II. To perform sampling of:

Type of the scope: *flexible**		
№	**Tested products**	**Sampling methods (standard/validated method)**
1	2	3
1.	Crude oil	БДС EN ISO 3170, ASTM D 4057, ASTM D 5842
2.	Automotive fuels, unleaded gasolines, gasolines, biogasoline	БДС EN ISO 3170, ASTM D 4057, ASTM D 5842
3.	Fuels for diesel engines, gasoils for industrial and communal purposes, marine distillate fuels	БДС EN ISO 3170, ASTM D 4057, ASTM D 5842
4.	Biodiesel	БДС EN ISO 3170, ASTM D 4057, ASTM D 5842
5.	Fuel oils, marine residual fuels	БДС EN ISO 3170, ASTM D 4057, ASTM D 5842
6.	Jet fuels	БДС EN ISO 3170, ASTM D 4057, ASTM D 5842
7.	Methyl tert-butyl ether (mtbe)	БДС EN ISO 3170, ASTM D 4057
8.	Solid chemical products (technical sulfur)	БДС ISO 8213

***Flexible Scope:** Implementing a new version of standards/documents or standards/ documents replacing them is allowed. An updated list of standards/documents and their dated versions is provided by CAB.*

III. To perform calibration of:

Type of the scope: *fixed*

№	Type of measuring instrument	Measured quantuty, measurement unit	Measurement range	Measurement uncertainty	Calibration method
1	2	3	4	5	6
1.	Hydrometers for liquids with low surface tension	g/cm^3	from 0.6000 g/cm^3 to 1.1000 g/cm^3	0.00008 g/cm^3	МК-05/2019
2.	Automatic apparatus for density measurement	g/cm^3	From 0.7200 g/cm^3 To 1.0000 g/cm^3	0.00008 g/cm^3	МК-09/2019

References:

1. МК-05/2019 – Method of calibration of technical means for density measuring - Hydrometers for liquids with low surface tension from 2019.

2. МК-09/2019 - Method of calibration of automatic apparatus for density measurement from 2019.

I ORDER

To issue the certificate of accreditation reg. № 10 ЛИК/29.11.2024, valid until 29.11.2028, and this order as an integral part of it.

The certificate of accreditation with the enclosure to be received by the Manager / representative of Saybolt-Bulgaria Ltd, the head of Test Centre Saybolt-Bulgaria at Saybolt-Bulgaria Ltd, or other authorized person in the office of EA BAS.

Upon receipt of the certificate and the enclosure issued, Test Centre Saybolt-Bulgaria at Saybolt-Bulgaria Ltd, Burgas is obliged to return to EA BAS the originals of accreditation certificate № 10 ЛИК/30.11.2020, valid until 30.11.2024 and its enclosure, EA BAS order reg. № А 698/30.11.2020.

This order shall be notified to the Test Centre Saybolt-Bulgaria at Saybolt-Bulgaria Ltd, Burgas, within 3 (three) days from its issuance.

Eng. Irena Borislavova

Executive Director of EA BAS