**SCOPE 35 ЛИ**

**Sofia, 30.10.2024**

**STATE AGENCY FOR METROLOGICAL AND TECHNICAL SURVEILLANCE
TESTING LABORATORY FOR LIQUID FUELS, LUBRICANTS AND ADDITIVES
IN DIRECTORATE GENERAL QUALITY CONTROL OF LIQUID FUELS**

**Management address:** 1797 Sofia, 52A G. M. Dimitrov Blvd.

**Laboratory addresses:**  I. Sector Stationary Laboratory – Sofia:

Office 1 - 1784 Sofia, Mladost 1, R. A. Poligona, 2 Prof. Petar Mutafchiev Str;

Office 2 – 1797 Sofia, 52B G. M. Dimitrov Blvd.

II. Sector Mobile laboratory – Pleven: 5800 Pleven, 27 Doyran Str. and automobile Opel Movano, reg. № CA 2529 BC;

III. Sector Mobile laboratory – Burgas: 8010 Burgas, Slavejkov, 25 Prof. Yakimov Str. and automobile Opel Movano, reg. № CA 2253 BC.

I. Sector Stationary Laboratory – Sofia: Office 1 - 1784 Sofia, Mladost 1, R. A. Poligona, 2 Prof. Petar Mutafchiev Str.

**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. | Automobile fuels. Unleaded gasoline. | 1.1 Lead content | БДС EN 237 |
| 1.2 Distillation characteristics | БДС EN ISO 3405 |
| 1.3 Sulfur content | БДС EN ISO 20846БДС EN ISO 20884БДС EN ISO 8754 |
| 1.4 Benzene content | БДС EN 238+A1БДС EN 12177БДС EN ISO 22854 |
| 1.5 Oxidation stability | БДС EN ISO 7536 |
| 1.6 Density at 15 °C | БДС EN ISO 3675БДС EN ISO 12185 |
| 1.7 Vapour pressure | БДС EN 13016-1 |
| 1.8 Copper strip corrosion | БДС EN ISO 2160 |
| 1.9 Content of hydrocarbon groups (alkenes, arenes) | БДС EN 15553БДС EN ISO 22854 |
| 1.10 Oxygen content and oxygen­containing compounds: methanol, ethanol, isobutyl and isopropyl alcohol, tert butyl alcohol, ethers with five or more hydrocarbon atoms, ethyl tert butyl ether, ETBE, methyl tert-butyl ether, MTBE, other oxygen-containing | БДС EN 13132БДС EN ISO 22854 |
| 1.11 Volatility index | БДС EN 228+A1, cl.5.5.2 |
| 1.12 Manganese content | БДС EN 16135 |
| 2. | Automobile fuels. Diesel.Fuel for off-road equipment and tractors. | 2.1 Density at 15 °C | БДС EN ISO 3675БДС EN ISO 12185 |
| 2.2 Distillation characteristics | БДС EN ISO 3405 |
| 2.3 Cetane index | БДС EN ISO 4264 |
| 2.4 Copper strip corrosion | БДС EN ISO 2160 |
| 2.5 Water content | БДС EN ISO 12937 |
| 2.6 Ash content | БДС EN ISO 6245 |
| 2.7 Kinematic viscosity | БДС EN ISO 3104 |
| 2.8 Sulfur content | БДС EN ISO 20846БДС EN ISO 8754БДС EN ISO 20884 |
| 2.9 Flash point closed cup | БДС EN ISO 2719БДС EN ISO 2719/А1 |
| 2.10 Cold filter plugging point | БДС EN 116БДС EN 116/ Amd. 1 |
| 2.11 Carbon Residue (on 10 % distillation residue) | БДС EN ISO 10370 |
| 2.12 Polycyclic Aromatic Hydrocarbons (arenes) | БДС EN 12916 |
| 2.13 Fatty acid methyl esters (FAME) content | БДС ЕN 14078 |
| 2.14 Total contamination | БДС ЕN 12662 -1  |
| 2.15 Manganese content | БДС EN 16576 |
| 3. | Gas oil for industrial and communal purposes. | 3.1 Density at 15 °C | БДС EN ISO 3675БДС EN ISO 12185 |
| 3.2 Distillation characteristics (Fractional composition) | БДС EN ISO 3405 |
| Kinematic viscosity | БДС EN ISO 3104 |
| 3.3 Flash point closed cup | БДС EN ISO 2719БДС EN ISO 2719/А1 |
| 3.4 Freezing point | БДС 1751 |
| 3.5 Sulfur | БДС EN ISO 8754БДС EN ISO 20884 |
| 3.6 Water | БДС ISO 3733 |
| 3.7 Carbon residue | БДС ISO 6615 |
| 3.8 Ash | БДС EN ISO 6245 |
| 3.9 Specific heat of combustion | БДС 17413 |
| 4. | Marine fuels | 4.1 Density at 15 °C | БДС EN ISO 3675 |
| 4.2 Kinematic viscosity | БДС EN ISO 3104 |
| 4.3 Carbon residue (on 10 % distillation residue) | БДС EN ISO 10370 |
| 4.4 Sulfur | БДС EN ISO 8754БДС EN ISO 20884 |
| 4.5 Water | БДС ISO 3733 |
| 4.6 Flash point closed cup | БДС EN ISO 2719БДС EN ISO 2719/А1 |
| 4.7 Ash | БДС EN ISO 6245 |
| 5. | Boiler fuel | 5.1 Engler conditional viscosity | БДС 1766 |
| 5.2 Sulfur | БДС EN ISO 8754 |
| 5.3 Water and sediment | БДС ISO 3734 |
| 5.4 Density | БДС EN ISO 3675 |
| 5.5 Freezing point | БДС 1751 |
| 5.6 Flash point open cup | БДС EN ISO 2592 |
| 5.7 Water-soluble acids and bases | БДС 5252 |
| 5.8 Ash | БДС EN ISO 6245 |
| 5.9 Specific heat of combustion | БДС 17413 |
| 6. | Heavy fuel oil | 6.1 Sulfur | БДС EN ISO 8754 |
| 6.2 Flash point open cup | БДС EN ISO 2592 |
| 6.3 Distillation characteristics | БДС EN ISO 3405 |
| 6.4 Ash | БДС EN ISO 6245 |
| 6.5 Water and sediment | БДС ISO 3734 |
| 6.6 Specific heat of combustion | БДС 17413 |
| 7. | Biodiesel, fatty acid methyl esters (FAME) and biodiesel for heating. | 7.1 Density at 15 °C | БДС EN ISO 3675БДС EN ISO 12185 |
| 7.2 Kinematic viscosity | БДС EN ISO 3104 |
| 7.3 Copper strip corrosion | БДС EN ISO 2160 |
| 7.4 Sulfur content | БДС EN ISO 20846БДС EN ISO 20884 |
| 7.5 Water content | БДС EN ISO 12937 |
| 7.6 Iodine value | БДС EN 14111 |
| 7.7 Cold filter plugging point | БДС EN 116БДС EN 116/ Amd. 1 |
| 7.8 Esters content | БДС EN 14103 |
| 7.9 Monoglycerides content | БДС EN 14105 |
| 7.10 Diglycerides content | БДС EN 14105 |
| 7.11 Triglycerides content | БДС EN 14105 |
| 7.12 Free glycerol | БДС EN 14105 |
| 7.13 Total glycerol | БДС EN 14105 |
| 7.14 Phosphorus content | БДС EN 14107 |
| 7.15 Methyl ester of linoleic acid content | БДС EN 14103 |
| 7.16 Methanol content | БДС EN 14110 |
| 7.17 Oxidation stability, 110°C | БДС EN 14112БДС EN 15751 |
| 7.18 Flash point | БДС EN ISO 3679 |
| 7.19 Sulfate ash content | БДС ISO 3987 |
| 7.20 Total contamination | БДС ЕN 12662 -2 |

I. Sector Stationary Laboratory – Sofia, Office 2: 1797 Sofia, 52B G. M. Dimitrov Blvd.

**To perform testing of:**

| **Type of the scope:** *flexible for a part of the scope* |
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| **№** | **Tested Products** | **Type of Test/Characteristic** | **Testing methods****(standard/ validated method)** |
| 1 | 2 | 3 | 4 |
| 1. | Automobile fuels.Unleaded gasoline. | 1.1 Octane number | БДС EN ISO 5164 |
| 2. | Automobile fuels. Diesel. | 2.1 Cetane number | БДС EN ISO 5165 |

II. Sector Mobile laboratory – Pleven: 5800 Pleven, 27 Doyran Str. and automobile Opel Movano, reg. № CA 2529 BC

**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. | Automobile fuels.Unleaded gasoline. | 1.1 Distillation characteristics | ASTM D7345БДС EN ISO 3405 |
| 1.2 Sulfur content | БДС EN ISO 20884 |
| 1.3 Density at 15 °C | БДС EN ISO 12185 |
| 1.4 Vapour pressure | БДС EN 13016-1 |
| 1.5 Oxygen content and oxygen-containing compounds: - oxygen content- methanol, ethanol, tert butyl alcohol, ethers with five or more hydrocarbon atoms, ethyl tert butyl ether, ETBE, methyl tert-butyl ether, MTBE | ASTM D5845 |
| 1.6 Benzene content | ASTM D6277 |
| 2. | Automobile fuels. Diesel. | 2.1 Density at 15 °C | БДС EN ISO 12185 |
| 2.2 Distillation characteristics | ASTM D7345БДС EN ISO 3405 |
| 2.3 Sulfur content | БДС EN ISO 20884 |
| 2.4 Flash point closed cup | БДС EN ISO 2719БДС EN ISO 2719/А1 |
| 2.5 Cold filter plugging point | БДС EN 116БДС EN 116/ Amd. 1 |
| 2.6 Cetane number | МИ 4/07:2007 |
| 2.7 Fatty acid methyl esters (FAME) content | БДС EN 14078, (Scope B)ASTM D7861 |

III. Sector Mobile laboratory – Burgas: 8010 Burgas, Slavejkov, 25 Prof. Yakimov Str. and automobile Opel Movano, reg. № CA 2253 BC

**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. | Automobile fuels.Unleaded gasoline. | 1.1 Distillation characteristics | ASTM D7345БДС EN ISO 3405 |
| 1.2 Sulfur content | ASTM D7212*\*\**БДС EN ISO 20884 |
| 1.3 Density at 15 °C | БДС EN ISO 12185 |
| 1.4 Vapour pressure | БДС EN 13016 -1 |
| 1.5 Oxygen content and oxygen-containing compounds: - oxygen content- methanol, ethanol, tert butyl alcohol, ethers with five or more hydrocarbon atoms, ethyl tert butyl ether, ETBE, methyl tert-butyl ether, MTBE | ASTM D5845 |
| 1.6 Benzene content | ASTM D6277 |
| 2. | Automobile fuels. Diesel. | 2.1 Density at 15 °C | БДС EN ISO 12185 |
| 2.2 Distillation characteristics | ASTM D7345БДС EN ISO 3405 |
| 2.3 Sulfur content | ASTM D7212*\*\**БДС EN ISO 20884 |
| 2.4 Flash point closed cup | БДС EN ISO 2719БДС EN ISO 2719/А1 |
| 2.5 Cold filter plugging point | БДС EN 116БДС EN 116/ Amd. 1 |
| 2.6 Cetane number | МИ 4/07:2007 |
| 2.7 Fatty acid methyl esters (FAME) content | БДС EN 14078, (Scope B)ASTM D7861 |

***\*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 laboratory.*

*\*\* Repealed but not replaced standard.*

**Fixed scope referеnces:**

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| МИ 4/07:2007 | Method for determination of cetane number by infrared spectroscopy (IRS) of diesel. |