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COMMERCIAL ITEM
DESCRIPTION

TESTER, FLASH POINT, ELECTRIC AND GAS IGNITION ASTM D93 METHOD A and B

The General Services Administration has authorized the use of this commercial item description, for all federal agencies.

1.0 SCOPE.

1.1 Description. This Commercial Item Description (CID), describes Tester, Flash Point Closed Cup, ASTM D93 Method A and B with electric and gas ignition. The flash point tester is used to measure and describe the properties of materials, products, or assemblies in response to heat and flame under controlled laboratory conditions.

1.2 ASTM D93 Method A and B. These test methods cover the determination of the flash point of petroleum products in the temperature range from 40ºC to 370°C by a manual Pensky-Martens closed-cup apparatus or an automated Pensky-Martens closed-cup apparatus, and the determination of the flash point of biodiesel in the temperature range of 60ºC to 190°C by an automated Pensky-Martens closed cup apparatus.

2.0 SALIENT CHARACTERISTICS

2.1 Equipment. The complete countertop instrument shall be capable of automatically determining the flash point of volatile materials in accordance with ASTM D93 Method A and B. The instrument is designed to increase the laboratory's productivity, repeatability and reproducibility. Test results include adjustments to compensate for barometric pressure differences. The characteristics described in this section are the minimum requirements necessary for this tester.

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data that may improve this document should be sent to: WR-ALC 404 SCMS/GUEEA, 235 Byron Street, Suite 19A, Robins AFB, GA 31098-1670. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at https://assist.dla.mil/ .

AMSC N/A FSC 6630

Distribution Statement A. Approved for public release; distribution is unlimited.

2.2 Standard Test Method. The flash point tester shall automatically perform in accordance with ASTM D93 Method A and B.

2.2.1 Method/Procedure A. Method A is applicable to distillate fuels (diesel, kerosene, heating oil, and turbine fuels), new lubricating oils, and other homogeneous petroleum liquids not included in the scope of Procedure B.

2.2.2 Method/Procedure B. Method B is applicable to residual fuel oils, cutback residuals, used lubricating oils, mixtures of petroleum liquids with solids, petroleum liquids that tend to form a surface film under test conditions or are petroleum liquids of such kinematic viscosity that they are not uniformly heated under the stirring an heating conditions of Procedure A.

2.3 Sample Flash Point Temperature Measurement Range. The sample temperature flash point measurement range of the petroleum products shall be from +40º C to +370º C (+104º F to +698º F). Ambient temperature is +20º C (68º F).

2.4 Apparatus. The apparatus of the closed cup flash point tester shall conform to the specifications outlined in ASTM D93 Annex A1. The apparatus shall consist of at minimum a test cup, test cover and shutter, stirring device, heating source, and ignition source device.

2.4.1 Test Cup. The test cup shall be manufactured of brass or other non-rusting metal of equivalent heat conductivity and shall conform to the dimensions specified in ASTM D93 ASTM D93 Annex A1, figure A1.2.

2.4.2 Test Cover and Shutter. The test cover and shutter shall be manufactured using the same material as the test cup and shall conform to the specifications as outlined in ASTM D93, Annex A1, paragraph A1.1.2. The shutter shall conform to the specifications as outlined in ASTM D93, Annex A1, paragraph A1.1.2.2. The cup cover shall be detachable for easy cleaning.

2.4.3 Stirring Device. The stirring device shall conform to the specifications as outlined in ASTM D93 Annex A1, paragraph A1.1.2.5. The tester shall be capable of both automatically determining (preprogrammed) and user defining the stirring rate of the sample under test.

2.4.4 Heating Source. The heating source shall conform to the specifications as outlined in ASTM D93 Annex A1, paragraph A1.1.2.8 and A1.1.2.9. The tester shall be capable of both automatically (preprogrammed) and user defining the heating rate of the sample under test.

2.4.5 Ignition Source Device. The tester shall allow the user the option to select between electric or gas ignition. The ignition source device shall conform to the specifications outlined in ASTM D93, Annex A1, and paragraph A1.1.2.3.

2.4.6 Other Related ASTM requirements. ASTM D93 Annex A1, paragraphs A1.1.2.6, A1.1.2.7, and A1.1.2.10 also apply to the requirements of this tester.

2.5 Barometric Pressure Detector. The closed cup flash point tester shall be supplied with a built-in barometer that automatically corrects results to standard pressure.

2.6 Thermal Detection. The tester shall have thermal flash detection capabilities. Some testers perform both thermal and ionization flash detection. However, thermal detection can perform with all samples. Thermal is the standard for flash detection which is compatible with water or silicon contained samples. Ionization flash detection is optional.

2.7 Forced Air Cooling. The tester shall have built-in forced air cooling.

2.8 Calibration. The closed up flash point tester shall have the intrinsic function of automatic calibration and shall include the applicable hardware to accomplish this by the user.

2.9 Safety Features. The tester shall have these safety features which includes (but not limited to): automatic suppression of the gas source at the end of the test and detection of extinction of the gas flame during the test if gas ignition is used, over-heating detection with auto shut-off of heater, automatic fire detection system with external fire alarm connection.

NOTE: Some manufacturers include the automatic fire detection system with tester. Other manufacturers have this fire detection safety feature as an option which must be specified at time of order.

2.10 Display. The tester shall be supplied with a LCD monochrome display or equivalent. The display shall be visible from a distance of 5 meters.

2.11 Keyboard. The tester shall be designed with an alphanumeric keyboard/keypad incorporated with the display which will allow the users to input data to the tester.

2.12 Test Procedures. The closed cup flash point tester shall have the capabilities of automatic preprogrammed and user defined (minimum 15) methods.

2.13 Data Storage. The tester shall be capable of storing a minimum or 300 test results, transfer data to a LIMS or other data storage device via a RS 232C cable, and print a copy of the test results when a printer is attached. In the event that the tester is connected to a computer to transfer data/results, all Information Assurance policies and procedures must be followed.

2.14 Printer. Printer shall be available from the tester manufacturer which must be easily attached and configured without access to government computer networks in order to print test results.

2.15 Tester Size. The size of the tester shall be approximately 23 in. (58 cm) L x 16 in. (40 cm) W x 24 in. (60 cm) H.

2.16 Tester Weight. The weight of the tester shall be approximately 55 lb. (24 kg).

2.17 Power Requirements. The power requirements for testers that are used in laboratories within the United States shall be specified by the end user. If the solicitation indicates destination(s) outside the United States, then the offered item(s) may have to be altered to adapt to the proper power requirements and electric plugs for the destinations indicated. The proposed suppliers shall have the resources available to provide the proper power requirements for the destination indicated. The testers shall be provided with the ability, through standard configuration or through available accessories, to

use standard 115V outlets as well as 220V.

3.0 REGULATORY REQUIREMENTS. The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR).

4.0 QUALITY ASSURANCE PROVISIONS

4.1 Product Conformance: The products provided shall conform to the producer's own drawings, specifications, standards, and quality assurance practices and be the same product offered for sale in the commercial market. The government reserves the right to require proof of such conformance. Minor changes to the commercial product, with respect to ruggedizing and environmental suitability and protection shall be permitted, subject to the approval of the procurement office, to satisfy the requirements of this requirement.

4.2 Installation and Demonstration: If required by the end user, the contractor shall be responsible for user installation and orientation of the equipment at the designated Air Force facility laboratory and assure that the equipment is ready for use.

4.3 Alternative offers: A current, complete instrument with all items required for use, shall be offered/provided. If an alternative/replacement item is offered, descriptive literature (commercial catalogs, specification sheets, etc.) shall be submitted with the quote, for review and evaluation by the cognizant engineer.

4.4 Serviceability, Reliability, and Quality of Materials: All supplied items shall carry a standard commercial warranty on parts and labor.

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5.4 Serviceability, Reliability, and Quality of Materials: One copy of the commercial operation and

maintenance manual(s) shall be shipped with the equipment. One additional copy of the operation and maintenance manual shall be shipped to the cognizant engineer at no additional cost to the government. The address for the cognizant engineer is WR-ALC 404 SCMS/GUEEA, 235 Byron Street Suite 19A, Robins AFB, GA 31098-1670.

6.0 PACKAGING. Preservation, packing, and marking shall be in accordance with the contract or order.

7.0 NOTES

7.1 Source of Documents

7.1.1 The Code of Federal Regulations (CFR) may be obtained at http://www.gpoaccess.gov/cfr/ or from the Superintendent of Documents, U.S. Government Printing Office, Washington DC 20402.

7.1.2 ASTM documents may be obtained at at www.astm.org or from ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken PA 19428-2959.

7.2 Key Words.

Biodiesel
Closed cup apparatus
Petroleum products

Custodians:
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