

GENERAL TEST EQUIPMENT

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Aniline Point and Mixed Aniline Point of Petroleum Products



K10200 Automatic Aniline Point Apparatus

Aniline Point and Mixed Aniline Point of Petroleum Products and Hydrocarbon Solvents

Test Method

Aniline point is used to characterize pure hydrocarbons and to indicate the aromatic content of hydrocarbon mixtures. Equal volumes of aniline and sample or sample plus *n*-heptane are stirred together while being heated at a controlled rate. After the two phases become miscible, the mixture is cooled at a controlled rate and the temperature at which the two phases separate is the aniline point or mixed aniline point of the sample.

Automatic Aniline Point Apparatus with New Automated Sampling System

- Conforms to ASTM D611 and related specifications
- For samples ranging from clear to very dark
- Temperature range 0°C to 150°C (32°F to 302°F)
- Digital temperature display

Performs aniline point and mixed aniline point determinations automatically by means of a modified thin film technique (ASTM D611 Method E). The sample-aniline mixture is directly heated by a platinum immersion heater and the aniline point is detected photoelectrically. Temperature is displayed on a large LED indicator. Built-in pressure regulator and solenoid valve permit the use of cooling air for quicker cooling cycles or to determine subambient aniline point temperatures. Aniline points as low as 0°C (32°F) can be determined with the use of refrigerated cooling air. Equipped with variable controls for heater, light source and stirrer speed. Cabinet exterior surfaces have a chemical resistant polyurethane enamel finish.

Automated Sampling System – Provides hands-free operation for aniline point determinations, preventing operator contact with the aniline, *n*-heptane, and test samples. Automatically adds exact volumes of the test components to the mixing chamber, followed by transfer of the test mixture to a waste container and rinsing of the mixing chamber with solvent at the completion of the test. *Retrofit automated sampling system is available for existing aniline point systems. Please contact your Koehler representative for additional information.*

Specifications

Conforms to the specifications of:
 ASTM D611; IP 2; ISO 2977; DIN 51775; FTM 791-3601; NF M 07-021
 Testing Range: 0 to 150°C (32 to 302°F)
 Temperature Display: 0-999.9°C
 Electrical Requirements:
 115V 50/60Hz, Single Phase, 0.4A
 220-240V 50/60Hz, Single Phase, 0.2A

Included Accessories

Standard Pyrex™ Test Cell with drain

Dimensions l x w x h, in. (cm)

14½ x 8½ x 20¾ (37 x 22 x 53)
 Net Weight: 32½ lbs (14.7kg)

Shipping Information

Shipping Weight: 46 lbs (21kg)
 Dimensions: 8.2 Cu. ft.

For NIST traceable certified thermometers, please refer to the ASTM Thermometer section on pages 184 through 191.

Ordering Information

| Catalog No. | | Order Qty |
|--|---|-----------|
| Automatic Aniline Point Apparatus | | |
| K10200 | Automatic Aniline Point Apparatus, 115V 50/60Hz | 1 |
| K10290 | Automatic Aniline Point Apparatus, 220-240V 50/60Hz | |
| Automatic Sampling System | | |
| K10280 | Automatic Sampling System, 115V/220-240V 50/60Hz <i>Factory installed on K10200 and K10290 Automatic Aniline Point Apparatus or shipped separately as a retrofit for existing units.</i> | 1 |
| Accessories | | |
| 250-000-33F | ASTM 33F Thermometer Range: -36.5 to +107.5°F | 1 |
| 250-000-33C | ASTM 33C Thermometer Range: -38 to +42°C | |
| 250-000-34F | ASTM 34F Thermometer Range: 77 to 221°F | 1 |
| 250-000-34C | ASTM 34C Thermometer Range: 25 to 105°C | |
| 250-000-35F | ASTM 35F Thermometer Range: 194 to 338°F | 1 |
| 250-000-35C | ASTM 35C Thermometer Range: 90 to 170°C | |
| K10210 | Pyrex™ Test Cell with drain | |
| K10220 | Heating-Cooling Tube with platinum element | |

Aniline Point and Mixed Aniline Point of Petroleum Products

Thin Film Aniline Point Apparatus

- Conforms to ASTM D611 and related specifications

For aniline point and mixed aniline point determinations according to Method B. Stirs aniline-sample mixture in a borosilicate glass thin film tube suspended in a heating bath. Thin film of mixture flows over a light well illuminated by a variable 6V lamp. Adjust heating rate per specifications using accessory Powertrol Heater. When lamp filament brightens inside well, allow mixture to cool until the two phases separate as indicated by obscuring of the lamp filament. Consists of thin film tube; 400mL Pyrex™ beaker; cover assembly with bath stirrer; sample pump rotor and cooling coil; 6V lamp with line cord; and drive motor. Positive drive pulley system rotates sample and bath stirrers. Accessory Powertrol Heater has variable stepless control and a reference dial for repeatable control of heating rate. Porcelain refractory top plate shields 750W heater and has a positioning well for the Pyrex™ bath. Low voltage receptacle in heater housing accepts line cord of 6V lamp.

Specifications

Conforms to the specifications of: ASTM D611; IP 2; ISO 2977;
DIN 51775; FTM 791-3601; NF M 07-021

Bath Medium: 400mL of heat transfer fluid
(355-000-001 mineral oil is suitable for this application)

Electrical Requirements:

115V 50/60Hz, Single Phase, 6.5A

220-240 V 50/60Hz, Single Phase, 13.4A

Included Accessories

Thermometer Ferrules (2)
Clamps and Support Rod

Dimensions l x w x h, in. (cm)

14½ x 18½ x 20¾ (37 x 22 x 53)

Net Weight: 24 lbs (10.9kg)

Shipping Information

Shipping Weight: 42 lbs (19.1kg)

Dimensions: 5.7 Cu. ft.



K10190 Thin Film Aniline Point Apparatus

Ordering Information

| Catalog No. | Description | Order Qty |
|-------------|---|-----------|
| K10190 | Thin Film Aniline Point Apparatus, 115V 50/60Hz | 1 |
| K10191 | Thin Film Aniline Point Apparatus, 220-240V 50/60Hz | 1 |
| K10020 | Powertrol Heater, 115V 50/60Hz | 1 |
| K10029 | Powertrol Heater, 220-240V 50/60Hz | 1 |

Accessories

| | | |
|-------------|--|---|
| 250-000-33F | ASTM 33F Thermometer Range: -36.5 to +107.5°F | 2 |
| 250-000-33C | ASTM 33C Thermometer Range: -38 to +42°C | 2 |
| 250-000-34F | ASTM 34F Thermometer Range: 77 to 221°F | 2 |
| 250-000-34C | ASTM 34C Thermometer Range: 25 to 105°C | 2 |
| 250-000-35F | ASTM 35F Thermometer Range: 194 to 338°F | 2 |
| 250-000-35C | ASTM 35C Thermometer Range: 90 to 170°C | 2 |

For NIST traceable certified thermometers, please refer to the ASTM Thermometer section on pages 184 through 191.

U-Tube Aniline Point Apparatus

- Developed by Standard Inspection Laboratories

Similar to the Thin Film Aniline Point Apparatus but with 'U-Tube' aniline-sample tube and stirrer as developed by Standard Inspection Laboratories. Suitable for samples having 6.5 or lighter ASTM D1500 color. As illustrated in IP2-56, Method D. Consists of U-tube; 400mL Pyrex™ beaker; cover assembly with bath stirrer; sample stirrer and cooling coil; 6V lamp with line cord; and drive motor. Thermometer ferrules and mounting hardware are included. Accessory Powertrol Heater provides variable stepless control of heating rate and 6V tap for lamp.

Ordering Information

| Catalog No. | Description | Order Qty |
|-------------|--|-----------|
| K10090 | U-Tube Aniline Point Apparatus, 115V 50/60Hz | 1 |
| K10091 | U-Tube Aniline Point Apparatus, 220-240V 50/60Hz | 1 |
| K10020 | Powertrol Heater, 115V 50/60Hz | 1 |
| K10029 | Powertrol Heater, 220-240V 50/60Hz | 1 |

Saybolt Color of Petroleum Products



K13009 Saybolt Chromometer

Specifications

Conforms to the specifications of:

ASTM D156; DIN 51411; FTM 791-101; NF M 07-003

Included Accessories

Whole Color Standards (3)
Half Color Standard (1)
Engraved Conversion Chart

Dimensions l x w x h, in. (cm)

5½ x 5½ x 26½ (14 x 14 x 67)
Net Weight: 15½ lbs (7kg)

Shipping Information

Shipping Weight: 31 lbs (14.1kg)
Dimensions: 4.0 Cu. ft.
Includes accessory lamp

Test Method

The Saybolt Color test is used for quality control and product identification purposes on refined products having an ASTM Color of 0.5 or less. Products in this range include undyed motor and aviation gasolines, jet propulsion fuels, naphthas, kerosene and petroleum waxes. Color is an important quality characteristic for many products, and can also be used to detect product contamination. The Saybolt Chromometer measures color by comparing a column of sample against standard color discs. The Saybolt Wax Chromometer measures color of non-fluid waxes by heating the samples during the test.

Saybolt and Saybolt Wax Chromometers

- Conforms to ASTM D156 and related specifications
- Three-position color standard turret
- Tests non-fluid waxes and liquid petroleum products

Determines Saybolt Color of highly refined petroleum products. Consists of a matched set of sample and standard tube assemblies with optical viewer. Compares a sample of the product to be tested against standard color discs under a uniform light source. Reduce column height until the sample field is lighter than the color standard and convert height to Saybolt Color using chart on instrument. Three-position turret on standard tube permits convenient changing of color disc combinations. Accessory Daylight Lamp (Cat. No. K13010) provides standard light source per ASTM specifications.

For petroleum waxes, the Saybolt Wax Chromometer is equipped with heaters to keep waxes that are not fluid at ambient temperature molten during testing. Sample tube has a 200W chrome steel strip heater and a hinged cover to maintain even heat distribution. An aluminum block heater with 50W cartridge element keeps wax molten in the draincock assembly. Accessory variable transformer may be used to regulate the sample temperature. Optical viewer and stand are fully insulated from the heaters. Sample tube assembly has heat resistant fiber handles.

Ordering Information

Catalog No.

| | |
|--------|---|
| K13009 | Saybolt Chromometer |
| K13100 | Saybolt Wax Chromometer, 115V 50/60Hz |
| K13190 | Saybolt Wax Chromometer, 220-240V 50/60Hz |

Accessories

| | |
|-------------|--|
| K13010 | Daylight Lamp Meets ASTM D156 and related test specifications for illumination of Saybolt Chromometers. Adjustable for correct positioning. Standard 60W bulb not included. |
| K13020 | Whole Color Standard |
| K13029 | Half Color Standard |
| K13032 | Matched Set of Tubes with Turret and Draincock Assembly for K13009 Saybolt Chromometer |
| K13033 | Matched Set of Tubes with Turret and Draincock Assembly for K13100/K13190 Saybolt Wax Chromometer |
| 279-115-005 | Frosted Bulb, 60W, 115V |
| 279-230-002 | Frosted Bulb, 60W, 220-240V |
| 280-115-005 | Variable Transformer, 115V Regulates heaters of Saybolt Wax Chromometer. |
| 280-230-003 | Variable Transformer, 220-240V |

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