Vapor Pressure of Petroleum Products (Reid Method) and Liquefied Petroleum Gases (LPG Method)

Test Method
Vapor pressure is a critical factor in the handling and performance of liquid petroleum and liquefied petroleum gas (LPG) products. The vapor pressure of automotive gasolines is subject to governmental regulation for pollution control purposes.

Reid Vapor Pressure Cylinders
- Conform to ASTM D323, D1267 and related specifications
- One-opening and two-opening types

Polished stainless steel test cylinders for vapor pressure tests of liquid petroleum products, volatile crude oil and liquefied petroleum gas (LPG). Consists of upper chamber and lower chamber in required 4:1 volume ratio. O-ring gaskets provide tight seal between chambers and at gauge coupling. One-opening type is for gasoline and other products having a Reid Vapor Pressure below 26psi (180kPa). Two-opening type is for liquid products having a Reid Vapor Pressure above 26psi (ASTM D323) and for LPG (ASTM D1267). Lower chamber of two-opening apparatus includes straight-through ball valve and ¼” needle valve. For LPG testing, order two-opening type apparatus and accessory bleeder valve assembly.

Specifications:
Conforms to the specifications of: ASTM D323, D1267; GPA 2140; IP 69, 161; ISO 3007, 4256; DIN 51616, 51754; FTM 791-1201

Hydrostatic Test (two-opening type): Withstands 1000psi (6894kPa) gauge hydrostatic pressure per ASTM D1267 specifications

Included Accessories
Threaded ¼” Gauge Coupling
O-ring Seals (2)

Shipping Information
Shipping Weight: 7 lbs (3.2kg)

Reid Vapor Pressure Gauges
- Conforming to ASTM D323, D1267 and related specifications
- Dual psi/kPa scale on a 4½” diameter dial
- Accurate to within 0.5% of scale range
- Micrometer adjustable pointer

Ruggedly constructed Bourdon type gauge designed especially for the Reid Vapor Pressure test. Heavy duty rotary brushed stainless steel movement. Lightweight aluminum case with corrosion-resistant finish and heavy duty brass non-sparking handle. Includes blow-out disc and ¼” NPT male thread connection.

Ordering Information

<table>
<thead>
<tr>
<th>Catalog No.</th>
<th>Description</th>
<th>Range psi/kPa</th>
<th>Figure Interval psi/kPa</th>
<th>Interval Graduations psi/kPa</th>
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<td>0-5/35</td>
<td>0.5/5</td>
<td>0.05/0.2</td>
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<tr>
<td>311-015-002</td>
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<td>1.0/10</td>
<td>0.1/1.0</td>
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<tr>
<td>311-030-002</td>
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<td>5.0/20</td>
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<td>311-100-002</td>
<td>0-100/700</td>
<td>10/50</td>
<td>0.5/2.5</td>
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<td>311-250-001</td>
<td>0-250/1750</td>
<td>25/100</td>
<td>1.0/20</td>
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<td>311-600-003</td>
<td>0-600/4200</td>
<td>50/250</td>
<td>2.0/25</td>
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</table>
Wireless Reid Vapor Pressure Data Acquisition System

Windows®-based electronic pressure measurement software designed for ASTM Reid Vapor Pressure test methods. Monitors up to eight pressure vessel channels, graphing pressure and RVP data in real-time for each channel. Each channel can be run independently and configured for the pressure ranges of 0-50, 0-200, and 0-1000 psi. Pressure values can be reported in psi or kPa. Software automatically exports results into Microsoft® Excel for data analysis and storage.

**Specifications**

Conforms to the specifications of:
- ASTM D323, D1267; GPA 2140; IP 69, 161; ISO 3007, 4256; DIN 51616, 51754; FTM 791-1201

- Testing Capacity: 1 to 8 vapor pressure apparatus, one- or two-opening type
- Temperature Control Stability: ±0.2°F (±0.1°C)
- Maximum Temperature: 212°F (100°C)
- Bath Medium: 13.7 gal (51.9L) water
- Electrical Requirements: 115V 60Hz, Single Phase, 18.8A
  - 220-240V 50/60Hz, Single Phase, 9.4A

**Dimensions** lwxh, in.(cm)

- 15x15x36 (38.1x38.1x91.5)
- Net Weight: 67 lbs (30.4kg)

**Shipping Information**

- Shipping Weight: 105 lbs (47.7kg)
- Dimensions: 14 Cu. ft.

**Ordering Information**

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<th>Catalog No.</th>
<th>Order Qty</th>
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<tr>
<td>K11401</td>
<td>RVP Data Acquisition System, 115V 60Hz</td>
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<tr>
<td>K11491</td>
<td>RVP Data Acquisition System, 230V 50/60 Hz</td>
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<table>
<thead>
<tr>
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<th>Description</th>
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<tbody>
<tr>
<td>K11404-50</td>
<td>RVP Pressure Transducer, 0-50 psi</td>
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<tr>
<td>K11404-200</td>
<td>RVP Pressure Transducer, 0-200 psi</td>
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<tr>
<td>K11404-1000</td>
<td>RVP Pressure Transducer, 0-1000 psi</td>
</tr>
</tbody>
</table>

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21-Unit Reid Vapor Pressure Bath

- Conforms to ASTM D323, 1267 and related specifications
- Digital electronic temperature control
- Automatic water level control maintains proper immersion depth

Constant temperature water bath immerses twenty-one test cylinders for vapor pressure tests on liquid products and liquefied petroleum gas (LPG). Electronic level control automatically maintains the proper immersion depth per ASTM specifications. Heating system employs a 6kW stainless steel heat exchanger with a heavy duty circulating pump to provide rapid heat-up, even heat distribution and ease of servicing. Convenient digital setpoint and display permits rapid selection of any bath liquid temperature within the operating range. A built-in overtemperature limit control protects against accidental overheating. Bath interior and internal components are constructed of heavy gauge stainless steel. Control panel is shielded by a hinged acrylic cover.

**Specifications**

Conforms to the specifications of: ASTM D323, D1267; GPA 2140; IP 69, 161; ISO 3007, 4256; DIN 51616, 51754; FTM 791-1201

- Capacity: 21 vapor pressure apparatus, one- or two-opening type
- Temperature Control Stability: ±0.2°F (±0.1°C)
- Maximum Temperature: 212°F (100°C)
- Bath Medium: 58 gal (219.5L) water
- Electrical Requirements:
  - 220-240V 50Hz, Single Phase, 28A
  - 220-240V 60Hz, Single Phase, 28A

**Dimensions** lwxh, in.(cm)

- Overall: 48x22x36 (122x56x91)

**Ordering Information**

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<tr>
<td>K11416</td>
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</tbody>
</table>

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4 Unit Reid Vapor Pressure Bath

- Conforms to ASTM D323, D1267 and related specifications
- Free standing or flush-mount benchtop installation
- Microprocessor programmable high accuracy temperature control

Constant temperature water baths designed for Reid Vapor Pressure determinations of liquid petroleum products and liquefied petroleum gases (LPG). Immerses vapor pressure apparatus at the proper depth per ASTM specifications. Controls bath temperature with ±0.2°F (±0.1°C) precision. Microprocessor PID control provides quick temperature stabilization without overshoot, and the bath is protected by an overtemperature control circuit that interrupts power should bath temperature exceed a programmed cut-off point. Dual LED displays provide actual and setpoint temperature values in °C/°F format. Double-wall construction with fiberglass insulated stainless steel tank. A sturdy 1" (25mm) flange permits flush-mount benchtop installation for easy access to the bath interior. Built-in holders suspend test cylinders at the required depth. Equipped with overflow stand pipe/drain.

**Specifications**

Conforms to the specifications of:
- ASTM D323, D1267; GPA 2140; IP 69, 161; ISO 3007, 4256; DIN 51616, 51754; FTM 791-1201

- Capacity: 1 to 4 vapor pressure apparatus, one- or two-opening type
- Temperature Control Stability: ±0.2°F (±0.1°C)
- Maximum Temperature: 212°F (100°C)
- Bath Medium: 13.7 gal (51.9L) water
- Electrical Requirements:
  - 115V 60Hz, Single Phase, 18.8A
  - 220-240V 50/60Hz, Single Phase, 9.4A

**Dimensions** lwxh, in.(cm)

- 15x15x36 (38.1x38.1x91.5)
- Net Weight: 67 lbs (30.4kg)

**Shipping Information**

- Shipping Weight: 105 lbs (47.7kg)
- Dimensions: 14 Cu. ft.

**Ordering Information**

<table>
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<td>K11459</td>
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Order pressure gauges and cylinders separately.
### Ordering Information

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<th>Catalog No.</th>
<th>Description</th>
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<tr>
<td>250-000-18F</td>
<td>ASTM 18F Thermometer, Range: 94 to 108°F</td>
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<tr>
<td>250-000-18C</td>
<td>ASTM 18C Thermometer, Range: 34 to 42°C</td>
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<tr>
<td>250-000-65F</td>
<td>ASTM 65F Thermometer, Range: 122 to 176°F</td>
</tr>
<tr>
<td>250-000-65C</td>
<td>ASTM 65C Thermometer, Range: 50 to 80°C</td>
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<tr>
<td>K11800</td>
<td>Sample Container with Cover Assembly</td>
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<tr>
<td>K11810</td>
<td>Transfer Connection</td>
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<tr>
<td>371-000-002</td>
<td>Liquid Manometer</td>
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<tr>
<td>K1128-1-0-12</td>
<td>Manometer Adapter Kit</td>
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<tr>
<td>AS568-210</td>
<td>O-ring Seal</td>
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<td>AS568-113</td>
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<td>K40100</td>
<td>Flexible Tubing</td>
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<tr>
<td>K11459</td>
<td>Reid Vapor Pressure Bath</td>
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</table>

### Test Method

**Wax Appearance Point of Distillate Fuels**

**Test Method**
- Detects the formation of wax crystals in burner fuels, diesel fuels and turbine engine fuels at low temperatures. The sample is cooled at a specified rate while being agitated. The temperature at which wax first appears is the wax appearance point.

**Wax Appearance Point Apparatus**
- Conforms to ASTM D3117 specifications
- For detection of separated solids in burner fuels, diesel fuels and turbine engine fuels. Similar to K29700 Freezing Point Apparatus. Includes jacketed sample tube, motorized stirrer assembly, outer vacuum flask, clamps and stand.

**Electrical Requirements:**
- 115V 60Hz
- 220-240V 50Hz
- 220-240V 60Hz

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**Vapor Pressure of Petroleum Products and LP Gases**

**Wax Appearance Point Apparatus**
- Conforms to ASTM D3117 specifications
- For detection of separated solids in burner fuels, diesel fuels and turbine engine fuels. Similar to K29700 Freezing Point Apparatus. Includes jacketed sample tube, motorized stirrer assembly, outer vacuum flask, clamps and stand.

**Electrical Requirements:**
- 115V 60Hz
- 220-240V 50Hz
- 220-240V 60Hz

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