

**-New Standard  
ASTM D6749  
-No Methanol**

**MINI  
POUR/CLOUD  
POINT  
TESTER  
Series**

**MPC-102**



**MPC-102 series** has been designed for automatic determination of **Pour Point (PP)** and **Cloud Point (CP)** with small specimen size and shorter test cycle time while securing better test precision than the conventional manual methods'. PP measurement is made utilizing a new ASTM test method, namely "Air Pressure Method"(\*1), which yields eventually no bias against the conventional test method, repeatability/reproducibility of 1°C/2°C and 2-3 times faster determinations. The epoch-making high accuracy justifies PP determination at 1°C intervals, which can help increasing the yields in the process. The CP/PP mode executes a CP determination and then PP determination consecutively, which further improves the test throughput in the lab. In addition to liquid-cooled model MPC-102L, air-cooled model MPC-102A is available. Multiple-tests versions with 6 test heads and 3 test heads are also available for higher volume tests.

\*1:ASTM D6749 on "Standard Test Method for Pour Point of Petroleum Products (Automatic Air Pressure Method)"

**HIGH PRECISION POUR POINT DETERMINATION:** The typical repeatability and reproducibility are 1°C and 2°C respectively, when PP is determined at 1°C intervals.(\*2) This high precision attributes to the patented Air Pressure method, in which the disturbance to the formation of wax crystal structure through the test process is kept at a minimal and consistent level.

\*2:Precision information is for general samples such as diesel fuels, base oils and finished lube oils.

**POUR POINT AT 1°C TESTING INTERVALS:** With this high precision, PP can be determined at 1°C intervals for more precise process control, and therefore a considerable savings in the process can be realized.

**EASY AND QUICK PP/CP DETERMINATION:** Just set up a sample, select a test mode and then press the START key. The sample is cooled at the steepest possible rate without affecting the formation/growth of wax crystal, which has been known to be a critical factor for PP/CP determination. The test cycle time is typically 1/3 to 1/2 of that of the conventional tilting method's.(\*3)

\*3:When a diesel fuel oil with PP of -32.5°C is tested, the Air Pressure method took 45 minutes while the conventional tilting method took 140 minutes. Note that the Japan Industrial Standard defines PP in 2.5°C increments

**EASY SAMPLE HANDLING:** Since the required sample volume is a mere 4.5mL and the sample cup is a test-tube type removable jar, the sample handling is extremely easy.

**COMPACT DESIGN &ENERGY EFFICIENT:** Use of Peltier Cells for sample cooling/heating made this "mini" tester not only compact in design but energy efficient. Depending on the temperature range, either air, tap water or small chiller with anti-freeze suffices the cooling requirement. No methanol is required.

### SPECIFICATIONS:

#### TYPE:

Mini Pour Point(PP) and Cloud Point(CP) tester with sequential CP and PP measuring capability. Sample cooling and pre-heating by TED.

**TEST STANDARDS:**ASTM D6749/D97, ISO 3016 (PP), ASTM D2500, ISO 3015 (CP)

**SPECIMEN VOLUME:** 4.5ml

**MEASURING RANGE:** (typical\*)

1.MPC-102L(Liquid cooled model):

+5<sup>1</sup>°C to -40°C with tap water of 20°C

+51°C to -65°C with cooling liquid of -35°C

2.MPC-102A(Air cooled model):

+51°C to -30°C (in 25°C ambient)

\*:Sample viscosity, etc. affects on lowest temperature of the measuring range.

#### MEASUREMENT MODES:

Selectable from various modes.

1.CP mode

2.PP modes: Programmed by the user. Programmable parameters are:

\*Amount of applied air pressure for PP detection, to accommodate different sample types: **L**(low) for diesel fuels, **H**(high) for lube oils, **VH**(very high) and **UH** (ultra high) for residual fuels and similar samples.

\*Testing intervals: **1.0°C**, **2.5°C**, or **3.0°C**

(In total, 4x3=12 modes for PP.)

3.CP/PP modes: CP is determined and then PP.

PP detection is programmable by the user with the same parameters as PP modes'. (12 modes in total.)

#### SAMPLE AUTOMATIC PRE-HEATING:

Automatic preheating at either +45°C or **EPP**+10°C. (EPP=**Expected Pour Point**)

#### DISPLAY:

Test parameters, EPP, bath temperature, sample temperature, PP, and CP displayed on VFD.

Temperatures displayed in 0.1°C increments.

#### EPP SETTING:

EPP(Expected Pour Point) needs to be set prior to test Starts.

#### SPECIMEN CUP:

Cylindrical glass test jar with 4.5ml sample volume.

### SENSORS:

Compound type sensor assembly for PP and CP.

PP detected by air pressure method(patented). CP

detected photo-electrically. PT100 temp. sensors.

#### SAMPLE COOLING RATE:

As standard, 4°C/min. till EPP+40°C, and 1°C/min.

thereafter. Cooling profile is programmable.

#### SAFETY SHUTDOWN:

As hot side of TED reaches 60°C while preheating, warning buzzer beeps and heating stops.

#### DATA OUTPUT:

RS-232C 1 channel (for PC or Optional Printer)

#### DATA STRAGE

Last 50 test data are stored in RAM

#### POWER REQUIREMENTS:

100, 120, 220, or 240VAC 0.5kW

#### DIMENSIONS AND WEIGHT:

230mmWx480mmDx385mmH, 20kg

### ORDERING INFORMATION:

#### STANDARD ACCESSORIES:

1.Specimen Cup with Reflex Seal	5 pcs
2.Spare Pressure Conducting Tube	2 pcs
3.AC power cable	1 pc
4.Connecting Cables(set of 2)	1 set
5.Hose and cramps(MPC-102L)	1 set
6.Dripping Plate(MPC-102L)	1 pc
7.Instruction manual	1 copy

#### OPTIONAL ACCESSORIES:

Water Regulator with Pressure Gauge

(MPC-102L, for Connecting Tap Water)

Chillers for -60°C of Measurement: TANAKA TCU-40B

(MPC-102L): or Neslab RTE-740(\*1)

or Julabo FP40-MV(\*2)

Chiller for -45°C of Measurement: Neslab RTE-7(\*1)

Printer, BS-80TSL (w/ AC Adapter and Connecting Cable)

Built-in Clock Board

\*1:Made in USA.

\*2:Made in Germany

#### SUGGESTED SPARES FOR 2 YEARS:

1.Specimen Cup with Reflex Seal	20 pcs
2.Reflex Seal	30 pcs
3.Pressure Conducting Tube	5 pcs
4.O-Ring set (G-35 and P-8)	2 sets

Specifications subject to change without prior notice.

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