

**MINI**

**POUR/CLOUD**

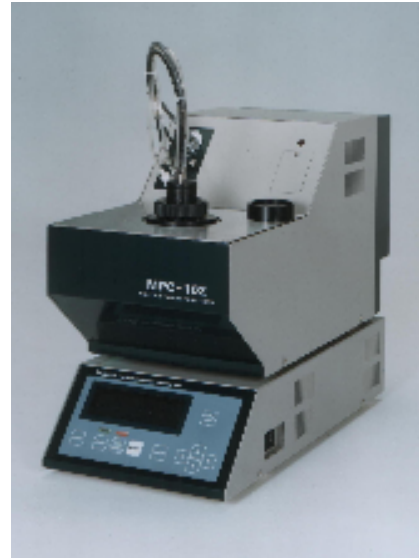
**POINT**

**TESTER**

**Series**

**MPC-102**

*-New Standard  
ASTM D6749(PP)  
ASTM D7683(CP)  
-No Methanol*



**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 D7683/D2500, ISO 3015 (CP)

**SPECIMEN VOLUME:** 4.5ml

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

- 1.MPC-102L(Liquid cooled model):  
+51°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 (0.1 or 1.0 °C, selectable)
- 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                      | 1 pc   |
| 3. AC Power Cord, 3.0m (<AC125V)<br>or 2.5m (>AC200V) | 1 pc   |
| 4.Connecting Cables(set of 2)                         | 1 set  |
| 5.Hose and clamps(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: (MPC-102L):  
TANAKA TCU-40B or Julabo FP40-MA(\*1)  
or Thermo AC150 A40(\*2)  
Printer, BS2-80TS (w/ AC Adapter and Connecting Cable)  
Built-in Clock Board

\*1: Made in Germany \*2: Made in USA

##### SUGGESTED SPARES:

- |                                 |        |
|---------------------------------|--------|
| 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.

### TANAKA SCIENTIFIC LIMITED

7-10-3, Ayase, Adachi-ku, Tokyo 120-0005 Japan  
Tel: +81-3-3620-1711 Fax: +81-3-3620-1713

URL: <http://www.tanaka-sci.com>

e-mail: [sales@tanaka-sci.com](mailto:sales@tanaka-sci.com) Printed in Japan1103(E)