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.
**Mini Pour/Cloud Point Tester, series MPC-102**

**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 3015 (PP), ASTM D2500, ISO 3016 (CP)

**SPECIMEN VOLUME:** 4.5ml

**MEASURING RANGE:** (typical*)
- MPC-102L (Liquid cooled model):
  - +5°C to -40°C with tap water of 20°C
  - +5°C to -65°C with cooling liquid of -35°C
- MPC-102A (Air cooled model):
  - +5°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.

**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 STORAGE:**
Last 30 test data are stored in RAM

**POWER REQUIREMENTS:**
100, 120, 220, or 240VAC 0.5kW

**DIMENSIONS AND WEIGHT:**
230mmWx480mmDx385mmH, 20kg

**ORDERING INFORMATION:**

**STANDARD ACCESSORIES:**
- Specimen Cup with Reflex Seal 5 pcs
- Spare Pressure Conducting Tube 2 pcs
- AC power cable 1 pc
- Connecting Cables (set of 2) 1 set
- Hose and cramps (MPC-102L) 1 set
- Dripping Plate (MPC-102L) 1 pc
- 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-40A (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:**
- Specimen Cup with Reflex Seal 20 pcs
- Reflex Seal 30 pcs
- Pressure Conducting Tube 5 pcs
- 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 Printed in Japan 0303(E)