

Adjustable Cloud and Pour Point Bath

ASTM D97 - ASTM D2500 - ISO 3015 - ISO 3016 - IP 15 - IP 219



- ⊕ Drain to empty bath
- ⊕ Wheels fitted for easy transport
- ⊕ Compact, low noise
- ⊕ Auto tune, high precision
- ⊕ Position for six jackets (TLC40-14)
- ⊕ Position for four jackets (TCC-B)

General

Apparatus to determine the cloud and pour point manually. The TLC40-14 or TCC-B are single and adjustable circulator baths with position for six or four jackets. The pour point describes a procedure for testing the fluidity of a petroleum product at a temperature. The cloud point is defined as the temperature of a liquid specimen when the smallest observable cluster of wax crystals first appears upon cooling. Tamson is also supplying a liquid bath to preheat the sample to $48 \pm 1.5^\circ\text{C}$ or 12°C above the expected pour point, please see table 3.

Cooling medium

The used cooling system is ozone friendly and doesn't contain any CFK/HCFK gas.

Control mechanism

With the compressor running continuously, the fluid temperature is regulated through an electronic controlled heater.

Span

The TLC40-14 operates from -40°C to $+20^\circ\text{C}$ (-40°F .. 68°F). The TCC-B operates from -88°C to $+20^\circ\text{C}$ (-126°F to $+68^\circ\text{F}$).

| Item | Unit | TLC40-14 | TCC-B |
|--|-------------------------------------|--|---|
| P/N 230V/50Hz | | 00T0520 | 00T0310 |
| P/N 230V/60Hz | | 00T0522 | 00T0311 |
| P/N 115V/60Hz | | 00T0525 | N.A. |
| Power | [Watt] | 2400 | 2600 max |
| Used materials inside bath | | Stainless steel Chrome plated coil | |
| Range | | $-40..+20^\circ\text{C}$ $-40..+68^\circ\text{F}$ | $-88..+20^\circ\text{C}$ $-126..+68^\circ\text{F}$ |
| Reading | [$^\circ\text{C}/^\circ\text{F}$] | $^\circ\text{F}$ on request | |
| Setting \pm | [$^\circ$] | 0.1 | |
| Stability \pm | [$^\circ\text{C}$] | Better than 0.05 | Better than 0.1 |
| Heating | [kW] | 1.55 (1 heater) | 1.4 (1 heater) |
| Bath volume | [L] | 14..15 | 11 |
| Pump pressure | [mBar] | 300 max* | 1000 max |
| Pump cap | [L/min] | 10 max* | 16 max |
| Compressor | [W] | 400 | 2*400 |
| Heat removal | [W] | @-10° 1220 | @-64° 400 |
| | [W] | @-20° 880 | @-73° 350 |
| | [W] | @-30° 520 | @-82° 300 |
| | [W] | @-40° 250 | @-84° 250 |
| Opening bath | [mm] | 240 x 160 | 175 x 130 |
| Depth bath | [mm] | 150 | 240 |
| Length | [mm] | 810 | 770 |
| Width | [mm] | 460 | 380 |
| Height | [mm] | 770 | 780 |
| Weight | [kg] | 65 | 73 |
| CE | | Conforms to CE regulation | |
| * 24T0399: Optional pump (85~260V) pressure max 1 Bar, flow max 16 ltrs/min. | | | |

Accuracy

The set point is adjustable in steps of 0.1° . The overall system accuracy is better than $\pm 0.1^\circ\text{C}$. The temperature readout is standard available in $^\circ\text{C}$, on request in $^\circ\text{F}$.

Pump

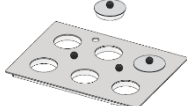


A pressure pump provides circulation in the bath or via an external circuit. The pump pressure is 300 mBar and 10 liters per minute (no counter pressure) for TLC40-14. For the TCC-B the pump pressure is 1000 mBar and 16 liters per minute. With the TCC-B, the pump speed can be adjusted.







Safety

The bath conforms to CE regulations. It also is equipped with a mechanical adjustable and resettable safety thermostat to guarantee safe around the clock operation.

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Accessories




| Table 1: Necessary accessories | | | | |
|--------------------------------|---|--------------|-------|---|
| P/N | Picture | TLC40 -14 | TCC-B | Description |
| 03T2171 |  | 1 | | Insulated cover for six positions with insulated lids. |
| 03T2173 |  | | 1 | Insulated cover for four positions with insulated lids. |
| 14T0235 |  | 6 | 4 | Jacket |

| Table 2: Accessories | | | | |
|----------------------|---|--------------|-------|--|
| P/N | Picture | TLC40 -14 | TCC-B | Description |
| 09T0142 |  | 1 | | Test jar for cloud and pour point, case of 24 pieces. |
| 31T0012 | | 6 | 4 | Test jar for cloud and pour point, 1 piece. |
| 31T0421 |  | 2 | | Felt gasket (pack of ten pieces). |
| 31T0422 |  | 2 | | Felt disk (pack of ten pieces). |
| 31T0013 |  | 2 | | Cork for test jar (P/N 31T0012 or 09T0142), pack of ten pieces. |
| 31T0423 |  | 1 | | Cork for bath thermometer, pack of ten pieces. |
| 25T0904B |  | 6 | 4 | ASTM S5C thermometer with special low-hazardous filling and works certificate with at 0°C. |
| 25T0905T | | 6 | 4 | ASTM 6C thermometer with special low-hazardous filling and conformity certificate. |
| 25T0946B | | 6 | 4 | Thermometer similar to ASTM 61C with special low-hazardous filling and works certificate at 100°C. |

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Bath to preheat samples

Table 3: Bath to preheat samples to $48 \pm 1.5^{\circ}\text{C}$ or 12°C above the expected pour point

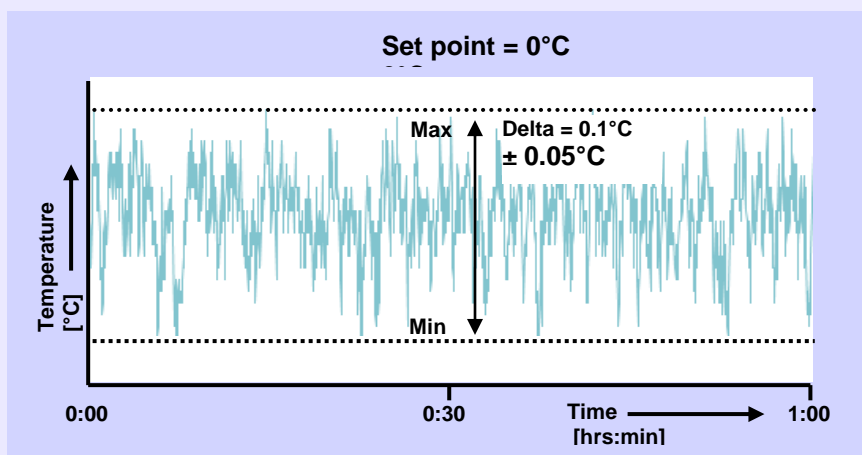
| P/N | Picture | Quantity | Description |
|----------|---|----------|---|
| 31T0671 |  | 1 | TC16 circulator, including cover with six \varnothing 51mm openings with lids and a thermometer opening. 230V/50-60Hz |
| 31T0861 | | | TC16 circulator, including cover with six \varnothing 51mm openings with lids and a thermometer opening. 115V/60Hz |
| 14T0235 |  | 6 | Jacket |
| 31T0423 |  | 1 | Cork for bath thermometer, pack of ten pieces. |
| 25T0946B | | 1 | Thermometer similar to ASTM 61C with special low-hazardous filling and works certificate at 100°C . |

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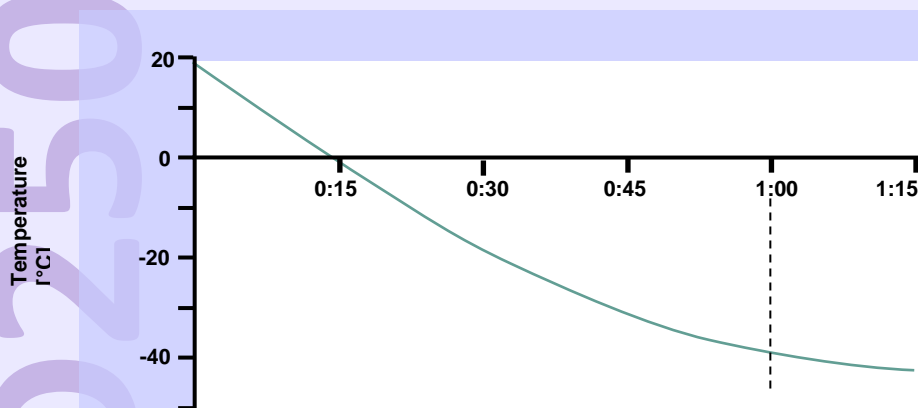
Graphs

Temperature stability
(methanol used as bath liquid)



TLC40-14

Cooling down TLC40-14
(methanol used as bath liquid)



TCC-B

Cooling down TCC-B
(methanol used as bath liquid)

