

KV-2 Low Temperature Viscometer Bath

Kinematic Viscosity in Petroleum Products

ASTM D445-IP 71; ASTM D446; ISO 3104; ISO 3105



- Temperature range -40°C to +20°C
- Extra narrow footprint (37cm width) optimising bench space
- Accommodates 2 standard viscometer tubes
- Digital display with 0.01 resolution

Low Temperature Kinematic Viscosity

Aviation fuel, lubricants and hydraulic fluids are exposed to extreme temperatures, both high and low due to the range of altitudes aircraft fly. In particular it is essential that jet fuel maintains the ability to flow freely throughout the aircrafts fuel system, aiding the fuel flow to the engines. The spray pattern at the injector nozzle in jet engines is known to be affected by the viscosity. For aviation fuel, lubricants and hydraulic fluids kinematic viscosity is a key performance property. For aviation turbine fuel (AVTUR), such as Jet A1, the kinematic viscosity is currently specified at -20°C .

KV-2 Low Temperature Viscometer Bath

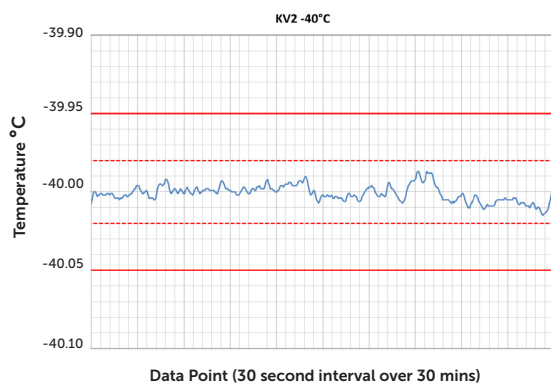
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The Seta KV-2 is a two place low temperature viscosity bath designed to achieve ultra-high stability in the temperature range of $+20^{\circ}\text{C}$ to -40°C . The instrument has a small footprint and is ideally suited for busy labs.

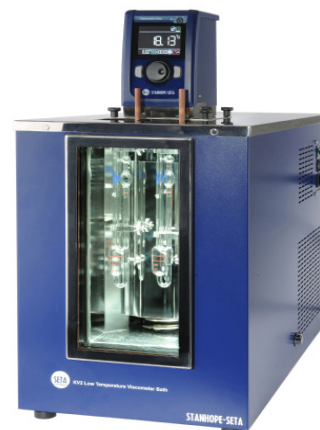
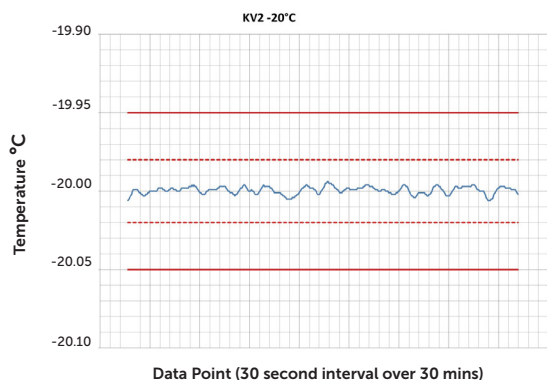
The bath is fully self contained and requires no external chillers or connections. A heated top plate and viewing window prevent condensation and ice formation. Easy to use controller features large 13mm digits and high intensity long life ultra-bright LED lighting ensures clear bath visibility at all times. Data logging via the external RS-232 port is also possible when connected to a PC and suitable software. The bath has an independent over-temperature and low fluid level cut-out and a warning alarm.

Stability Graphs

Stability trace at -40°C . Solid red line shows ASTM stability limits ($\pm 0.05^{\circ}\text{C}$)



Stability trace at -20°C . Solid red line shows ASTM stability limits ($\pm 0.05^{\circ}\text{C}$)



Key Features

- Proven temperature stability of $\pm 0.01^{\circ}\text{C}$
- Heated window and top plate - avoids condensation
- Integral refrigeration system which reaches -40°C in less than 3 hours
- Independent over temperature & low fluid level cut-out
- Illuminated bath providing clear visibility
- Insulation and heated viewing window prevents condensation

Calibration

Each bath is provided with a 5 point factory calibration certificate, traceable to national standards including temperature traces. The nominal calibration points are; $+20$, 0 , -10 , -20 and -40°C however customers can request specific temperature calibrations and traces.

Technical Specifications:

Temperature Range:	-40 to $+20^{\circ}\text{C}$
Temperature Stability:	$\pm 0.01^{\circ}\text{C}$
Tube Capacity:	up to 2
Bath Fluid:	Anhydrous Methanol or Denatured Ethyl Alcohol
Bath Capacity:	7 litres
Calibration:	5 point; $+20$, 0 , -10 , -20 and -40°C
Refrigerant:	R507
Voltage/Power:	220/240V, 50/60Hz/ 2.7kW
Size (HxWxD)/ Weight:	75 x 37 x 70cm/ 56kg

Ordering Information:

KV-2 Low Temperature Viscometer Bath:	94710-3
Jet Fuel Viscosity Standard (-20°C / -4°F):	99798-0
Jet Fuel Viscosity Standard (-40°C / -40°F):	99799-0
Low Temperature Ubbelode Start-up Kit	94712-0
Calibrated U-Tube Viscometer	11619/02
Calibration Suspended Level Viscometer	11625/01
Calibrated Suspended Level Viscometer Shortened Form	11628/03
Calibration Cannon-Fenske Routine Viscometer	11634/03
Calibrated Ubbelode Viscometer	11643/04
Universal Viscometer Holder	23150-2