



-38.8344°C

- Uncertainty 0.000220°C
- Rugged Stainless Steel Construction
- 7N Pure

The Isotech Mercury Cell is constructed in a rugged, sealed stainless steel enclosure allowing the triple point of -38.8344°C to be realized both easily and safely.

**Total Confidence**

The embodiment of the Mercury Triple Point Cell was originally developed in the US with a very close cooperation between Henry Sostmann and Dr. Furukawa of N. B. S. (now NIST) over twenty years ago. The physical size, materials and metal purity are identical to this original design. The Mercury is distilled four times leaving impurities of 10 to 15 parts per billion. The cells made by Isotech still use the original design, purity and supplier of Mercury.

In international intercomparisons the cells made by Isotech have always been within the National Laboratories uncertainty of calibration and with over 20 years of successful use throughout the world the cell embodies the finest traditions of production and use.

After more than 20 years Dr. Furukawa opened some of the original cells and the Mercury was still above 99.99995% pure. A reflection of the long term performance of the design.

**Operation**

The cell can be realized in an Isotech stirred liquid bath such as the Hydra or 915 with plateau lengths of up to a week. For convenience, and to avoid the need to use a liquid, the dedicated Isotech Mercury Triple Point Apparatus can be used. This equipment is in use in many NMIs and commercial labs

# The Isotech Mercury Cell



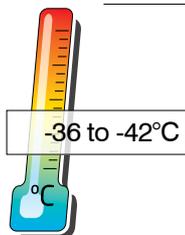
Model	ITL-M-17724
Temperature	-38.8344°C
Metal Purity	> 99.99999 7N
Dimensions	
Outside Diameter	40mm
Inside Diameter	9.5mm
Total Height	475mm
Metal Depth	200mm
Uncertainty *	0.22mK

**How to order**

ITL-M-17724 Mercury Cell

The Cell is supplied with a Certificate of Metal Purity

\*We have a choice of UKAS calibration Services, the stated uncertainty figure is for our Premium UKAS Calibration Service



# Apparatus Mercury Triple Point

- Purpose Designed for Isotech Mercury Cell
- Outstanding Convenience and Safety
- Liquid Free

The Isotech Model ITL -M-17725 Cryostat is a self-contained, mechanically-refrigerated, system with a main well to house one cell and two auxiliary wells for pre-chilling of thermometers. The cryostat temperature is steplessly adjustable from  $-36^{\circ}\text{C}$  to  $-42^{\circ}\text{C}$  with scale-divisions of  $0.1^{\circ}\text{C}$  (interpolation possible) and 24 hour stability better than  $\pm 0.05^{\circ}\text{C}$  measured by an SPRT in the well of a Mercury Cell inside the Cryostat.

The cryostat has several unique features providing outstanding convenience and safety. The refrigeration system has sufficient capacity to bring a cell to operating temperature in about one hour. At operating temperature, the cooling rate is about 1 Kelvin/minute and the heating rate is about 2 Kelvin/minute.

This permits rapid changes to be imposed on the temperature of the cell environment to a void excessive demands on the (low) heat-of-fusion energy of the mercury within the cell.

In addition, all temperature control is accomplished through control of refrigerant flow, providing inherently fail-safe operation. Indicators provided for the cryostat are "POWER ON" and "COOLING".

The cryostat provides convenient conditions for operating mercury fixed point cells both in heating and in cooling mode.



Model	ITL-M-17725 Apparatus
Temperature Range	$-36^{\circ}\text{C}$ to $-42^{\circ}\text{C}$
Uncertainty	0.22mK (with cell)
Ambient Limits	$18^{\circ}\text{C}$ to $28^{\circ}\text{C}$
Plateau Duration	8-12 hour Plateau
Power	750W typical. 208-240 VAC, 50/60Hz
Dimensions	Height 960mm Width 600mm Depth 560mm Weight 96kg

**How to order**  
ITL-M-17725 Mercury Triple Point Apparatus