



# Apparatus Gallium

- Simple to Use
- Automatic Operation
- Totally Safe Operation

Model 17402B Gallium Apparatus is not an adaptation from general purpose equipment, but is designed specifically to realize and maintain the Gallium Cell on the melt plateau, for calibration of thermometers on the International Temperature Scale of 1990.

The apparatus will permit the gallium to melt coaxially over 12 to 16 hours. It is uniquely designed to also freeze the cell from the bottom up, which eliminates the danger of damage due to the expansion of gallium during freezing.

1. Model 17401 Gallium Cell may be used, without the thermal environment provided by Model 17402B Gallium Apparatus, in a well controlled bath. However, the advantages of automatic operation, convenience and cell protection, recommend the use of the Model 17402B environment in most cases.
2. No external connections other than power are required.
3. A completely automatic electronic control system provides a precise means for realization and maintenance of the plateau. The Apparatus can be turned on by a timer an hour before the laboratory day begins, the plateau utilized throughout the working day and the system recycled overnight. A thermal sink is provided which forces the gallium to refreeze upwards from the bottom (gallium expands when it freezes, requiring a specific freeze orientation to avoid rupturing the cell).
4. Confidence is a major requirement in a standard. The Isothermal Gallium Cell and Apparatus have a long (20 year) history and have been successfully used in most National and Primary Laboratories world-wide. This is one of the main reasons for choosing the Isothermal Cell and Apparatus.
5. The Cell and Apparatus are manufactured to the strict requirements of BS 5750 and ISO 9000. Each finished unit becomes part of the Isotech UKAS working Calibration Laboratory for two weeks or more, during which use the control circuits are set and checked for optimum performance. It is released only when Isotech is entirely satisfied with its performance.



Model	ITL-M-17402B cell apparatus
Temperature Range	29.7646°C
Uncertainty	0.25mK (with cell)
Ambient Limits	15°C to 28°C
Cycle Time	With cell at 20°C, time to plateau is 1 hour maximum. Recycling, including freezing the cell is typically 3 to 4 hours
Plateau Duration	Not less than 12 hours under specified ambient conditions; 16 hours typical
Power	75 Watts typical 100-130 or 208-240Vac* 50/60Hz *Field Changeable
Dimensions	Height 429mm Width 259mm Depth 181mm Weight 8.4kg

**How to order**  
 Model ITL-M-17402B Gallium Apparatus (without cell)  
 Please specify voltage required.  
 Model ITL-M-17401 Gallium Cell