X-Temp 2

Low Temperature Single Crystal Handling for X-ray Structure Analysis
A Combination of Crystal Cooling and Oil-Drop Mounting Technique

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In combination with inert oils (e.g. perfluorinated polyethers FOMBOLIN YR 1800 and GALDEN HT 90 from AUSIMONT DEUTSCHLAND GMBH, Kölner Straße 3a, Postfach 5202, D-65760 Eschborn (www.ausimont.de))

**X-Temp 2 facilitates**

- handling of highly reactive and/or thermolabile compounds (e.g. the solid state structure of n-butyllithium T. Kottke, D. Stalke *Angew. Chem. Int. Ed. Engl.* 1993, 32, 596.)
- crystal preparation (selection, cutting, washing, mounting at the tip of a glass fiber) at any constant temperature between room temperature and –120°C (D. Stalke *Chem. Soc. Rev.* 1998, 27, 171.)
- investigation of the crystal quality by the polarization device of any commercial microscope.
- 3-5 hours operation time with a single filling and pressureless top-up without the need of interrupting low temperature work.

**Recent results achieved employing X-Temp 2**


Specification of **X-Temp 2**

**a) model**

*evaporator:* nickel plated brass; recooling of evaporated nitrogen to guarantee the gas stream temperature being independent from the liquid nitrogen level

*top of insulation container:* aluminum/polystyrene material

*main heater:* ceramic power resistors

*transfer line:* two silvered glass tubes with vacuum jacket, interconnection by a teflon adapter and a screw cap with silicon sealing; integrated heating coil (stream heater)

*nozzle:* teflon material with fan-shaped outlet, integrated nozzle heater, connected in series with the main heater, integrated thermosensor.

*controller:* illuminated switches, triac controlled power supply of heating elements, visual and acoustic alarm at low nitrogen level, automatic shut-off of all heating elements at minimum level, external miniature thermosensor, operating current 110/220 V switchable

**b) technical data**

*liquid nitrogen capacity:* 5 L

*operation time:* 3-5 h (dependent on gas flow rate) per single filling, refillable at standard pressure without interrupting operation

*T(min):* -120°C, *T(max):* 30°C, temperature constancy \( \Delta T \) better than \( \pm 2^\circ C \)

**c) dimensions**

*controller:* 110 x 290 x 200 (H x W x D in mm), weight 4 kg

*evaporator:* 250 x 390 (\( \varnothing \) x H in mm), weight 9 kg

*height of transfer line:* 200 mm above top of insulation container

*length of transfer line:* 220 mm from edge of container to top of nozzle outlet

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**Quote for the X-Temp 2 system package**

1 liquid nitrogen evaporator with thermo insulation container
1 transfer line with integrated stream heater, teflon adapter and screw cap
1 teflon nozzle with built in nozzle heater and thermosensor
1 controller for generating and regulating the nitrogen cold gas stream, operating at 110/220 V power supply
1 external thermosensor

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**Total: € 5980.00 plus shipping**
**X-Temp 2**: System for Crystal Handling at Low Temperatures

crystal cooling by a N\textsubscript{2} inert gas stream generated by **X-Temp 2**
easy crystal handling under the microscope down to –120°C without icing

Single crystals immersed in an inert oil **X-Temp 2** cooled on the microscope slide