Handling and Care of Crystal Arrays

Unpacking Instructions –

CAUTION . . . DO NOT OPEN PACKAGE UNTIL DETECTOR REACHES ROOM TEMPERATURE!

If the detector package comes into the laboratory from a truck or warehouse where the temperature differs by 5°C (10°F) or more from that of the laboratory, allow the package to reach room temperature before opening. This will prevent fracturing the crystal from thermal shock. A good practice is to leave the package in the laboratory overnight before opening.

If damage to the shipping carton is apparent, ask that the carrier's agent be present when the detector is unpacked, or otherwise document the damage. | Saint-Gobain Crystals cannot replace a detector damaged in shipment without this damage report.

Inspect the detector for mechanical damage, scratches, etc. Check any mechanical or thermal shock indicators (if present).

Storage and Thermal Shock –

NEVER STORE THE DETECTOR NEAR A HEATING ELEMENT, SUN-WARMED SURFACE, RADIATOR OR AIR CONDITIONER!

Unless specifically designed to withstand other conditions, Saint-Gobain Crystals detectors are intended for use in a normal laboratory environment. They will operate reliably between 4°C and 43°C (40°F and 110°F), provided the rate of temperature change does not exceed 8°C (15°F) per hour.

Crystal Hydration –

CsI(Tl), CsI(Na) and CsI are slightly hygroscopic, which means that the crystals are easily damaged when exposed to moisture in the air at normal humidity levels. The arrays are packaged in a vacuum sealed package with desiccant packets placed in the sealed layers. After opening, the arrays should be stored in a dry environment.

Other scintillators such as CdW04, LYSO, BGO, that are not hygroscopic are not directly affected by moisture, but should be handled and stored similarly to hygroscopic arrays since some reflector material may be sensitive to moisture.

UV Exposure –

Ultraviolet radiation in sunlight or fluorescent lighting can produce discoloration and phosphorescence in scintillating crystals. If exposed for long periods of time, crystal damage may occur. For this reason, unpackaged arrays should be stored in darkness when not in use. In the laboratory, UV filters should be installed on all lighting, and UV protection should be applied to all outside windows.

Direct handling –

Once removed from the protective packages, all arrays should be handled with gloves (latex, vinyl, or other surgical type gloves) at all times. Proper PPE (dust masks) should be worn at all times when working with arrays, extreme care is to be taken when handling the arrays, particularly for the very thin low energy style arrays. Any flexing or bending action will damage the arrays both mechanically as well as affecting the performance of the array.

For arrays that contain lead, the open face should not be touched, the lead is very soft, and can easily be smeared onto the active surface of the crystals.

If any of the arrays need to be cleaned prior to using, the open faces should be wiped with a lens gauze lightly dampened with laboratory grade alcohol. For the cleaning of arrays that contain lead, the wiping action should be parallel to the crystals such that the lead will not smear across the crystals.

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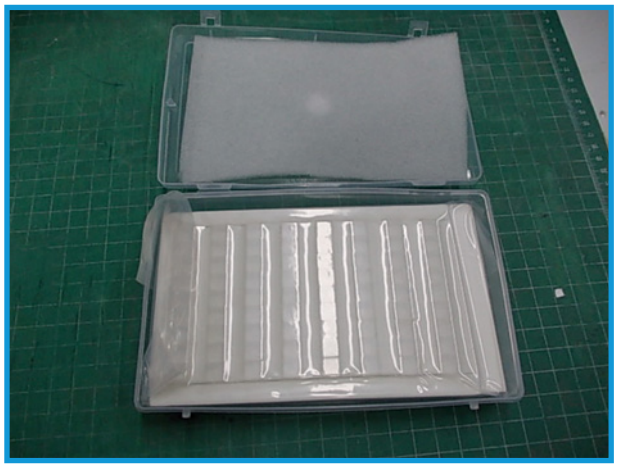
Crystals are vacuum sealed

The vacuum sealed package is placed in a plastic box with top & bottom support as shown.

Desiccant is placed inside the tray to protect against hydration.



The plastic box is vacuum sealed & marked with tape bearing CsI(Tl).

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Saint-Gobain Crystals

www.crystals.saint-gobain.com