

## Handling Instructions for Scintinel™ Stilbene Crystal Products

### Overview

This document provides guidance regarding handling the crystalline material stilbene. As with any crystalline material, exercise caution to prevent damage. These instructions are provisional and subject to change. Please contact Inrad Optics with questions or comments.

### Unpacking

Allow adequate time for materials to equilibrate with room temperature prior to removing stilbene from its shipping container and protective packaging. Wear gloves and hold crystals loosely to minimize thermal contact. Inspect materials for damage.

### Storage

Special storage conditions are unnecessary for stilbene. These crystals are not hygroscopic and will not degrade with moisture. Store stilbene in a location where the temperature is stable, away from heating and cooling elements. Over time, some stilbene surfaces may develop a hazy appearance. Often the application of optical coupling grease will suffice to provide a transparent interface; contact Inrad Optics if this haze compromises the light output.

### Handling

Stilbene can be handled in a similar manner as other crystalline materials. Allow stilbene to equilibrate to room temperature. Do not place stilbene directly in contact with materials of high thermal conductivity (such as metals). Avoid thermal shock and temperature gradients within the crystal. Small stilbene parts can be safely heated and cooled at rates of 1 °C/minute. 1"x1" cylinders and 2"x2" cylinders can withstand a temperature change of 10 and 5 °C/hour, respectively. Holding crystals loosely will minimize heating during handling. The melting point of stilbene is 124 °C and evaporation may be observed as the temperature approaches 2/3 this value.

### Wrapping and Optical Contact Materials

When stilbene is provided in a bare state, silicone greases such as BC-630 and EJ-550 may be used for optical coupling to the photodetector. These materials may be left in contact with stilbene for extended periods. Unless otherwise specified, one face of the stilbene part will be polished; this is the face intended for coupling.

Stilbene can be wrapped with PTFE tape to provide diffuse reflection from the remaining surfaces.

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## Cleaning

Stilbene is not chemically compatible with solvents typically used for cleaning optics, such as acetone or alcohol. These solvents will attack the surface and may lead to cracking as they evaporate. We do not recommend cleaning stilbene with water. The gentlest way to clean stilbene is to wipe with a soft, dry cloth. If additional cleaning is necessary contact us for instructions.

If stilbene is provided with a thin fused silica window, that window may be cleaned using lens tissue and solvent.

## Polishing

Stilbene surfaces can be lightly polished by buffing on a soft cloth. Take care to hold the part gently. Aggressive grinding and polishing are not recommended, please contact Inrad Optics for guidance prior to attempting to rework the surface. Keep in mind that slightly rough surfaces will be transparent with the application of optical coupling grease.

## Safety

Avoid inhalation or ingestion of stilbene dust or fragments. Do not dispose of stilbene in wastewater streams.

## Orientation

Unless otherwise specified, stilbene cylinders and bars have end faces parallel to (010) crystal planes. Crystallographic orientation may be provided on stilbene products: a black dot indicates a (010) face and a red dot indicates a (001) face.