Highly flexible, LED curable adhesive for bonding PVC and polycarbonate.

**Tangent Product 40221** is a UV / Visible light curable adhesive specifically developed to bond flexible PVC and rigid polycarbonate. This product is a single component adhesive and is easily dispensed from syringes, cartridges, and precision valve dispensing systems. In its standard viscosity, Product 40221 will self-level on surfaces after dispensing. (Other viscosity ranges, lower and higher, are available to accommodate specific dispensing and assembly process requirements.) When properly cured, Product 40221 is clear, tack-free, and highly resistant to moisture and yellowing. Product 40221 cures very rapidly with broad spectrum UV lamps, (320-450nm), as well as monochromatic LED systems with output of 365nm or 405nm. The ability to cure with LED facilitates cooler curing processes which minimizes heat impact on thin film PVC components. Product 40221 has been formulated to pass the testing required for USP Class VI biocompatibility approval, and is compatible with common sterilization methods including gamma irradiation and EtO.

**UNCURED PROPERTIES**

- **COMPOSITION**: Urethane Acrylate / Monomer Blend
- **VISCOITY**: 750-1500 cP. at 25°C.
- **APPEARANCE**: Clear liquid with yellow tint.
- **SPECIFIC GRAVITY**: 1.1 -1.2 at 25°C.
- **FLASH POINT**: 200°F.
- **TOXICITY**: Refer to Material Safety Data Sheet
- **SHELF LIFE**: One year

**CURED PROPERTIES**

- **SHORE HARDNESS, DUROMETER**: A 40-50
- **WATER ABSORPTION, %**: < 2%
  - 24 hour immersion at 22°C
- **Linear Shrinkage, %**: 4%
- **TEMPERATURE RANGE**: -45°C to +145°C

The values noted in this technical data sheet are typical properties. They are not intended to be used as product specifications.
**CURE DATA / GUIDELINES** [Glass substrates, 0.002-0.004 inch (0.050-0.100mm) bond gap, time in seconds]

<table>
<thead>
<tr>
<th>System</th>
<th>Wavelength</th>
<th>Power Density</th>
<th>Cure Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honle Bluepoint LED, Spot Curing System</td>
<td>405 nm @ 2000 mW/cm²</td>
<td>&lt;1 second</td>
<td></td>
</tr>
<tr>
<td>Honle Spot 100 LED, Flood Curing System</td>
<td>405 nm @ 200 mW/cm²</td>
<td>1 second</td>
<td></td>
</tr>
<tr>
<td>Honle UV Flood Curing System</td>
<td>320-450 nm @ 500 mW/cm²</td>
<td>1 second</td>
<td></td>
</tr>
</tbody>
</table>

Note: Actual cure rate in a production environment is dependent upon light source intensity, bond line distance from the light source, bond line gap or required depth of cure, and percentage of light transmission through the substrate covering the bond line. Please consult with Tangent Applications Engineering for assistance with curing equipment selection and process optimization.

**PACKAGING OPTIONS** - Standard packaging for this product includes 10 and 30 gram syringes, 300 gram cartridges, one kilogram bottles, and 17 kilogram pails. Other packaging options may be available upon request.

**STORAGE** – This is light sensitive material. Containers must remain covered when not in use.

Minimize exposure of uncured material to daylight, artificial light, and UV light during storage and handling. Store uncured product in its original, closed container in a dry location. Unless otherwise indicated on the product label, optimal storage temperatures are 10 to 30°C, (50 to 86°F). Any material removed from the original container must not be returned to the container as it could be contaminated. Tangent Industries cannot assume responsibility for products that were improperly stored, contaminated, or repackaged into other containers.

**HANDLING AND CLEAN-UP** – For safe handling information, consult this product’s Material Safety Data Sheet (MSDS) prior to use. Uncured material may be wiped away from surfaces with organic solvents. Do not use solvents to remove material from eyes or skin!

**USING THE PRODUCT** – Prior to dispensing, ensure that each surface coming in contact with this product is clean and free of grease, mold release, or other contaminants. Dispense directly from the package, or utilize appropriate dispensing equipment that is compatible with light-curable adhesives and coatings. Fluid lines and dispense tips must be 100% light blocking. Curing stations should be equipped with air exhaust systems to evacuate vapors and heat generated during the curing process. After curing, this product must be allowed to cool to ambient temperature before testing the product’s performance.

**THE VALUES NOTED IN THIS TECHNICAL DATA SHEET ARE TYPICAL PROPERTIES AND ARE NOT MEANT TO BE USED AS PRODUCT SPECIFICATIONS.** The information contained in this data sheet is believed to be accurate and is provided for information only. Tangent Industries, Inc. makes no representation or warranties of any kind concerning this information. It is the user’s responsibility to determine the suitability of this product for any intended use. Tangent Industries, Inc. does not assume responsibility for test or performance results obtained by the user. The user assumes all risk and liability connected with the use of this product. The user should adopt such precautions and use guidelines as may be advisable for the protection of property and persons against any hazards that may be involved in this product’s handling or use. Tangent Industries, Inc. specifically disclaims any liability for consequential or incidental damages of any kind arising from the handling or use of this product. The information contained in this Technical Data Sheet offers no assurance that the product use, application, or process will not infringe on existing patents or licenses of others. Nothing in this Technical Data Sheet transfers or grants license for the use of any patents, trade secrets, intellectual property, or confidential information that is the property of Tangent Industries, Inc.