



Technical Data Sheet

Light-Curable Adhesives, Sealants, and Masks

Product 7989

High strength, LED light curable polycarbonate bonding adhesive for medical device assembly.

Tangent Product 7989 is a solvent-free, UV light curable adhesive. It is well suited for bonding polycarbonate, PVC, PUR, ABS, and SAN, as well as other dissimilar materials including stainless steel, ceramic and glass. When properly cured, Product 7989 is clear, tack-free, and possesses good resistance to moisture. This product is well suited for environments of recurring thermal cycling. Product 7989 cures very rapidly with broad spectrum UV lamps, (320 -420nm) and monochromatic LED light sources. LED output of 365nm is recommended for curing this adhesive. Product 7989 has passed the testing required for USP Class VI biocompatibility approval, and is compatible with common sterilization methods including gamma irradiation, EtO, and limited autoclave.

UNCURED PROPERTIES

COMPOSITION	Aliphatic Urethane Acrylate / Monomer Blend
VISCOSITY	3000 - 5000cP [Brookfield 25° C., 30 RPM]
APPEARANCE	Clear to slight yellow liquid
SPECIFIC GRAVITY	1.1 - 1.3 at 25° C.
REFRACTIVE INDEX, n_d^{20}	1.49
FLASH POINT	200° F.
TOXICITY	Refer to Material Safety Data Sheet
SHELF LIFE	One year

CURED PROPERTIES

SHORE HARDNESS, DUROMETER	D 45-55
WATER ABSORPTION, %	
24 hour immersion at 25° C	< 5%
TEMPERATURE RANGE	- 40° C to 135° C
GLASS TRANSITION TEMPERATURE	37 - 47 DSC [°C]
COEFFICIENT OF LINEAR EXPANSION	
below Tg	165
above Tg	392
LINEAR SHRINKAGE	< 3%

**THE VALUES NOTED IN THIS TECHNICAL DATA SHEET ARE TYPICAL PROPERTIES.
THEY ARE NOT INTENDED TO BE USED AS PRODUCT SPECIFICATIONS.**

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OTHER CURED PROPERTIES

BIOCOMPATIBILITY TESTING, USP Class VI (certificate copies on file)

Cytotoxicity	Pass
Irritation/Intracutaneous	Pass
Acute Systemic Toxicity	Pass
Implantation-14 day	Pass

CURE DATA / GUIDELINES [Glass substrates, 0.002-0.004 inch (0.050-0.100mm) bond gap, time in seconds]

Honle Bluepoint LED	Spot Curing System, 365 nm,	2000 mW/cm ²	<1 second
Honle Spot 100 LED	Flood Curing System, 365 nm,	250 mW/cm ²	1-2 seconds
Honle Bluepoint 4	Spot Curing System, 320-450 nm,	2000 mW/cm ²	<1 second

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.

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.

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