



Technical Data Sheet

Light-Curable Adhesives, Sealants, and Masks

Product 5140

LED curable, Medical Device adhesive for flexible assembly applications.

Tangent Product 5140 is an LED curable material that adheres to a variety of substrates including many plastics, metal, ceramic and glass. The cured product is extremely flexible, demonstrates outstanding elongation and memory. Bonds prepared using 5140 are clear and highly resistant to moisture and yellowing. The high adhesion and low durometer of this product makes it ideally suited for applications involving thermal cycling. Product 5140 cures extremely rapidly with broad spectrum UV and visible light, 320-450 nm. High intensity is not required. It also cures rapidly with monochromatic LED systems possessing output of 365nm or 405nm. LED systems produce cooler curing temperatures and are better suited for heat sensitive substrates. Product 5140 has passed the biocompatibility testing required for USP Class VI approval, and is compatible with commonly used sterilization methods including, gamma irradiation, ethylene oxide, and limited autoclave.

UNCURED PROPERTIES

COMPOSITION	Urethane Acrylate / Monomer Blend
VISCOSITY	250-500 cps at 25° C.
APPEARANCE	Clear liquid with slight yellow tint
SPECIFIC GRAVITY	1.1 -1.2 at 25° C.
FLASH POINT	Greater than 93° C.
TOXICITY	Refer to Material Safety Data Sheet
SHELF LIFE	One year

CURED PROPERTIES

SHORE HARDNESS, DUROMETER	A 45-65
WATER ABSORPTION, %	
24 hour immersion at 25° C	1%
TEMPERATURE RANGE	-50° C – 145° C
ELONGATION AT BREAK, ISO527-3	340%
TENSILE AT BREAK, ISO527-3	3.5 Mpa (516psi)
GLASS TRANSITION TEMPERATURE DSC [°C]	1 -10
COEFFICIENT OF LINEAR EXPANSION BELOW T _g	116
COEFFICIENT OF LINEAR EXPANSION ABOVE T _g	625
LINEAR SHRINKAGE [%]	4%

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

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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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	405 nm @ 2000 mW/cm ²	1 second
Honle Spot 100 LED, Flood Curing System	405 nm @ 250 mW/cm ²	1 second
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.

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.

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