



Technical Data Sheet

Light-Curable Adhesives, Sealants, and Masks

**Product
4731-VT-HC**

LED curable, flexible medical device adhesive with secondary heat cure for bonding dissimilar substrates.

Tangent Product 4731-VT-HC is a UV / Visible light curable material that is very flexible when cured. This product adheres to many plastics and dissimilar materials including glass, stainless steel, and ceramic. The "VT" viscosity designation means when in its liquid state, this product will demonstrate very little movement after dispensing. (Several other viscosity variations are available for this product family, including a non-migrating gel.) The cured product is clear, and resistant to yellowing. Product 4731-VT-HC will cure to a tack-free surface. It is extremely moisture resistant, with excellent resistance to the stresses imparted by thermal cycling. This product cures rapidly with low intensity UV light, as well as monochromatic LED systems. Recommended LED wavelengths are 365 and 405 nm. Product 4731-VT-HC also contains a latent catalyst that permits curing with heat to facilitate adhesive cure in shadowed areas and internal cavities. Product 4731-VT-HC has been formulated to pass USP Class VI biocompatibility testing.

UNCURED PROPERTIES

COMPOSITION	Urethane Acrylate / Monomer Blend
VISCOSITY	8000 – 16,000 cP at 25° C.
APPEARANCE	Clear liquid with slight 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	D 35 - 50
WATER ABSORPTION, % 24 hour immersion at 22° C	1%
TEMPERATURE RANGE	-40° C to 140° C

**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]

UV Light Curing

Honle Bluepoint LED, Spot Curing System	405 nm @ 2000 mW/cm ²	1 second
Honle Spot 100 LED, Flood Curing System	405 nm @ 200 mW/cm ²	1-2 seconds
Honle Bluepoint 4, UV Spot Curing System	320-450 nm @ 2000 mW/cm ²	1 second

Thermal Curing

<u>Temperature</u>	<u>Time</u>
100°C (212°F)	60 minutes
121°C (250°F)	30 minutes
150°C (300°F)	10 minutes

Note: Actual UV 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. Equally, heat cure times are a guideline and may vary based on part size, configuration, adhesive volume, and temperature control. 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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