



# Technical Data Sheet

Light-Curable Adhesives, Sealants, and Masks

## Product 4731-VT

**LED light curable, flexible medical device assembly adhesive for bonding dissimilar substrates.**

**Tangent Product 4731-VT** is a UV / Visible light curable material that is very flexible after it is cured (hardened). 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.) When properly cured, Product 4731-VT is clear, and resistant to yellowing. Product 4731-VT 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 lamps, as well as monochromatic LED systems. Recommended LED wavelengths are 365 and 405 nm. Product 4731, (viscosity 900-1500 cP), has passed USP Class VI biocompatibility requirements. Product 4731-VT is the same composition as Product 4731 with additional bio-inert filler added to increase viscosity. Product 4731-VT is compatible with commonly used sterilization methods including, gamma irradiation, ethylene oxide, and limited autoclave.

### UNCURED PROPERTIES

COMPOSITION	Urethane Acrylate / Monomer Blend
VISCOSITY	8000 – 14,000 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.**

Tangent Industries, Inc.  
227 Rockwell Street  
PO Box 525  
Winsted CT USA 06098-0525

Phone 860-738-7449  
Fax 860-738-2961  
[info@tangentindinc.com](mailto:info@tangentindinc.com)  
[www.tangentindinc.com](http://www.tangentindinc.com)

**OTHER CURED PROPERTIES****BIOCOMPATIBILITY TESTING, USP Class VI**

Product 4731, (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	405 nm	2000 mW/cm <sup>2</sup>	1 second
Honle Spot 100 LED, Flood Curing System	405 nm	250 mW/cm <sup>2</sup>	2 seconds
Honle Bluepoint 4, Spot Curing System	320-450nm	2000 mW/cm <sup>2</sup>	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.

**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, tradeseecrets, intellectual property, or confidential information that is the property of Tangent Industries, Inc.