



# Technical Data Sheet

Light-Curable Adhesives, Sealants, and Masks

## Product 7041-F

### Fast curing, fluorescing LED curable Medical Device Adhesive for Needle Bonding. Bonds Polycarbonate, ABS, PVC, PMMA, PET, Glass, Stainless Steel.

**Tangent Product 7041-F** is a low viscosity, solvent-free, LED light curable adhesive that forms resilient, high strength bonds between many plastics and dissimilar materials such as stainless steel, glass, and aluminum. Bonds prepared with 7041-F are clear, hard, and highly resistant to moisture.

The low viscosity of this product makes it particularly well suited for fast filling of deep wells, and also for applications requiring wicking or capillary action. Product 7041-F cures extremely quickly with broad spectrum UV lamps (320-450 nm), as well as monochromatic LED lamps. Optimal LED curing is achieved using LED systems with outputs of 365nm or 405nm. In many cannula to hub bonding applications, full cure can be secured in less than one second exposure with an LED. Product 7041-F fluoresces bright blue when exposed to low intensity UV light, (black light)). It is highly compatible with high speed, automated vision inspection systems. Product 7041-F has been formulated to pass the testing required for USP Class VI biocompatibility approval, and is compatible with common sterilization methods including gamma irradiation, EtO, and limited autoclaving.

#### UNCURED PROPERTIES

COMPOSITION	Urethane Acrylate / Monomer Blend
VISCOSITY	50-90 cP [MPa], Brookfield LVT, 25 °C, 62/60rpm
APPEARANCE	Slightly yellow liquid
SPECIFIC GRAVITY	1.05 at 25° C [g/cm <sup>3</sup> ]
REFRACTIVE INDEX	1.47 [ n <sub>D</sub> <sup>20</sup> ]
FLASH POINT	200° F [93° C]
TOXICITY	Refer to Material Safety Data Sheet
SHELF LIFE	12 Months

#### CURED PROPERTIES

SHORE HARDNESS, DUROMETER	D 70-80
WATER ABSORPTION, 24 hour immersion at 25° C	3%
TEMPERATURE RANGE	-40° C – 145° C
LINEAR SHRINKAGE	< 4 %
GLASS TRANSITION TEMPERATURE	32-42° C
COEFFICIENT OF LINEAR EXPANSION	
Below T <sub>g</sub>	83
Above T <sub>g</sub>	386
YOUNG'S MODULUS	7.977 PSI [550 MPa]

**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 7041, non-fluorescing version, 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 4 LED, Spot Curing System	405 nm @ 2000 mW/cm <sup>2</sup>	<1	second
Honle Spot 100 LED, Flood Curing System	405 nm @ 200 mW/cm <sup>2</sup>	1 - 2	seconds
Honle Bluepoint 4, Spot Curing System	320-450 nm @ 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.

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