

BIOCOMPATIBLE STRUCTURAL ADHESIVE FOR MEDICAL DEVICE ASSEMBLY

PRODUCT DESCRIPTION

Incure Cyro-Weld™ 5013F is an advanced biocompatible adhesive exclusively formulated for critical medical device manufacturing. This exceptional structural resin delivers unmatched joint integrity and phenomenal dimensional stability during dynamic stress. The precision light-curing mechanism empowers manufacturers with infinitely controllable assembly alignment and processing speeds. It effortlessly withstands extreme clinical environments, aggressive chemical disinfectants, and harsh biological fluids. It fluoresces vividly under UV black light to enable high-speed automated visual inspection. This Cyro-Weld™ 5013F meets ISO 10993-5 biocompatibility standards while ensuring validated stability under EtO (ISO 11135) and Gamma (ISO 11137) sterilization, with Tg -dependent reliability for steam autoclave performance.

PRODUCT HIGHLIGHTS

- Ultra-Fast Curing Time
- High Tensile Strength
- Built-In UV Tracer
- Superior Durability
- Easy Dispensing

TYPICAL APPLICATIONS

- Sensor Potting
- PCB Conformal Coating
- Wire Tacking
- Component Encapsulation
- Structural Bonding

UNCURED PROPERTIES

Chemical Type	Urethane Acrylate			
Liquid Appearance	Clear, Fluorescing			
Density, g/ml	1.05	Refractive Index	1.48	@20°C
Surface Energy (Liquid), dynes/cm	38 / 40	Toxicity	Low	
¹ Viscosity, cP	850 to 1,700	Spindle	3 @20rpm	

¹ Viscosity (cP) taken at 25°C - Other viscosities are available upon request with a small lab fee.
Email support@uv-incure.com or your nearest local distributor for more information.

CURED PROPERTIES

Shore Hardness, Durometer	D72 to D82	ASTM 2240
Linear Shrinkage, %	2.20	ASTM D2566
Water Absorption at 24hrs, %	0.28	² ISTM D570
Tensile (PSI)	PC-PC 6,900 [^] SS-SS 3,200	ASTM 638
	S-S 3,000 AL-AL 2,800	
Surface After Full Cure		² ISTM D189
Elongation at Break, %	35	ASTM 638
Temperature Resistance, °C	-55 to 125	² ISTM D366
Service Temperature, °C	-55 to 80	² ISTM D366
Young's Modulus of Elasticity, PSI	253,800	³ ASTM 638
Linear CTE (α_1 & α_2), ppm/°C	55 / 160	² ISTM D696
Glass Transition Temp (Tg), °C	75	² ISTM D696

² ISTM D696 - refers to Incure Standard Test Method

³ ASTM 538 Young's Modulus test speed @5mm/min for rigid and semi-rigid materials, @50mm/min for non-rigid materials, unless otherwise specified.

RECOMMENDED UV CURE SCHEDULE (FULL CURE)

Full Cure Exposure Time		UVA	UVB	UVC	UVV
F200P (Between Glass Slides)	mW/cm ²	223	56	4	215
Exposure Time (s)	5	mJ/cm ²	1,115	280	1,075
F200P @3.75" Dist	8	mW/cm ²	223	56	4
Belt Speed (ft/min)	7	mJ/cm ²	1,784	448	32
F500 @3.0" Dist	6	mW/cm ²	436	127	12
Belt Speed (ft/min)	6	mJ/cm ²	2,616	762	72
S20 w/4-Pole L/G @0.4" Dist	mW/cm ²	3,000	530	50	3,400
Exposure Time (s)	2	mJ/cm ²	6,000	1,060	100
L9000 LED Spot @0.67" Dist	mW/cm ²	2,800	42	12	102
Exposure Time (s)	3	mJ/cm ²	8,400	126	36
					306

Cure times on 8mm ϕ adhesive sample. Belt speeds using C9000-F200Px1AB (Flood) and C9000-F500x1AC (Focused Beam) conveyors for area curing. Please consult IncureLab™ for any other requirements.

UV INTENSITY REFERENCE TABLE

Incure UV Curing Lamp Model	⁴ Curing Distance vs UV Intensity					
Spot Curing (Diameter)	0.5" (12.6)	1" (25.4)	1.5" (38)	2" (50.8)	2.5" (63.5)	3" (76.2)
S20 ARC (mW/cm ²) / (ϕ mm)	1,400 (3)	1,500 (4)	650 (6)	360 (8)	240 (10)	175 (12)
L9000 (mW/cm ²) / (ϕ mm)	7,500 (9)	5,000 (10)	2,300 (17)	1,200 (20)	700 (25)	450 (30)
Flood/Focus Beam (Area)	UV Intensity (mW/cm ²)					
F200P ARC Flood (6" x 8")	325	280	245	215	190	165
F400 ARC Flood (4" x 4")	860	570	440	345	270	215
F500 ARC Focused (3" x 5")	1,040	685	530	415	325	260
L1044-365 LED Flood (4" x 4")	2,675	2,380	1,900	1,625	1,430	1,280
L1044-405 LED Flood (4" x 4")	2,950	2,625	2,150	1,900	1,650	1,450

⁴ Curing Distance is defined by the tip of light-guide or base of lamp housing to the bond area. All values are nominal with $\pm 10\%$ variation, with LED Flood Static Uniformity at $\pm 78\%$ and Dynamic Uniformity at $\pm 90\%$. Recommended curing parameters in grey

SHELF-LIFE, STORAGE, USE AND HANDLING OF THIS PRODUCT

Shelf-Life of this unopened product is a minimum of 12 from date of manufacture. Avoid direct exposure of bottle to visible light at all times. Containers should remain covered when not in use. Product should be stored in a dark cool place of 10°C to 32°C. Transfer of product into other packages void all warranties. Users should ensure all bonding surfaces are free of grease, mould release, or any contaminants, as bonding performance will be compromised. All tests for cured bonds should be carried out at ambient temperature. Organic solvents, such as IPA, may be used to wipe away uncured material from surfaces. For safe handling of this product, please read Material Safety Data-sheet (MSDS) prior to use.

EtO and GAMMA STERILIZATION (Not Applicable for this Product)

Incure medical products are formulated to withstand standard sterilization methods, such as EtO and Gamma Radiation of 25 to 50 kGrays (cumulative). Enhanced moisture and thermal resistance ensure excellent adhesion strength after one steam autoclave cycle. Depending on bond design and application structure, users should test specific assemblies after sterilization. Consult Incure Support if devices are subjected to multiple sterilization cycles.

NOTE

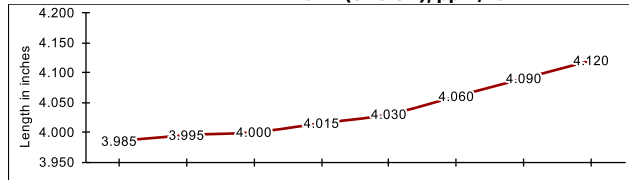
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SECONDARY HEAT CURE SCHEDULE

Continuous Oven Bake

Not Applicable

LINEAR CTE (α_1 & α_2), ppm/°C



*TENSILE STRENGTH VS TEMPERATURE

*Not Applicable for Uni-Prime™ 338 and ActiF™ 398

