

MASTER BOND APPLICATION SELECTOR GUIDE FOR ELECTRO-OPTIC, FIBER-OPTIC & LASER APPLICATIONS

*Selected Adhesives, Sealants, Coatings & Castings
Partial Listing Only — Other Grades Available*

The Master Bond product line includes both one and two component epoxy resin compounds and one component UV curable compositions. The epoxy resin compounds are all specially formulated to maximize resistance to liquid water, water vapor and other adverse environments. The ultraviolet compositions cure tack free in the presence of air. All Master Bond products have been carefully

processed to exclude such potentially objectionable contaminants as chlorine and other halogens as well as sodium and related elements. They provide innovative solutions to the many processing problems of these industries and virtually eliminate quality control difficulties caused by corrosion and other environmentally induced conditions.

Typical applications range from bonding and

potting fiber-optic cables, connectors and terminations, and upgrading the vibration and shock resistance of electro-optic assemblies. Other applications include cementing and coating optical parts, potting LED devices, optical replications, bonding ferrules and connectors, and coating or encapsulating a wide variety of electro-optic and laser components.

Two Component Epoxies —

Master Bond Grade	Color	Mix Ratio by weight	Mixed Viscosity RT, cps	Spectral Transmittance % (3100-9000 Å)	Index of Refraction, nD	Set-Up Time Minutes, RT	Cure Schedule Temp/Time, °F	Service Temp Range, °F	Applications
EP21LSCL	"A" clear "B" clear	100/60	1,000-1,500	>97	1.56	30-35	24 hrs @ RT 1 hr @ 250°F	-65 to +250 °F	Transparent, low viscosity, non-yellowing version of EP21LV. Used for bonding, sealing, coating and potting.
EP21LV	"A" clear "B" amber	100/100	6,000-8,000	>90	1.55	60-90	24-48 hrs @ RT 1-2 hrs @ 200°F	-60 to +250 °F	Easy to use with excellent physical and electrical properties. For bonding, sealing, coating and encapsulation.
EP21TDC-2	"A" clear "B" amber	33/100	70,000-80,000	not applicable	not applicable	75-90	72 hrs @ RT 2-3 hrs @ 200°F	4 °K to +250 °F	Highly flexible system with exceptional thermal and mechanical shock resistance. Suitable for cryogenic applications.
EP21TDCS	"A" silver "B" silver	100/100	smooth paste	not applicable	not applicable	30-40	24-36 hrs @ RT 1-2 hrs @ 200°F	4 °K to +250 °F	High performance, silver filled, toughened system with excellent bond strength. Cryogenically serviceable.
EP21TP-2	"A" clear "B" amber	100/100	1,500-2,000	90	1.58	30-45	48-60 hrs @ RT 1-2 hrs @ 200°F	-60 to +250 °F	For potting and encapsulation. Transmits light over a wide wavelength range including IR.
EP29LPSP	"A" clear "B" clear	100/65	700	>97	1.55	> 6 hrs	5-7 days @ RT 8-12 hrs @ 150 °F	4 °K to +250 °F	Transparent system. NASA low outgassing approved. Outstanding low temperature serviceability. Withstands cryogenic shocks.
EP30	"A" clear "B" clear	100/25	400-500	>97	1.56	25-30	18-24 hrs @ RT 1-2 hrs @ 200°F	-60 to +250 °F	Widely used for bonding fibers to connectors and/or fibers into ferrules. Easily polished. Also for optical replications. Low shrinkage.
EP30-1	"A" clear "B" clear	100/25	1,500-1,600	>97	1.55	20-35	24-48 hrs @ RT 2 hrs @ 200°F	-60 to +250 °F	Lower viscosity, slightly toughened system for bonding fibers to connectors and for casting optically clear components. Easily polished.
EP30-3	"A" clear "B" clear	100/33	5,000-6,000	>97	1.57	12-18 hrs	30-45 min @ 160 °F plus 2-3 hrs @ 300 °F	-60 to +435 °F	Transparent, high temperature and chemically resistant version of EP30. For optical potting and bonding. Requires heat cure.

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Master Bond Grade	Color	Mix Ratio by weight	Mixed Viscosity RT, cps	Spectral Transmittance % (3100-9000 Å)	Index of Refraction, nD	Set-Up Time Minutes, RT	Cure Schedule Temp/Time, °F	Service Temp Range, °F	Applications
EP30-4	"A" clear "B" clear	100/50	2,000	>97	1.53	4-10	8-12 hrs @ RT	-60 to +250 °F	Very fast curing, transparent system with superior non-yellowing properties. Offers superb spectral transmission in thin sections.
EP30AO	"A" off white "B" clear	100/10	15,000-20,000	not applicable	not applicable	30-40	24-36 hrs @ RT 1-2 hr @ 200 °F	-60 to +250 °F	Low viscosity, thermally conductive system. Ideal for potting and encapsulation.
EP30DP	"A" light amber "B" clear	100/10	3,000-4,000	90	1.55	60-90	48 hrs @ RT 2-3 hrs @ 200 °F	4 °K to +250 °F	Toughened system. For sealing, potting and encapsulating. Allows for repairability.
EP30HT	"A" clear "B" clear	100/25	35,000-45,000	>97	1.56	25-35	24 hrs @ RT 1-2 hrs @ 200 °F	-60 to +400 °F	Excellent resistance to elevated temperatures and high humidity. Used for bonding fibers to connectors and for glass fiber potting.
EP30LTE	"A" black "B" clear	100/10	15,000-20,000	not applicable	not applicable	30-40	24-48 hrs @ RT 2-3 hrs @ 200 °F	-60 to +250 °F	Exceptionally low coefficient of expansion system. For potting optically sensitive components.
EP37-3FLF	"A" clear "B" clear	100/100	1,500-1,800	>97	1.55	120-150	48-72 hrs @ RT 3 hrs @ 200 °F	4 °K to +250 °F	Highly flexible, transparent system. Ideal for protecting sensitive and fragile components.
EP39-2	"A" clear "B" clear	100/50	2,000-3,000	>97	1.55	30-35	4-6 hrs @ RT	-60 to +300 °F	Fast curing adhesive/sealant. Used for potting optically clear components and for bonding fibers into ferrules. Easy to polish.
EP41S-1	"A" clear "B" amber	100/30	6,000-7,000	>85	1.56	25-30	24-36 hrs @ RT 1-2 hrs @ 200 °F	-60 to +300 °F	Special high performance epoxy with outstanding resistance to organic solvents, alcohols and fuels.
EP41S-4	"A" black "B" clear	100/25	3,000-4,000	not applicable	not applicable	15-20	24 hrs @ RT 1-2 hrs @ 200 °F	-60 to +300 °F	Chemically resistant to chlorinated solvents and acids. For high security potting and for encapsulating optically sensitive components.
EP42HT	"A" clear "B" amber	100/40	8,000-10,000	>80	1.61	35-45	24-36 hrs @ RT 2-3 hrs @ 150 °F	-60 to +435 °F	USP Class VI certified. Resists repeated chemical, ETO, radiation and steam sterilization. For bonding, potting & sealing.
EP45HT	"A" clear "B" brown	100/30	40,000-50,000	>80	1.60	12-24 hrs	1 hr @ 150 °F plus 2-3 hrs @ 300 °F	-80 to +500 °F	High temperature, chemically resistant system. For bonding fiber optic cable jacket connections. Requires heat cure.
EP62-1	"A" clear "B" tan	100/5 or 100/10	8,000-10,000	>90	1.56	8-10 hrs	4-6 hrs @ 150 °F 2-3 hrs @ 200 °F	-60 to +300 °F	Long working life. High temperature and chemical resistance. For glass fiber potting and bonding fibers to connectors.
EP65HT-1	"A" clear "B" dark purple	100/10	60,000-70,000	not applicable	not applicable	3-5	20-30 min @ RT	-60 to +400 °F	Ultra-fast curing adhesive. Resists high temperatures. High bond strength. NASA low outgassing approved.
EP112LS	"A" clear "B" clear	100/80	500-600	>90	1.50	>24 hrs	2-3hrs @ 200 °F plus 6-8 hrs @ 300 °F	-60 to 500 °F	High temperature resistant, non-yellowing system for potting and encapsulating optically clear components. Requires heat cure.

One Component Epoxies —

Master Bond Grade	Color	Viscosity RT, cps	Spectral Transmittance % (3100-9000 Å)	Index of Refraction, nD	Cure Schedule Temp/Time, °F	Service Temp Range, °F	Applications
EP3HT	yellow to brown	>250,000	not applicable	not applicable	5-10 min @ 300 °F 20-30 min @ 250 °F	-60 to 400 °F	Rapid curing, heat resistant, general purpose adhesive, sealant and encapsulant. For coating and potting optically sensitive components.
EP19HT	amber clear	600	>92	1.56	45 min @ 300 °F 60 min @ 250 °F	-60 to 400 °F	Low viscosity sealant, coating and laminating epoxy. Excellent adhesion to glass. Good optical transmission properties.
Supreme 10AOHT	light gray	paste	not applicable	not applicable	45 min @ 300 °F 60 min @ 250 °F	-100 to 400 °F	Thermally conductive, electrically insulative adhesive/sealant. Good electrical insulation properties.
Supreme 10HTS	silver	paste	not applicable	not applicable	45 min @ 300 °F 60 min @ 250 °F	4 °K to 400 °F	Electrically conductive, silver filled system with very low resistance (<1 milliohm). Passes NASA low outgassing tests.
FL901S	silver	film	not applicable	not applicable	1 hr @ 250 °F 30-40 min @ 300 °F	-100 to 400 °F	Electrically conductive film adhesive/sealant. Low resistance. Standard size is 2" x 6" x 3 mils thick. Other sizes and die/laser cuts available.

UV Curables —

Master Bond Grade	Color	Viscosity RT, cps	Spectral Transmittance % (3100-9000 Å)	Index of Refraction, nD	Cure Schedule*	Service Temp Range, °F	Applications
UV10	light amber clear	300-400	>97	1.557	5-30 sec	-60 to 250 °F	Low viscosity general purpose adhesive, sealant, coating and encapsulant. Cures rigid up to 1/8" deep. Excellent resistance to water and other chemicals. For bonding fibers to connectors.
UV10TK	light amber clear	30,000-40,000	>97	1.553	10-45 sec	-60 to 300 °F	Higher viscosity version of UV10. Enhanced temperature and chemical resistance. Good dimensional stability. Low shrinkage upon cure. Bonds well to most plastics, metals and glass.
UV11-3	clear	60	>97	1.527	15-30 sec	-60 to 250 °F	Ultra-low viscosity, spin coatable, scratch resistant coating. Used with glass, acrylics, polycarbonates and other plastics.
UV14-3	clear	25,000-30,000	>97	1.450	10-30 sec	-60 to 250 °F	Flexible adhesive, sealant and encapsulant. Bonds well to a wide variety of substrates. Easily removable by conventional solvents. Possesses a very low index of refraction (1.450).
UV15	slight amber clear	120-150	>97	1.517	10-45 sec	-60 to 350 °F	Ultra-thin adhesive, sealant & coating. Features high temperature stability, superior chemical resistance and low shrinkage. Frequently used for optical replication. Post curing by heat enhances properties.
UV15-7	clear	1,400-1,800	>97	1.550	5-30 sec	-60 to 300 °F	Excellent adhesive, sealant, coating and encapsulant. Cures over 1/8" deep. Superb non-yellowing properties. Widely used for potting optically clear components and for bonding fibers to ferrules.
UV15-7DC	clear	2,500-5,000	>97	1.546	5-30 sec	-60 to 300 °F	Dual cure version of UV15-7. Will cure in shadowed out areas by adding heat (250 °F). Excellent physical and electrical properties. Bonds well to glass, metals and most plastics.
UV15-7LRI	clear	6,000-10,000	>97	1.481	5-25 sec	-60 to 250 °F	Special low index of refraction (1.481). Used as an adhesive, sealant, and coating. Good mechanical properties. Excellent spectral transmission in thin bond lines. Superior thermal cycling properties.

*The cure speed of UV systems depends on depth of cure, the intensity of UV light source and the distance of the UV light source from the material being cured.

UV Curables —

Master Bond Grade	Color	Viscosity RT, cps	Spectral Transmittance % (3100-9000 Å)	Index of Refraction, nD	Cure Schedule*	Service Temp Range, °F	Applications
UV15-7SP4	clear	800-1,500	>97	1.531	5-20 sec	-80 to 250 °F	Highly flexibilized version of UV15-7. Outstanding thermal and mechanical shock resistance. Excellent thermal cycling capabilities. Unsurpassed non-yellowing properties.
UV15-7TK1A	translucent	paste	not applicable	not applicable	15-45 sec	-60 to 300 °F	Screen printable, paste version of UV15-7. Good dimensional stability. Low shrinkage. Exceptionally good adhesion to glass and plastics. Often used for sealing perimeters of liquid crystal displays.
UV15X-2	clear	6,000-8,000	>97	1.504	5-30 sec	-80 to 250 °F	Semi-flexible adhesive, sealant and encapsulant. Cures over 1/4" deep. Bonds very well to metals, most plastics and glass. Often used for glass fiber potting or lens bonding. Excellent non-yellowing properties.
UV15X-2GT	translucent	paste	not applicable	not applicable	15-45 sec	-80 to 250 °F	Easily processable glob top. Excellent moisture resistance. Combines superior durability and temperature resistance along with superb thermal cycling and shock resistance properties.
UV15X-5	clear	120,000	>97	1.498	5-25 sec	-80 to 250 °F	Highly flexible adhesive, sealant & coating. Superb peel strength and abrasion resistance. Excels in withstanding shock, vibration and thermal cycling. Widely used where low stress properties are paramount.

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Miscellaneous —

Master Bond Grade	Type of System	Color	Viscosity RT, cps	Spectral Transmittance % (3100-9000 Å)	Index of Refraction, nD	Cure Schedule Temp/Time, °F	Service Temp Range, °F	Applications
MasterSil 151	2 part silicone	"A" clear "B" clear	1,200-1,500	>97	1.43	24-48 hrs @ RT 2-3 hrs @ 200 °F	-75 to +400 °F	Addition type curing system. Optically clear. Low outgassing. Offers ambient or elevated temperature cures. Widely used for potting optical components. Offers easy repairability.
MasterSil 415	1 part silicone	clear	paste	>97	1.43	12-24 hrs @ RT	-185 to +400 °F	Fast setting, optically clear system for bonding and sealing. Superb light transmission. Superior flexibility at lower temperatures.
MB600	modified silicate solution	clear	400-420	>97	1.51	15-45 min @ RT 10-20 min @ 100-120 °F	-40 to +1500 °F	For temporary bonding. Easily removed by water. Offers exceptionally high temperature resistance. Excellent adhesion to glass, metals and most plastics.

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