

3M™ Epoxy and Hot Melt Adhesives have the characteristics and performance profiles to meet most fabrication and assembly application requirements.

3M Epoxy and Hot Melt Specifications [Ⓢ]

	Typical Physical Properties												Typical Thermal Properties						Typical Electrical Properties					Comments
	Product	Base Resin	Volume Mix Ratio (B:A)	Viscosity (cps)	Bonding Range Set Time	Mixed Work Life @ 23°C	Handling Strength @ 23°C	Full Cure Schedule	Shore D Hardness	Elongation (%)	Shear Strength (psi)	180° Peel Strength (piw)	Total [Ⓢ] Outgassing (g/g)	Siloxane [Ⓢ] Outgassing (g/g)	Extractable [Ⓢ] Chloride (g/g)	Glass Transition Temperature (Tg)	Thermal Conductivity (btu-ft./sq.ft.-hr.°F)	Thermal Coefficient of Expansion (in./in./°C)	Dielectric Constant (1 KHZ @ 23°C)	Dielectric Strength (volts/mil.)	Dissipation Factor (1 KHZ @ 23°C)	Volume Resistivity (ohm-cm. @ 23°C)	Electrolytic Corrosion to Copper	
Scotch-Weld Two-Part Epoxy Adhesives	DP-100	Epoxy	1:1	B-12,000 A-14,000 @ 23°C	NA	3-5 min.	15-20 min.	24-48 hr. @ 23°C or 1-2 hr. @ 65°C	81	2	1500 Aluminum	2 Aluminum	•	•	•	33°C @ 46°C	.107	60 x 10 ⁻⁶ (-50°C to 30°C)	6.0 (12 mil.)	860	.043	3.5 x 10 ¹²	Poor	UL 94 HB Meets corrosion resistance requirements Mil-S-46163
	DP-100 NS	Epoxy	1:1	B-100,000 A-90,000 @ 23°C	NA	3-5 min.	15-20 min.	24-48 hr. @ 23°C or 1-2 hr. @ 65°C	80	2	1500 Aluminum	2 Aluminum	•	•	•	34°C	.106 @ 45°C	29 x 10 ⁻⁶ (-50°C to 30°C) 149 x 10 ⁻⁶ (50°C to 110°C)	•	1100 (12 mil.)	•	2.2 x 10 ¹⁴	Poor	Low flow version of DP-100
	DP-100 FR	Epoxy	1:1	B-75,000 A-80,000 @ 23°C	NA	4-8 min.	15-20 min.	24-48 hr. @ 23°C or 1-2 hr. @ 65°C	87	2	1500 Aluminum	2 Aluminum	•	•	•	44°C	.111 @ 45°C	60 x 10 ⁻⁶ (-50°C to 30°C) 125 x 10 ⁻⁶ (80°C to 100°C)	4.7	•	.016	1.7 x 10 ¹⁴	•	UL 94 V-O CFR 25.853 Paragraph A
	DP-100 Plus Clear	Epoxy	1:1	B-7,000 A-10,000 @ 25°C	NA	3-4 min.	20 min.	48 hours @ 23°C	83	75	3500 Aluminum	13 Aluminum	•	•	•	29°C	.077	93 x 10 ⁻⁶ (5°C to 20°C) 182 x 10 ⁻⁶ (40°C to 140°C)	6.6	710	.060	6.7 x 10 ¹¹	•	•
	DP-125	Epoxy	1:1	B-4,000 A-26,000 @ 25°C	NA	18-28 min.	2.5 hr.	7 days @ 23°C	55	150	2500 Aluminum	35 Aluminum	•	•	110	15°C	.089	112 x 10 ⁻⁶ (5°C to 20°C) 190 x 10 ⁻⁶ (65°C to 140°C)	6.3	765	.140	1.2 x 10 ¹¹	•	•
	DP-190 Gray	Epoxy	1:1	B-100,000 A-60,000 @ 27°C	NA	90 min.	12-16 hr.	7 days @ 23°C or 2 hr. @ 65°C	60	20	2200 Aluminum	20 Aluminum	•	•	191	20°C	.220 @ 44°C	62 x 10 ⁻⁶ (-50°C to 30°C) 177 x 10 ⁻⁶ (50°C to 100°C)	6.5	830 (12 mil.)	.090	5.0 x 10 ¹²	Good	Flexible • UL 94 HB Good adhesion to most metals, ceramics & plastics Good for structural bonding
	DP-270 Clear/Black	Epoxy	1:1	B-22,000 A-18,000 @ 23°C	NA	60-70 min.	4-6 hr.	2 days @ 23°C or 1 hr. @ 80°C	82	2	2400 Aluminum	2 Aluminum	•	•	•	49°C/48°C	.101 @ 45°C/ .105 @ 45°C	101 x 10 ⁻⁶ (-50°C to 30°C) 78 x 10 ⁻⁶ (-50°C to 30°C)	3.4/3.6	870 (30 mil.)/ 700 (30 mil.)	.018	4.1 x 10 ¹⁴	Excellent	Noncorrosive to copper • UL 94 HB Meets corrosion resistance requirement of Mil-S-46163 Non-exotherming potting compounds • RI @ 25°C 1.656
	DP-420	Epoxy	2:1	B-35,000 A-10,000 @ 23°C	NA	20 min.	2-3 hr.	3-4 days @ 23°C or 1-2 hr. @ 65°C	80	5	4400 Aluminum	49 Aluminum	•	•	•	58°C	.104 @ 45°C	85 x 10 ⁻⁶ (-50°C to 30°C) 147 x 10 ⁻⁶ (50°C to 110°C)	4.7	690 (30 mil.)	.016	1.3 x 10 ¹⁴	Good	High peel and shear strength Excellent durability Controlled flow • UL 94 HB
	DP-460	Epoxy	2:1	B-35,000 A-10,000 @ 23°C	NA	60 min.	4-6 hr.	7 days @ 23°C or 90 min. @ 70°C or 30 min. @ 93°C	80	7	4600 Aluminum	50 Aluminum	225	7.4	235	58°C	.104 @ 45°C	59 x 10 ⁻⁶ (-50°C to 30°C) 159 x 10 ⁻⁶ (50°C to 110°C)	4.7	1100 (30 mil.)	.010	2.4 x 10 ¹⁴	Good	High peel and shear strength Excellent durability Controlled flow • UL 94 HB
	2216 Gray	Epoxy	2:3	B-100,000 A-60,000 @ 27°C	NA	90 min.	8-12 hr.	7 days @ 23°C or 2 hr. @ 65°C	55	40	2500 Aluminum	25 Aluminum	•	•	•	13°C	.228	102 x 10 ⁻⁶ (0°C to 40°C) 134 x 10 ⁻⁶ (40°C to 80°C)	5.5	408	.112	1.9 x 10 ¹²	Good	Flexible Meets DOD-A-82720 • UL 94 HB
	DP-125 EG	Epoxy	1:1	B-4,000 A-27,500 @ 27°C	NA	25 min.	2-3 hr.	7 days @ 23°C	55	150	1500 [Ⓢ] Aluminum	20 Aluminum	•	•	69	15	.089 @ 43°C	112 x 10 ⁻⁶ (5°C to 20°C) 190 x 10 ⁻⁶ (65°C to 140°C)	5.1	437 (37 mil.)	.060	3.16 x 10 ¹³	•	Flexible Good adhesion to most metals, ceramics & plastics Good for structural bonding
	DP-190 EG Translucent	Epoxy	1:1	B-4,000 A-14,000 @ 27°C	NA	90 min.	12-16 hr.	14 days @ 23°C	35	120	1200 [Ⓢ] Aluminum	20 Aluminum	•	•	4	27°C	.079 @ 43°C	86 x 10 ⁻⁶ (5°C to 20°C) 166 x 10 ⁻⁶ (65°C to 140°C)	5.2	483 (35 mil.)	.060	4.3 x 10 ¹³	•	Flexible Good adhesion to most metals, ceramics & plastics Good for structural bonding
	DP-460 EG	Epoxy	2:1	B-35,000 A-10,000 @ 23°C	NA	60 min.	4-6 hr.	7 days @ 23°C or 90 min. @ 70°C or 30 min. @ 93°C	80	7	4600 Aluminum	50 Aluminum	64.25	1.22	77	58°C RT Cure 72°C Ultimate	.104 @ 45°C	59 x 10 ⁻⁶ (-50°C to 30°C) 159 x 10 ⁻⁶ (50°C to 110°C)	4.6	515 (43 mil.)	.010	2.9 x 10 ¹⁵	•	High peel and shear strength Excellent durability Controlled flow
DP-4XL EG	Epoxy	2:1	B-35,000 A-12,000 @ 23°C	NA	5-6 hr.	12-18 hr.	7 days @ 23°C or 60 min. @ 120°C	84	•	4500 Aluminum	45 Aluminum	142.5	0.4	2	56°C RT Cure 70°C Ultimate	•	•	3.9	676 (31 mil.)	.010	2.5 x 10 ¹⁶	•	High peel and shear strength Excellent durability Controlled flow	
Scotch-Weld One-Part Epoxy Adhesives	2214-HD	Epoxy	NA	Paste 130 sec. @ 23°C	NA	NA	NA	40 min. @ 121°C or 10 min. @ 149°C or 5 min. @ 177°C	85	2	4500 Aluminum	5 Aluminum	•	•	•	110°C	.231 @ 25°C	49 x 10 ⁻⁶ (0°C to 80°C)	10.5	77 (37 mil.)	.126	2.8 x 10 ¹³	Good	High temperature resistant High impact strength • Metallic filled Meets MMM-A-132, Type 1, Class 3 • UL 94 HB
	2214 Hi-Flex	Epoxy	NA	Paste 200 sec. @ 23°C	NA	NA	NA	40 min. @ 121°C or 10 min. @ 149°C or 5 min. @ 177°C	81	3	4000 Aluminum	10 Aluminum	•	•	•	84°C	.193 @ 24°C	80 x 10 ⁻⁶ (0°C to 80°C)	11.3	83 (42 mil.)	.037	2.8 x 10 ¹³	Good	Deaerated Metallic filled • UL 94 HB
	2214 NMF	Epoxy	NA	Paste 100 sec. @ 23°C	NA	NA	NA	40 min. @ 121°C or 10 min. @ 149°C or 5 min. @ 177°C	84	2	4000 Aluminum	7 Aluminum	•	•	•	110°C	.121 @ 43°C	130 x 10 ⁻⁶ (-30°C to 100°C)	4.7	1500 (9 mil.)	.014	1.5 x 10 ¹⁴	Good	Good electrical properties Non-Metallic filled • UL 94 HB
	2290	Epoxy	NA	Solution 40-80	NA	NA	NA	Dry 15 min. @ 121°C and Cure 30 min. @ 177°C	•	4	5500 Aluminum	10 Aluminum	•	•	•	95°C	•	262 x 10 ⁻⁶ (-20°C to 70°C) 534 x 10 ⁻⁶ (100°C to 120°C)	5.2	2400 (4 mil.)	.011	1.2 x 10 ¹⁵	Good	21% solids, B-stageable Passes solder float @ 288°C
	3748	Polyolefin	NA	5000 @ 190°C	45-50 sec.	NA	NA	NA	25	900	220 FR-4	40 FR-4	•	•	•	•	.101 @ 44°C	470 x 10 ⁻⁶ (-10°C to 30°C)	2.3	1300	.001	6.0 x 10 ¹⁷	Good	Excellent hot/cold thermal shock resistance Noncorrosive to copper Good polyolefin adhesion • UL 94 V-2
Jet-melt Hot Melt Adhesives	3748 V-O	Polyolefin	NA	6500 @ 190°C	30 sec.	NA	NA	NA	26	900	220 FR-4	35 FR-4	•	•	•	•	.111 @ 41°C	155 x 10 ⁻⁶ (-10°C to 30°C)	2.3	1400	.001	6.0 x 10 ¹⁷	Good	Self-extinguishing UL 94 V-O • UL 1410 Noncorrosive to copper per ASTM D 3482 and MIL S-46163 Good thermal shock • Good electrical properties
	3764	Ethylene Vinyl Acetate	NA	10,500 @ 190°C	35-40 sec.	NA	NA	NA	18	450	390 Polypropylene	13 Canvas	•	•	•	•	.186 @ 45°C	197 x 10 ⁻⁶ (-15°C to 80°C)	3.0	760	.006	3.3 x 10 ¹⁵	Good	Bonds to polyolefins Good shock resistance Low cost, clear • UL 94 V-2
	3779	Polyamide	NA	8000 @ 190°C	25-30 sec.	NA	NA	NA	45	300	700 Oak	18 Canvas	•	•	•	•	.114 @ 45°C	506 x 10 ⁻⁶ (-30°C to 130°C)	4.6	650	.120	5.8 x 10 ¹²	Good	High temperature resistance • Meets UL 94 V-O Noncorrosive to copper MIL S-46163 Excellent potting material • Good electrical properties

NA = Not Applicable • = Not Available [Ⓢ]Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes. [Ⓢ]Scotch-Weld Potting Compound [Ⓢ]3 hrs. at 85°C GC/MS [Ⓢ]Water extraction, IC [Ⓢ]RT cure with 160°F, 2 hr. post cure [Ⓢ]7-day RT cure