

Die Attach Adhesives | Material Selection Guide

Product		isotropic conductive adhesives (ICA)				
		DELO-DUALBOND	DELOMONOPOX			
			IC343	DA375	DA772	DA VE 111795
General	Conductivity					
	Product group					
	Product code					
General	Basis	mCD	mCD	anhydride	epoxy resin	
	Color	silver gray	gray	gray	silver gray	
	Filler	silver	silver	silver	silver	
General	Filling degree [%]	70	75	75	75	
	Process	Snap cure	✓	✓	✓	✓
		Heat pulse				
Dual curing		✓				
Properties	Low-temperature curing	< +100 °C	✓	✓		
		> +100 °C			✓	✓
	Viscosity	high				
		moderate	✓	✓		✓
		low			✓	
	Flexibility	high	✓	✓		
		moderate				✓
		low			✓	
	Reliability: Die shear strength [N]***	24 h rt	78	96	121	150
		168 h 85/85	30	34	91	138
168 h 85/85 + 3x reflow		82	157	147	159	
Reliability: Die shear strength [N]***	24 h rt	85	111	102	199	
	168 h 85/85	35	45	74	162	
Curing	Curing temp. in air convection oven [°C]	min.	+80	+80	+140	+120
		max.	+150	+180	+180	+170
Curing	Possible heat curing parameters	2 min @ +175°C 10 min @ +100°C 30 min @ +80°C	2 min @ +175°C 10 min @ +100°C 30 min @ +80°C	10 min @ +175°C 30 min @ +150°C	2 min @ +150°C	
	Mechanical value	Young's modulus [MPa]	on request	3,800 at +25°C, DMTA	5,000 at +25°C, DMTA	5,400 at +25°C, DMTA
Glass transition temperature [°C]		on request	48 DMTA	173 DMTA	94 DMTA	
Coefficient of linear expansion [ppm/K]		below Tg	150	65	50	92
		above Tg	temperature range +35°C to +150°C	160	150	185
Spec. electrical resistance [Ωcm] on Au			1.4 x E-4	1 x E-4	1.3 x E-4	2.7 x E-4
Specific thermal conductivity [W/m*K]		1.54	2.3	0.4	-	
Storage	Storage life	at room temperature	72 h	48 h	48 h	72 h
		at 0 °C to +10 °C	-	-	-	-
		at -18 °C	6 months	4 months**	6 months	3 months
Available container sizes		5 cc, 10 cc	5 cc, 10 cc	5 cc	5 cc	
Halogen-free by the criteria of IEC 61249-2-21						

* thermode curing
 ** at -40 °C in unopened original container
 *** average values of a series of 10, harmonized measurement, not comparable with specific data sheet values

electrically non-conductive adhesive (NCA)				
DELOMONOPOX				DELO-DUALBOND
DA VE 45784	DA255	DA358	DA587	AD340
epoxy resin	epoxy resin	mCD	epoxy resin	mCD
black	white	beige	white	beige
unfilled	unfilled	minerals	unfilled	unfilled
-	-	-	-	-
✓	✓	✓	✓	✓
		✓		✓
	✓	✓		✓
✓			✓	
		✓		
✓	✓			✓
		✓		
✓	✓			✓
			✓	
96	244	72	169	135
60	72	38	160	110
34	44	32	96	65
243	228	196	271	182
60	87	153	177	60
+90	+90	+80	+120	+80
+150	+150	+170	+170	+130
3 min @ +150°C 20 min @ +120°C 15 s @ +190°C* 6 s @ +210°C*	2 min @ +150°C 8 min @ +120°C 8 s @ +170°C* 6 s @ +180°C*	1 min @ +140°C 10 min @ +100°C 30 min @ +80°C	2 min @ +150°C 5 min @ +130°C	10 min @ +100°C 30 min @ +80°C
3,800 at +25°C, DMTA	3,200 at +25°C, DMTA	2,300 at +25°C, DMTA	3,500 at +25°C, DMTA	1,100 at +25°C, DMTA
120 DMTA	139 DMTA	65 DMTA	84 DMTA	50 DMTA
57	58	189	94	115
193	170	temperature range +55°C to +150°C	168	182
-	-	-	-	-
-	-	-	-	-
1 week	72 h	72 h	5 days	72 h
-	-	-	-	-
6 months	6 months	6 months	6 months	6 months
10 cc, 30 cc	10 cc	10 cc	10 cc, 30 cc	10 cc, 30 cc, 158 cc

Our material selection guides are a technical selection aid giving an overview of various product variants. We will be pleased to provide you with sales details, such as available container sizes, stock availability and minimum order quantities, on request.

The data and information provided are based on tests performed under laboratory conditions. Reliable information about the behavior of the product under practical conditions and its suitability for a specific purpose cannot be concluded from this. It is the user's responsibility to test the suitability of the product for the intended purpose by considering all specific requirements. Type, physical and chemical properties of the materials to be processed with the product, as well as all actual influences occurring during transport, storage, processing and use, may cause deviations in the behavior of the product compared to its behavior under laboratory conditions. All data provided are typical average values or uniquely determined parameters measured under laboratory conditions. The data and information provided are therefore no guarantee for specific product properties or the suitability of the product for a specific purpose. Verbal ancillary agreements are deemed not to exist.

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MATERIAL SELECTION GUIDE

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