



TECHNICAL DATA SHEET

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DOLPHON[®] CB-1078

BLACK EPOXY POTTING AND CASTING RESIN

PRODUCT DESCRIPTION

CB-1078 is a general purpose, high thermal conductivity, black epoxy casting and potting resin for use in all types of electrical and electronic assemblies.

FEATURES & BENEFITS

- Room Temperature Curing and Heat Curing Reactors Available
- Excellent Thermal Conductivity
- Superior Electrical Properties
- Low Shrinkage
- Superior Water and Chemical Resistance
- Glossy Jet Black Sheen with CB-1078-B
- Good Impact Resistance

TYPICAL APPLICATIONS

- Relays and Coils
- Capacitors
- Electronic Assemblies
- Battery Chargers
- Electronic Ballasts
- Hybrid Circuits
- Sensors
- Motors
- Transformers

TYPICAL PROPERTIES

Note: CB-1078 when cured with RE-2000 Reactor will produce the physical and electrical properties shown here. The physical and electrical properties will vary slightly when CB-1078 is cured with another reactor.

Physical

	CB-1078	RE-2000	Mixed
Appearance/Color	Black	Amber	Black
Weight per Gallon @ 77°F (25°C), ASTM D 1475, lbs/g al	13.8 – 14.2	8 – 8.5	
Viscosity, Brookfield @ 77°F (25°C), ASTM D 2196, c ps	18,000 – 28,200	35 - 45	8,000 – 9,000
Mix Ratio, weight	100	5	
Pot Life @ 77°F (25°C), hours			1 – 1.5
Cure Time, initial cure, (full cure), hours			1 – 3, (24)

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Mechanical

Tensile Strength, ASTM D 638, psi	9,000
Compressive Strength, ASTM D 695, psi	19,500
Flexural Strength, ASTM D 790, psi	17,000
Thermal Conductivity ASTM C 3111 BTU-in./hr-ft ² -°F	4.2
Water Absorption, ASTM D 570, 24 hours @ 25°C, %	0.10
Moisture Vapor Transmission (@ 100°F, 95% R.H., (gms/ft ² /24 hrs/in thickness)	0.01
Hardness, Shore D, ASTM D 2240 (cured 7 days at room temperature)	75 - 80
Coefficient of Linear Thermal Expansion, in./in./ °C ASTM D-696	17 x 10 ⁻⁶
Shrinkage, %	0.2
Chemical Resistance (Most solvents, acids and bases)	Excellent

Electrical

Dielectric Strength, 1/8" Specimen, volts/mil, ASTM D-149	400
Surface Resistivity, ohms, ASTM D-257	7.5 x 10 ¹⁴
Volume Resistivity, ohm-cm, ASTM D-257	8.0 x 10 ¹⁵
Dielectric Constant @ 23°C, 60 Hz, ASTM D-150	4.596
Dissipation Factor @ 23°C, 60 Hz, ASTM D-150	0.0207

Note: The mechanical and electrical properties will vary slightly when CB-1078 is cured with other reactors.

APPLICATION GUIDELINES

Preparing the Unit

1. For potting applications, assure that the case or shell is clean and free of oil and grease.
2. For casting applications.
 - a) Assure that the mold is clean and dry.
 - b) Coat the mold with non-silicone mold release. If using a multi-part mold, be sure the mating surfaces are coated with release agent.

Preparing the Resin

Important: Before measuring or removing any filled resin or reactor from the shipping container, thoroughly mix in the container to redistribute the fillers which may have settled during shipping and storage.

1. Thoroughly stir CB-1078 in the container to assure uniform filler distribution. Measure resin and reactor according to the table below and place in a straight sided, round metal, glass or unwaxed paper container. Mix using a flat stick or spatula. Do not use a round implement such as a screwdriver, which tends to entrap air in the resin.
2. Mix part B into part A thoroughly, stirring to the bottom of the container and scraping the sides to assure a complete mix throughout.

Resin Properties by Reactor

REACTOR	RE-2000	RE-2001	RE-2005	RE-2009	RE-2010	CB-1078-B
Mix Ratio, Resin/reactor	100:5	100:20	100:7	100:10	100:20	100:20
Mixed Viscosity	8,600	3,840	11,000	10,800	11,520	5,750
Pot Life, hr	1	1½	5 days	½	1½	2 - 3
Cure Cycle, Hr @ °F/°C	1-2 @ 77/25	2-4 @ 77/25	5-7 @ 225/107	1-2 @ 77/12	4-6 @ 77/25	12 @ 77/25
Shrinkage on Cure	0.2	0.1	0.05	0.2	0.1	0.1
Dielectric Strength	400	420	410	400	415	400
1 Week Hardness	80	75	80	80	75	75
Temperature Class	B	B	F	B	B	B

Application

1. Automated meter/mix dispensing.
 - a. Fill machine according to equipment manufacturer's directions. Be sure the tanks are clean, dry and free of oil and grease. Tanks that hold filled compounds must be agitated (mixed) to redistribute the fillers.
 - b. Assure that lids or covers are on the tanks to keep out moisture and contaminants.
 - c. Cure according to chart above.
2. Manual
 - a. The resin mixture may be deaerated under vacuum to obtain a void-free casting.
 - b. Mix only as much resin as can be conveniently used within 30 minutes.
 - c. To avoid trapping air, slowly pour the resin at one open point near a corner or edge of the container allowing the resin to flow up from the bottom
 - d. Cure according to chart above.

STORAGE AND SHELF LIFE

Shelf life is one year from date of shipment from our plant, when stored in closed containers at 70°F/21°C or below. Store in cool, dry place at 70° F/21°C or below.

1. Protect from direct sunlight and sources of heat
2. Keep away from heat, sparks and open flame.

SAFETY AND ENVIRONMENT

Avoid contact with skin and eyes. See Material Safety Data Sheet

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