Technical Data Sheet

Resin

DOLPHON® CB-1078

- **Two-Part, Epoxy Potting System with Room Temperature or Heat Curing**
- **Excellent Thermal Conductivity with Superior Electrical Properties**
- **Superior Water and Chemical Resistance**
- **Good Impact Resistance with Low Shrinkage**
- **Glossy Jet-Black Sheen with CB-1078-B**

Description
DOLPHON® 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.

Application
DOLPHON® CB-1078 can be used in for potting and/or casting resin for relays, coils, battery chargers, sensors, capacitors, electronic ballasts, motors, eleectronic assemblies, hybrid circuits and transformers.

Processing Guidelines
Preparing the Unit - For potting application, assure that the case or shell is clean and free of oil and grease. For casting applications, assure that the mold is clean and dry. 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 - Before measuring or removing any filled resin or reactor from the shipping container, thoroughly mix in the container to redistribute the filler, which may have settled during shipping and storage.

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 which will tend to entrap air in the resin. Mix the desired reactor into CB-1078 thoroughly, stirring to the bottom of the container and scraping the sides to assure a complete mix throughout.

For automated meter/mix dispensing - Fill machine according to equipment manufacturer's directions. Be sure the tanks are clean, dry and free of oil/grease. Tanks that hold filled compounds must be agitated (mixed) to redistribute the fillers. Assure that lids/covers are on tanks to keep out moisture and contaminants. Cure according to reactor chart.

For manual application - The resin mixture may be deaerated under vacuum to obtain a void-free casting. Mix only as much resin as can be conveniently used within 30 minutes. 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. (RE-2005 and resin mixture may be heated to 150ºF to lower viscosity and improve penetration. Cure according to reactor chart.)

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Physical Properties, CB-1078	Test norm	Unit	Value
Color / appearance			Black
Density, 77°F (25°C)	ASTM D1475	lb/gal	13.8 – 14.2
Viscosity Brookfield, 77°F (25°C)	ISO 2555	cps	18,000 – 28,000
Gel Time, 132°F (55.5°C)		minutes	30 - 50
Physical Properties, RE-2000	**Test norm**	**Unit**	**Value**
Color / appearance			Amber
Density, 77°F (25°C)		lb/gal	8.0 – 8.5
Viscosity Brookfield, 77°F (25°C)	ISO 2555	cps	35 - 45
Physical Properties, Mixed	**Test norm**	**Unit**	**Value**
Mix Ratio, resin: hardener	by weight		100:5
Color / appearance			Black
Viscosity Brookfield, 77°F (25°C)	ISO 2555	cps	8,000 – 9,000
Pot Life, 77°F (25°C)		hours	1.0 – 1.5
Cure Time, 77°F (25°C)	initial cure, full	hours	1-3, 24
Technical Properties	**Test norm**	**Unit**	**Value**
Hardness, Shore D, 25°C (77°F)	ASTM D2240		75 - 80
Tensile Strength, 25°C (77°F)	ASTM D638	psi	9,000
Compressive Strength, 25°C (77°F)	ASTM D695	psi	19,500
Flexural Strength, 25°C (77°F)	ASTM D790	psi	17,000
Shrinkage		%	0.2
Water Absorption, 24 hours	ASTM D570	%	0.10
Coefficient of Linear Thermal Expansion	ASTM D696	in/in/°C	17×10^{-6}
Thermal Conductivity	ASTM C3111	W/m·K	0.605
Moisture Vapor Transmission	100°F, 95% R.H.	gms/ft^2/24hrs/inch(thickness)	0.01
Chemical Resistance	Most solvents, acids, bases		Excellent
Electrical Properties	**Test norm**	**Unit**	**Value**
Dielectric Strength, 1/8” specimen	ASTM D149	volts/mil	400
Dielectric Constant, 23°C, 60 Hz	ASTM D150		4.6
Dissipation Factor, 23°C, 60 Hz	ASTM D150		0.02
Surface Resistivity	ASTM D257	ohms	7.5×10^{14}
Volume Resistivity	ASTM D257	ohm-cm	8.0×10^{15}

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CB-1078 Resin Properties by Reactor

Reactor	Mix Ratio, weight	Pot Life, 25°C	Cure	Shore D hardness, 1 week	Mixed viscosity, Brookfield	Shrinkage, cured	Dielectric Strength, volts/mil	Temp. Class
RE-2000	100:5	60 min.	1-2 hours, 77ºF/25ºC	80	8,600 cps	0.2	400	B, 130ºC
RE-2001	100:20	90 min.	2-4 hours, 77ºF/25ºC	75	3,840 cps	0.1	420	B, 130ºC
RE-2005	100:7	5 days	5-7 hours, 225ºF/107ºC	80	11,000 cps	0.05	410	F, 155ºC
RE-2009	100:10	30 min.	1-2 hours, 77ºF/25ºC	80	10,800 cps	0.2	400	B, 130ºC
RE-2010	100:20	90 min.	4-6 hours, 77ºF/25ºC	75	11,520 cps	0.1	415	B, 130ºC
CB-1078-B	100:20	2-3 hrs	12 hours, 77ºF/25ºC	75	5,750 cps	0.1	400	B, 130ºC

Storage and Shelf Life

The shelf life of DOLPHON® CB-1078 is 12 months from date of shipment from our plant, when stored in the original closed containers at 70°F/21°C or below. Store in a cool, dry place that is protected from direct sunlight and other sources of heat. Reactors are sensitive to moisture and it should be stored in tightly closed containers at room temperature (70°F/21°C) in a dry location. Shelf life of reactors stored under these conditions are 12 months.

Health and safety

Safety Data Sheets defining the known hazards and describing safety precautions appropriate for this product are available upon request from Von Roll USA, Inc., Schenectady, NY, (518) 344-7100 and/or www.vonroll.com. Similar information for solvents and other chemicals to be used with this product may be obtained from the appropriate supplier and used accordingly. We recommend following all hygiene and safety standards while processing material.

Liability

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