- TECHNICAL DATA SHEET -

DOLPHON CB-1078
BLACK EPOXY RESIN

DESCRIPTION

DOLPHON CB-1078 is a filled, black, epoxy casting and potting resin for use in all types of coils, transformers, electrical and electronic assemblies. Formulated with a series of room cure and heat curing reactors, this 2 part system provides the user with a choice of curing cycles and finished properties. DOLPHON CB-1078 has the following outstanding features:

- Low cost.
- Excellent thermal conductivity.
- Good electrical properties.
- Low shrinkage.
- Good moisture resistance.
- Low exothermal during cure.

Recommended uses

DOLPHON CB 1078 is recommended for use on motors and other devices that will operate in harsh environments such as stone quarries, mines, cement factories, steel plants, meat processing and packing, dairies, breweries, paper mills and chemical plants.

CHARACTERISTICS

Physical properties	
Specific gravity at 25°C	1950±50 g./l.
Viscosity Brookfield RVT/25°C/Sp.1/Rpm1	5.000/7.000 cps.
Viscosity in Ford Cup n.8 at 25°C	35-65''
Tensile strength, p.s.i.(ASTM D-638)	9.000
Compressive strength, p.s.i. (ASTM D-695)	19.500
Flexural Strength, p.s.i. (ASTM D-790)	17.000
Thermal conductivity, W/mK	0,45 / 0,55
Water absorption, (ASTM D-570)	0,10%
Moisture Vapor Transmission at 38°C and 95% R.H. (gr/ft^2/24 hrs./in.thickness)	0,01
Hardness, Shore "D"	85
Coefficient of linear Thermal Expansion,in./in.°C (ASTM 696)	$17x10^{-6}$
Shrinkage, %	0,16%
Operating temperature (*)	-30/+155°C.

(*) Operating temperature is the result of laboratory tests; anyway the user has to verify the thermal resistance based on the type of product treated.

Electrical Properties	
Dielectric Strength, IEC-243, KV/cm.	200-220
Surface Resistivity (ohms)	$7,5x10^{14}$
Volume Resistivity (ohm*cm)	$8,0x10^{15}$

	Dielectric constant (ASTM D-150) at 23°C	Dissipation factor (ASTM D-150) at 23°C
60 c.p.s.	4,596	0,0207
1000 c.p.s.	3,270	0,0078
10^6 c.p.s.	3,948	0,0075
10^7 c.p.s.	4,193	0,0068
$3x10^7$ c.p.s.	3,988	0,0084

Physical and electrical properties described above relates to CB-1078 DOLPHON catalyzed at room temperature with REACTOR RE-2000. These properties may differ slightly when using another catalyst.

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APPLICATION

Preparation of unit

1. When potting with DOLPHON CB-1078 the case or shell must be clean and free of grease to insure good adhesion.
2. For casting applications with DOLPHON CB-1078 clean the mold and coat with mold release.
3. Part may be preheated at 110°-120°C for 3 hours to insure the removal of moisture and cure any thermo-setting materials.

Preparation and use of resin system

1. Choose a reactor for desired cure cycle and flexibility of cured epoxy from the table below.
2. Thoroughly stir DOLPHON CB-1078 in the container prior to measuring.
3. Measure resin and reactor in proportion shown in the table below.
4. Slowly pour reactor into resin and mix thoroughly making sure to scrape sides and bottom of containers to assure that the mixture is uniform.
5. The resin mixture may be deaerated to obtain a void free casting.
6. Slowly pour the resin along the side or edge of the mold being careful not entrap air.
7. For maximum penetration of resin a vacuum only or vacuum and pressure cycle can be used.

Curing process (room cure cycle)

For maximum penetration parts or molds may be warmed to 40-50°C before the pouring operation.
Pour mixed resin and reactor into mold. Keep in a warm dry place until resin has set.

Cure	Reactor	Mix ratio Parts by weight CB-1078+React.	Hardness Shore D (1)	Temperature classification	Gelling time @ 25°C (Tecam100 g)	Pot life 100 gr. @ 25°C	Total cure @ 25°C
	RE-2000	100 : 5	80-90	F	80-120’	40-50	24 h.
Room	RE-2001	100 : 20	70-80	B	60-100’	50-60	24 h.
Temp.	RE-2013	100 : 10	80-90	B	30-50’	30-40’	24 h.
(3)	400-D	100 : 20	55-65	B	80-120’	60-70’	24 h.
	426-D	100 : 20	40-50	F	140-180	60-70	24 h

Notes:

(1) Resin will be firm and tack free after initial cure but may not reach ultimate hardness for several days. Typical hardness after 7 days is given.

(2) Based on 100 gr. castings. A thin film or smaller mass will require somewhat longer cure time.

(3) After the initial gelling, the curing time can be accelerated by baking the unit for 2 hours at 60-65°C.

(4) DOLPHON CB-1078 when cured with RE-2000 Reactor, will produce the physical and electrical properties described in this sheet. The physical and electrical properties will vary slightly when CB-1078 is cured with another reactor.

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