

TECHNICAL DATA**DOLPHON® CC-1105/HTC****Solvent-Free Polyester Resin****DESCRIPTION**

CC-1105/HTC is a 100% solids polyester resin developed for increased slot fill and thicker coatings, as well as improving thermal conductivity and resistance to moisture and chemicals.

ADVANTAGES

- UL Certified – File OBOR2.E317427
- Included in UL Electrical Insulation Systems up to 220°C – File OBJS2.E317429
- 220°C (Class C) Thermal rating
- High Flash Point (Above 120°C) – Reduced fire hazard & insurance
- 100% solids - No solvents
- High thermal conductivity & thicker coats
- Excellent high temperature bond strength
- Freon resistant (Hermetic duty motors)
- Low weight loss during processing due to low volatility
- Free from usual varnish odours
- Low viscosity, good penetration for high coil filling and better heat dissipation
- Stoving schedules allow energy saving
- Good dip tank stability
- Excellent moisture & chemical resistance

APPLICATIONS

- Transformers
- Inductors
- Traction coils
- Stators
- High speed rotors & armatures
- Hermetic motors

PHYSICAL PROPERTIES

Colour	Clear/Amba
Thermal index	220°C
Specific gravity @ 25°C	1290 ± 50g/L
Viscosity, Ford No8 Cup @ 25°C	30 - 50 seconds
Viscosity, Brookfield RVT, Spindle 3, RPM 10 @ 25°C	5,000 - 6,000 Cps
Viscosity, Brookfield RVT, Spindle 3, RPM 1 @ 25°C	22,000 - 26,000 Cps
Flash point, Tag open cup	> 165°C
Gel time @ 100°C	110 - 150 minutes
Gel time @ 110°C	40 - 55 minutes
Thermal conductivity	0.30 - 0.35W/mK
Film thickness, DFT	0.075 - 0.100mm
Thixotropy ratio	> 2
Shelf life @ 25°C in original closed containers	18 months

ELECTRICAL PROPERTIES

Dielectric strength, dry, ASTM D-115	4,000 Volts/0.025mm
Dielectric constant, ASTM D-150	3.14
Volume resistivity @ 25°C, ASTM D-257	7×10^{16} ohm/cm
Volume resistivity @ 150°C, ASTM D-257	1.4×10^{13} ohm/cm

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CHEMICAL RESISTANCE - REFRIGERANT EXTRACTION (NEMA RE-2)

R-123	<1%
R-134a	<1%

MECHANICAL PROPERTIES

Bond strength @ 25°C, Helical coil, ASTM D-2519	23 Kgs to break
Bond strength @ 155°C, Helical coil, ASTM D-2519	13 Kgs to break

THERMAL RATING (UL 1446)

MW 16 wire, twisted pairs	220°C
MW 35 wire, twisted pairs	200°C
UL Electrical Insulation System File OBJ2.E317429	220°C

Please see **Note 3** for stoving information if refrigerants are present.

APPLICATION

Vacuum Pressure Impregnation

1. Pre-heat unit to 105°C.
2. Cool unit to 40 - 50°C.
3. Place the unit in the vacuum chamber.
4. Transfer resin, covering the unit by at least 2/3cms and impregnate under vacuum for 30 minutes.
5. Release vacuum and apply a pressure of 6 - 8 atm.
6. Release the vacuum and drain for 30 minutes.
7. Cure in the oven as recommended.

Dip Impregnation

1. Pre-heat unit to 105°C.
2. Cool to 40 - 50°C.
3. Immerse unit in resin until bubbling ceases (15 - 30 minutes).
4. Drain unit for 30 minutes.
5. Cure in the oven as recommended.

CURE SCHEDULE

15 - 30 minutes	175°C
35 - 45 minutes	165°C
60 - 90 minutes	150°C
2 - 3 hours	135°C
4 - 6 hours	120°C
10 - 14 hours	110°C

Time must be taken after the entire unit reaches cure temperature. Stoving times will vary depending on size and weight of unit.

To obtain thicker coats, units should be placed in the oven with the oven already at the required baking temperature. This will reduce drainage into the oven.

Note 1: For maximum reaction of resin, coils should be wrapped in a saturable tape.

Note 2: Bare copper, copper alloys and natural rubber will react with the resin and should be avoided.

Tanks and fittings should be constructed of steel with synthetic rubber or plastic.

Note 3: When refrigerants are present, it is advisable to stove at 160°C for a minimum of 6 hours.

Note 4: A green colouration may form with bare copper, which is more evident when moisture is present in the system. It may be reduced, if not eliminated by pre-heating the windings and immersing in varnish whilst hot.



COMPATIBILITY

CC-1105/HTC is compatible with all common types of magnet wire enamel.

MASKING

7776/A Masking Grease is suitable for the masking of all metal surfaces and prevents adhesion of the resin to components without contamination of the resin or tank.

STABILITY

Experience over many years has proven CC-1105/HTC to be extremely stable in atmospheric dip tanks.

HEALTH & SAFETY

Before use, please refer to Material Safety Data Sheets (MSDS).