

TECHNICAL DATA

DOLPHON® CC-1115/LV **Solvent Free Epoxy Resin**



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DESCRIPTION

CC-1115/LV is a one-part thixotropic epoxy resin developed for use in vacuum pressure impregnation (VPI) plants where thorough penetration and high resin retention is required.

CC-1115/LV may also be used in atmospheric dip tanks, although penetration will not be so high, but good filling and high build will be achieved.

ADVANTAGES

- UL Certified – File OBOR2.E317427
- Included in UL Electrical Insulation Systems up to 200°C – File OBJS2.E317429
- Good penetration (VPI) and low draining during baking cycle
- Superior moisture & chemical resistance
- Good resistance to thermal shocks
- Exceptional tank stability
- Good electrical & mechanical values
- Lower viscosity than standard CC-1115

APPLICATIONS

- Form wound coils
- Random wound coils
- Generators
- Stators
- High speed rotors
- DC armatures
- Transformers

PHYSICAL PROPERTIES

Specific gravity @ 25°C	1150 ± 50g/L
Viscosity, Ford No8 Cup @ 25°C	45 - 65 seconds
Viscosity, Brookfield, RVT @ 25°C	2,000 - 3,000 cPs
Build, DFT (ASTM D-115)	0.075 - 0.125mm
Gel time @ 140°C	15 - 23 minutes
thermal conductivity	0.14 W/mK
Hardness, Shore' D' @ 25°C (ASTM D-2519)	80 - 90
Corrosive effect on copper, iron, steel & aluminium	None
Pack sizes	25, 220 Kg
Shelf life @ 25oC in original closed containers	12 months
RoHS compliant	Yes
REACH SVHC concentration	0%

MECHANICAL PROPERTIES (Double impregnation, coils baked 4 hours @ 160°C)

Bond strength @ 25°C (ASTM D-2519)	25 Kgs
Bond strength @ 150°C (ASTM D-2519)	3 Kgs

THERMAL CLASS (UL1446)

MW 16 magnet wire, twisted pair	200°C
MW 35 magnet wire, twisted pair	180°C
MW 28 magnet wire, twisted pair	130°C

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ELECTRICAL PROPERTIES

Dielectric constant @ 25°C (ASTM D-150)	3.24
Dissipation factor @ 25°C (ASTM D-150)	0.023
Dielectric strength (ASTM D-115)	2,200V/0.025mm
Resistivity @ 25°C (ASTM D-257)	5 x 10 ⁶ mega ohms
Surface resistivity, 500V	3.7 x 10 ¹⁴ ohms
Volume resistivity	2.74 x 10 ¹⁶ ohms/cm

APPLICATION

The following cycle is a recommended starting point for the VPI of most units:

1. Pre-heat unit to 120 - 130°C.
2. Place the unit in the vacuum chamber and apply a dry vacuum of 1mm Hg for 20 - 30 minutes approximately.
3. Allow the unit to cool to 40 - 50°C and in the meantime mix the resin in the reservoir.
4. Maintaining vacuum transfer the resin into the vacuum chamber allowing it to cover the unit by several cms.
5. Maintain the vacuum for 30 - 60 minutes. (Larger units will require longer under vacuum).
6. Release the vacuum and apply a pressure of 2 - 5 atm. For 30 - 60 minutes for maximum penetration.
7. Slowly bring the resin back into the reservoir and allow the unit to drain for 1 - 2 hours. Where possible, suspend the unit at an angle.
8. Cure as recommended.

Note:

Units requiring superior corona resistance should only be vacuum pressure impregnated.

Pre-heating cycles must be carefully effected in order to fully remove any moisture from the system.

The vacuum must be brought to 25 - 50 mBar and be held for an extended period according to the size and compactness of the winding. Where mica tapes are present, the time should always be increased accordingly.

The vacuum must be held at all times, from transfer from the reservoir until complete impregnation.

CURE SCHEDULE

8 - 10 hours	150°C
5 - 6 hours	160°C
Overnight for best chemical resistance	160°C

Time must be taken after the unit has reached cure temperature.

STORAGE & STABILITY

CC-1115/LV has a shelf-life of 12 months at room temperature (Max 30°C). The shelf-life can be extended indefinitely with regular additions of fresh resin into the storage tank.

Due to the thixotropic nature of CC-1115/LV, it may be difficult to pump the resin from the reservoir into the vacuum chamber in cold conditions. To help with this, large diameter connection pipes should always be used into the construction of the VPI system, and a heating jacket may be used to keep the resin at ambient temperatures.

HEALTH & SAFETY

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