

# Resin

## DOLPHON CC-1180 HiR

- **Impregnating Epoxy resin**
- **High Reactivity**
- **High moisture and chemical resistance**
- **Free of Volatile Organic Compounds**
- **Excellent penetration**
- **Good electrical and mechanical properties**
- **Class H, UL recognized (File OBOR2.E317427)**

### Description

One component solvent free epoxy resin designed for roll through and trickling Impregnation. Good adhesion properties on iron, steel, aluminium, copper, coated wires without corrosion effect. Very low smell.

### Application

Impregnation of low voltage rotors, stators, coils.

### Processing guidelines

Trickling:

1. Preheat unit at 130-140°C (temperature measured on the units).
2. Trickle the resin on the winding, keeping it in slow rotation.
3. The trickling time may change from 10 to 40 seconds, according to the size of the units.
4. Curing time: 30 minutes @ 170°C or 1h @ 160°C (temperature have to be measured on the units).

Roll through

1. Preheat unit at 80-90°C (temperature measured on the units).
2. Roll the rotor in the resin.
3. Bring rapidly the rotors to a temperature of 140°C to gel the resin, by means of induction heating.
4. Curing time: 30 minutes @ 170°C or 1h @ 160°C (temperature have to be measured on the units).

If high mechanical or chemical stresses are expected during operation, longer curing times may be recommended.

### Health and safety

Our products are intended for industrial use only. For more details, read the Safety Data Sheet.

### Storage conditions

The shelf life is 12 months, when stored in original closed containers at maximum 25°C, protected from direct sunlight and other sources of heat. Higher temperatures can be reached during a short period of time.

| Physical Properties                                   | Test norm                             | Unit    | Value              |
|---|---------------------------------------|---------|--------------------|
| Density @ 25°C  |                                       |         | 1,15               |
| Viscosity Brookfield @ 25°C                           | DIN 53018                             | mPa.s   | 300-800            |
| Gel time @ 140°C                                      |                                       | minutes | 5-10               |
| Weight loss during curing                             |                                       | %       | <1.5               |
| Shore D hardness                                      | ISO 868                               |         | 80-90              |
| Mechanical Properties                                 | Test norm                             | Unit    | Value              |
| Bond strength (MW35 wire,<br>2h@160°C curing) @ 25°C  | IEC 61033, method B<br>(helical coil) | N       | >260               |
| @ 150°C   |                                       | N       | >50                |
| Thermal Properties                                    | Test norm                             | Unit    | Value              |
| Thermal class   | UL1446, twisted pairs,<br>MW35        |         | H/180°C            |
| Thermal Conductivity                                  | DIN EN 821                            | W/m.K   | 0.2                |
| Chemical Properties                                   | Test norm                             | Unit    | Value              |
| Water absorption, 24h @ 25°C                          | ISO 62                                | %       | < 0.3              |
| Water absorption, 7 days @ 25°C                       | ISO 62                                | %       | < 1                |
| Electrical Properties                                 | Test norm                             | Unit    | Value              |
| Dielectric Strength @ 25°C (25µm)                     | ASTM D-115                            | KV/mm   | >88                |
| Comparative Tracking Index                            | IEC 60112                             | V       | >600               |
| Volume Resistivity                                    | IEC 60646-2                           | Ω.cm    | >10 <sup>15</sup>  |
| Volume Resistivity after 7 days of<br>water immersion | IEC 60646-2                           | Ω.cm    | > 10 <sup>14</sup> |
| Surface resistance                                    | IEC 60464-2                           | Ω       | > 10 <sup>14</sup> |
| Surface resistance after 7 days of<br>water immersion | IEC 60464-2                           | Ω       | > 10 <sup>13</sup> |
| Dielectric Constant ε <sub>r</sub> @ 25°C             | ASTM D-150                            |         | 3.2                |
| Dissipation factor tg δ @ 25°C                        | ASTM D-150                            |         | 0.023              |

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