



Technical Data Sheet

Resin

DOLPHON XL-2102

- One component impregnation resin
- UL Class H approved (file OBOR2.E317427 and OBJS2.E317429)
- Excellent wetting properties
- Good bond strength
- Low weight loss on cure
- Very low odour
- Relatively fast curing cycles
- Low viscosity
- EN 45545-2 approved for railway applications: HL3 for R22, and HL3 for R23

Description

DOLPHON XL-2102 is a one-package, 100% solid polyester resin, specially developed for dipping impregnation, both in open tanks and vacuum chambers

Applications

Impregnation of stators, rotors, traction coils, transformers, inductances.

Processing guidelines

DOLPHON XL-2102 can be easily applied by following these suggestions:

1. Preheat the units at 50-60°C (maximum);
2. Dip into the resin for 30-60 minutes;
3. Drain for 1 h. minimum;
4. Bake minimum 3 to 4 hours @ 130°C or 1 hour @ 150°C. Best performances when baking 2 ½ hours @ 150°C, or 2 h. @ 160°C or 75' @ 170°C (time must be taken after units reach the baking temperature). For parts having to endure high mechanical or chemical stresses during operation, longer curing times are recommended.

For the VPI application the cycle must be set for each type of machines, feel free to contact us.

DOLPHON XL-2102 is sensitive to UV rays. When not in use, the impregnation tanks must be protected from the light by means of a (non-transparent) lid. Exposition to sunlight may cause a partial gelification of the tank surface.

DOLPHON XL-2102 reacts with bare copper, copper alloys and natural rubbers; it is therefore not advisable using these materials in the impregnating plant construction.



Storage conditions – Shelf life

The shelf life is 12 months, when stored in original closed containers at maximum 30°C, protected from direct sunlight and heat sources.

Health and safety

Our products are intended for professional/industrial use only. For any further information, please refer to safety data sheet.

| Physical Properties | Test norm | Unit | Value |
|--|-----------|---------|-------------|
| Density @ 25°C | | | 1.09 – 1.15 |
| Viscosity Ford Cup 4 @ 25°C | | seconds | 110-170 |
| Viscosity ISO Cup 6 @ 25°C | | seconds | 80 - 120 |
| Gel time @ 100°C | | minutes | 30-45 |
| Weight loss (10g liquid, cured 1h @ 150°C) | | % | <3.5 |

| Mechanical Properties | Test norm | Unit | Value |
|--|-------------------------|-------|-------|
| Bond strength (MW35, double impregnation, curing 1h@150°C) | IEC 61033B Helical Coil | | |
| | | 25°C | N |
| | | 80°C | N |
| | | 155°C | N |

| Electrical Properties | Test norm | Unit | Value |
|---|-------------|-------|-------------------|
| Dielectric Strength @ 25°C | ASTM D-115 | KV/mm | >128 |
| Volume resistivity @ 25°C | IEC 60464-2 | Ω.cm | >10 ¹⁵ |
| Volume resistivity @ 25°C after 7 days immersion in water | IEC 60464-2 | Ω.cm | >10 ¹² |
| Surface resistivity | IEC 60464-2 | Ω | >10 ¹⁵ |
| Dielectric Constant @ 25°C 50HZ | ASTM D-150 | | 3,3 |
| Comparative Tracking Index CTI | IEC 60112 | | 600M |



| Thermal Properties | Test norm | Unit | Value |
|----------------------|-----------|---------------|---------------|
| Thermal Conductivity | | W/m.K | 0,25-0.30 |
| Thermal class | UL 1446 | Twisted Pairs | Helical Coils |
| | MW 16-C | 220°C | |
| | MW 28-C | 130°C | |
| | MW 35-C | 180°C | 200°C |

| Chemical Properties | Test norm | Unit | Value |
|---------------------------------|-----------------------|------|-----------|
| Water absorption 90' @ 100°C | ASTM D-570 | % | <1.5 |
| Water absorption 24h @ 25°C | ASTM D-570 | % | <1 |
| Resistance to vapor of solvents | IEC 60464-2 | | |
| | Xylene | | Resistant |
| | Methanol | | Resistant |
| | Hexane | | Resistant |
| Resistance to chemicals | ISO 175 | | |
| | Hydrochloric acid 10% | % | <2.5 |
| | Sulfuric acid 30% | % | <1.5 |
| | Green gasoline | % | <1.5 |
| | Oil transformers | % | <0.5 |
| | Detergent solution | % | <1.5 |

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