



- TECHNICAL DATA SHEET -

## DOLPHON C(a)-1114

(BASE A 100: BASE B 13)

### DESCRIPTION

DOLPHON C(a)-1114 is a two component, filled, halogen-free, self-extinguishing epoxy resin. It has good mechanical and thermal features, as well as a good penetrating behavior. It's widely used to pot and impregnate windings, transformers, capacitors and electrical components, and it is available on request in different colors.

It has the following outstanding features:

- Excellent resistance to thermal cycles
- Good electrical properties.
- Low shrinkage when curing.
- Good water resistance.
- Self-extinguishing properties UL94V0
- Suitable for application up to class H
- Included in UL Insulating System
- Good heat dissipation.
- EN 45545-2 certified

### TYPICAL APPLICATIONS

Stators	Electrical magnets	Transformers
Electrical brakes	Bobbins	Capacitors

### CHARACTERISTICS

<b>Physical properties</b>			
<b>Specifications</b>	<b>Resin C(a)-1114 Base A</b>	<b>Hardener C(a)-1114 Base B</b>	<b>MIXED</b>
Viscosity Brookfield, 25°C	6000-10000 mPa.s	40-100 mPa.s	1000-3000 mPa.s
Specific Gravity at 25°C (g/L)	1630±30 g/l	1000±30 g/l	1530±30 g/l
Tensile strength, (ASTM D-638), MPa			42-52
Flexural strength, (ASTM D-790), MPa			63-73
Thermal Conductivity W/mK			0,70-0,90
Water absorption, % (ASTM D-570)			0,2-0,3
Hardness, Shore "D"			80-90
Shrinkage			0,3 %
Thermal Class (ASTM D-2307 / 20.000h.)			180°C
Thermal cycles (OLIPHANT method)			10 cycles - 60/+180°C
TG (Glass Transition Temperature), ASTM EI356			40-55°C
Glow-wire ignition temperature, GWIT (EN 60695-2-13)			900°C / 3,0
Glow-wire flammability index, GWFI (EN 60695-2-12)			960°C / 3,0
Coefficient of linear thermal expansion, ASTM D-3386, 1/°Cx10 <sup>6</sup>			40-70
Exothermic peak (on a 500 gr. mass, at 25°C)			71°C



<b>Electrical properties</b>	
Dielectric Strength, IEC-243, KV/cm	200-230
Surface resistivity (ohms)	$8,1 \times 10^{13}$
Volume resistivity (ohms/cm)	$9,0 \times 10^{14}$
Comparative Tracking Index (IEC 60112), V	CTI 600
Thermal class (ASTM D2307/20000 hours)	180°C

## **CERTIFICAZIONI**

<b>UL Certification</b>	<b>File</b>
94 V-0 - 4mm	E317428
Insulating system 155°C	E317429, DV-155J tab. IX

<b>Certification according to EN-45545-2 (March 2016)</b>	
<b>Requirements</b>	<b>Acceptance limits</b>
R22	HL1, HL2
R23	HL1, HL2, HL3

## **USE AND APPLICATION**

### **Preparation of units for DOLPHON C(a)-1114**

- Potting in a container:  
Clean the container as to reach a good adhesion
- Potting with removable mold:  
Clean the mold and spray or spread with a release agent.

### **Cycle**

1. Pre-heat the unit at 110/120°C for 3 h, to remove humidity and cure eventual thermo-setting tapes.
2. Cool down the unit to 40-50°C.
3. Pour slowly the compound in a corner of the mold so that the resin can rise gradually from the bottom to the top, avoiding trapping air in the potting.

### **Mixing**

In case of slight sedimentation, stir the resin to homogenize it, add the appropriate amount of catalyst, slowly stirring the resin with the hardener for some minutes, taking care not to incorporate air, also scraping the walls and the bottom of the vessel to disperse uniformly the two components.

The recommended hardener and the required amount is as follows:

Hardener	Parts by weight of hardener for 100 parts of resin	In volume	Lasting at 25°C (100 gr.)
C(a)-1114 Base B	13	22	80-110 min.
CF-1114 Base B	13	22	55-70min.
CS/CL-1114 Base B	13	22	200-300 min.

Note: The operating temperature is a result of our Laboratory experience, but the users are responsible for the effective thermal resistance of the devices to protect according to their type and size.



## Curing

The system cures at room temperature.

Hardener	Initial hardening (100g)	Full hardening
C(a)-1114 Base B	3 – 4 h. a 25°C	24 h. a 25°C

**NOTE:** The system polymerizes in a wide range of temperatures (15-80°C) and its final properties are reached in variable time, depending by the chosen temperature.

It is possible to reach quickly all the final properties, by jellyfy the product at room temperature and then curing at 70°C for 3 hours.

## COLOR MATCHING TABLE

Base A code	Base A Color	Codice base B	Colore base B
CY-1114-A	Yellow	CX-1114-B	Blue
CB-1114-A	Black	CC-1114-B	Transparent
CX-1114-A	Blue	CF-1114-B	Blue
CR-1114-A	Red	CS-1114-B	Blue
CN-1114-A	Neutral	CL-1114-B	Transparent

For further colors, please contact us.

## STORAGE AND STABILITY

DOLPHON C@-1114-A and above listed B bases, can be stored in their original closed containers for 12 months, at a maximum temperature of 30°C. Keep the containers away from direct sunlight and heating sources.

Like all epoxy resins, the A base could show some crystallization; if any, it is needed to slightly heat the product to 40°C and homogenize it, to recover initial properties.

## HANDLING PRECAUTIONS

DOLPHON C@ 1114 has to be considered for professional/industrial use only. For any further information please refer to safety data sheet.

Warning: All the information and application instructions concerning this product are based on technical specifications that we consider reliable, and are provided by way of example, according to our application experience. They do not establish any guarantee but only represent a starting point subject to alterations, according to the application and the kind of material to be treated. Before the product's use the utilizer must determine the suitability for the intended use undertaking all risks and responsibility for whatever may happen in connection with the application. The producer and/or seller will not be considered responsible for any accident, loss or damage (immediate or consequent) originating from the use and/or the inability to use the concerned product. Albesiano Sisa Vernici srl reserves the right to change or modify at any time and without any notice the technical specifications of the product described in this data sheet.			
File: C(a)-1114 eng	Issued on: 12-05-15	Updated on: 22-05-2017	This document cancels and replaces all previous ones.