

Product Information

Electrical Insulation System
Impregnating Varnish

Elmotherm[®] 009-0051

Class B single component, ultra short drying time.
Good adhesion and flexibility, excellent resistance to moisture.
The film also has excellent anti-tracking properties and it is able to be soldered through.

Product description

Elmotherm® 009-0051 is a Class B, single component, solvent based acrylic conformal coating. It has been designed with a solvent system that balances an optimum evaporation rate with reduced safety risk and thus dries rapidly in thin films at room temperatures – for ultra short drying times, temperatures up to 80°C can be employed.

Elmotherm® 009-0051 dries to give a tough, flexible film that has good adhesion to most commonly used substrates and exhibits excellent resistance to moisture. The film also has excellent anti-tracking properties and is able to be soldered through. For ease of visual examination of coated components an Ultra-violet fluorescent tracer has been incorporated into the formulation, which fluoresces under UV light enabling non-coated areas to be identified more easily.

Elmotherm® 009-0051 has been independently tested for compatibility with various types of solder masks (both UV and 2-pack solder resists of various specifications) and was found to be compatible in all the tested cases.

The product fulfils the directive 2011/65/UE e 2002/95/CE (RoHS).

The raw materials of the product are pre-registered according to directive to CE 1907/2006 and s.m.i. (REACH).

The product does not contain polycyclic aromatic hydrocarbons and substances listed in the SVHC Candidate List.

Areas of application

Preferred applications for Elmotherm® 009-0051 are

- Print board
- Electronic device
- General use

Properties of cured resin

The tough-hard material displays very good mechanical and dielectric properties even under high temperatures. Windings impregnated with Elmotherm® 009-0051 show good bond strength. In addition, the cured material displays good resistance to the effects of liquid chemicals and their vapours.

Flow time (viscosity)

Elmotherm® 009-0051 is produced with a relative low viscosity (200-350 cps at 21°C Brookfield method).

The kind of processing, e.g. with higher room temperatures, leads to rising losses of solvent and increased viscosity.

In this case it will be necessary to adjust the value by addition of Reducer F 219.

Processing methods

Elmotherm® 009-0051 is used as a finishing varnish or as impregnating varnish. In the impregnating process it has to be carried out with a corresponding impregnating material.

The viscosity of air-drying varnish in opened container will increase permanently due to the evaporation of solvent, film forming can occur additionally. Therefore the containers should be closed carefully after application, the flow time should be checked frequently and adapted with reducer F 219 if required.

Like all solvent based products Elmotherm® 009-0051 should be stirred up carefully before each application.

Elmotherm® 009-0051 is designed for brush, spray or dipping techniques onto dry, grease free clean components.

When spraying is used, it is recommended to add 10-20 % of reducer F 219.

Drying of the varnish will be at ambient temperature normally, time can be shortened by support of heat, for instance with hot air at 70-90 °C.

It will be necessary to follow the instructions of the Material Safety Data Sheets (MSDS) for varnish and reducer.

Storage and stability

Under appropriate storage conditions, protected from humidity and solar radiations, Elmotherm® 009-0051 and reducer F 219 can be stored in unopened container at 20-30 °C for 12 months.

Properties of varnish as supplied

Property	Value	Unit
Shelf life at 30° C	12	Months
Appearance/ Colour	Liquid/ yellowish	
Density at 23°C, DIN 51757	940-960	g/l
Content of binder (1g/1h/130°C), ISO 3251	34-38	%
Viscosity (Brookfield at 21°C, spindle 2, speed 20 rpm)	200-350	cps
Flash point	19	°C

Drying condition

Surface	23 °C	80°C
Touch-dry	15 min	5 min
Non slip	1 h	0,5 h
Fully dried	24 h	10 h

Mechanical properties in dried condition

Test criterion	Condition	Value	Unit
Bond strength, Elantas test following 61083 method (helical coil)	23 °C 155°C 180 °C	> 80 - -	N
Mandrel test (3 mm) Elantas test following 60464-3	23 °C	140	°
Adhesion on steel UNI EN ISO 2409 Double application	40 µ	100	%

Temperature Index

Test criterion	Condition	Value
Proof voltage Elantas test following IEC 60172 (twisted pair)	600 V	-

