

Conformal Coating

KONTAKT CHEMIE Plastik 70

Description:

A fast drying, transparent Acrylic coating

General properties and applications:

Because of its high dielectric properties, it provides a highly isolating film to Printed Circuit boards. It will shield the electronic parts from atmospheric influences such as moisture, dust, corrosive vapours and oxidation. In this way Plastik 70 will protect the printed circuit board or other electronic components from leakage and short circuits

Because of its good adhesion properties on metal, plastic or wood, Plastik 70 can also be used as a universal protective coating on furniture or signboards.

A Plastik 70 film will also shield paper or carton from moisture, dust, ... and in this way it can protect (instruction) drawings, labels,....

Features for the film

- very good insulating properties, high dielectric strength
- aromatic free
- high stability, the film remains transparent and flexible in time
- resistant to humidity
- resistant to diluted acids and alkalines
- can be soldered through
- temperature range : -70 °C to +100 °C
- fast drying : dry in 15 to 20 minutes

Technical data

Aerosol		Clear	Red
Flashpoint	ASTM D 56	< 0 °C	< 0 °C
Density at 20 °C	FEA 605	0,92	0,92
Coverage (15 µm)		1 m ² / 200ml	1 m ² / 200ml

Bulk		Clear	Red
Flashpoint	ASTM D 56	< 0 °C	< 0 °C
Density at 20 °C	ASTM D 891	0,93	0,93
Viscosity (Brookfield)	ASTM D 2983	15mPa.s	15mPa.s
Coverage (15 µm)		12 m ² / l	12 m ² / l
Dry film		Clear	Red
Colour		Clear transparent	Red transparent
Specific bulk resistivity	DIN VDE 0360/2	8.10 ¹⁵ Ωcm +/- 1	5.10 ¹⁶ Ωcm +/- 1
Dielectric strength	DIN VDE 0360/2	110 kV/mm +/- 2	110 kV/mm +/- 2
Dielectric loss factor 1kHz, 22 °C	DIN VDE 0360/2	tan δ = 0,039 +/- 0.01	tan δ = 0,050
Relative permittivity 1kHz, 22 °C	DIN VDE 0360/2	2,40 +/- 0.1	2,65 +/- 0.1
Comparative Tracking Index (CTI number)	IEC 112	CTI 600 - pass	CTI 600 – pass
Curing time		15 - 20 min	15 - 20 min

Application instructions:

For small runs and service applications, the easiest way to use KONTAKT CHEMIE Plastik 70 is from the aerosol can.

For serial production runs, Plastik 70, in the condition as supplied, can be applied by brush or by dipping. For spraying, two parts per volume Plastik 70 is diluted with up to one part per volume Thinner (available from CRC under the name "KONTAKT CHEMIE Thinner for Plastik 70"). The precise mixing ratio must be determined by trials with the equipment concerned.

In order to obtain reproducible film thicknesses with dip coating and spraying, the viscosity of the coating solution needs to be tested regularly. A simple immersion flow cup can be used for this purpose. A suitable flow cup is that described, for example, in DIN ISO 2431 (3 mm nozzle). To obtain sufficiently accurate results, the flow time must be at least 30 s, and the temperature must be approximately the same for comparable measurements (+2 °C). When the flow time is too long, thinner is to be added a little at a time until the flow time corresponds to the value of optimum dilution.

For dip coating it is also necessary to fix the immersion time and the withdrawal speed. The withdrawal speed is not so critical. The faster the removal from the bath, the greater the film thickness.



Dipping baths have to be carefully protected to ensure no entrapment of conductive stuck-on residues. Dipping baths are not so suitable for "no-clean" applications because the solvents in the coating wash off residues of flux. Thus the flux content in the coating bath increases over time.

KONTAKT CHEMIE Plastik 70 adheres to surfaces contaminated with "no-clean" fluxes. However, for critical applications and prototypes, complete removal of flux residues is recommended. Stuck-on residues form a low-conductivity system with water diffusing through the coating film; this can result in electrochemical corrosion under the film on the circuit board. Whether these effects occur or not depends on the design of the circuit board, e.g. the potential differences between neighbouring tracks, their spacing and location. Climatic tests can be carried out to decide whether "no-clean" fluxes should be removed. In these tests, the assemblies have to be tested under conditions as close as possible to those in practice (e.g. operating voltage, power loss, position). The circuit board surface is examined under the microscope for corrosion damage at the end of the test.

Because of the short drying time (approx. 20 min) KONTAKT CHEMIE Plastik 70 is suitable for repair and maintenance services where assemblies have to be returned to operation quickly. When applying a coating, care must be taken to ensure that the surface is not colder than the environment, otherwise there will be a danger that moisture will condense and impede the adhesion of the coating.

Chemically cross-linking lacquers (e.g. the polyurethane coating KONTAKT CHEMIE Urethan 71) have in the main lower water permeability than the acrylic coating KONTAKT CHEMIE Plastik 70. However, the optimum adhesion of this coating can only be ensured after complete curing. For this, several days are needed at room temperature for polyurethane coatings, by contrast with KONTAKT CHEMIE Plastik 70.

Printed circuit board materials and electronic components generally have good compatibility with KONTAKT CHEMIE Plastik 70.

In the case of plastic surfaces (e.g. housings) a compatibility test is always recommended. It is necessary, in particular, to test its suitability for plastics susceptible to stress cracking (e.g. polycarbonate).

For the repairing of printed circuit boards it is possible to solder through KONTAKT CHEMIE Plastik 70. In this process, the coating will be partially burnt; for frequent operations it will be necessary to remove the combustion products from the air with a solder vapour extraction system. Where fairly large surfaces are involved it is recommended that the lacquer be washed off before soldering. KONTAKT CHEMIE Thinner for Plastik 70 is suitable for this.

When working with KONTAKT CHEMIE Plastik 70, make sure there is good ventilation in the workplace. Installations and equipment must be suitable for the processing of lacquers. Further information on safety can be obtained from the safety datasheet.

Available

Plastik70 Clear
Aerosol 200 ml, 400 ml
Bulk 1l, 5l

Plastik70 Red
Aerosol 200 ml
Bulk 1l

These values are not intended to be used as specifications. They are based on what we believe reliable. However it is the user's responsibility to determine the suitability.



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