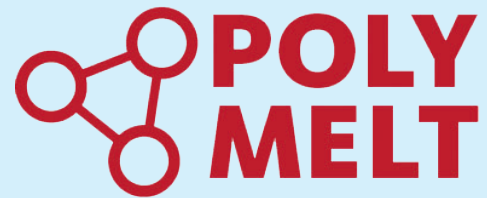


Technical Data

PMcoat AK 122-40 S



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Product

PMcoat AK 122-40 S is a transparent conformal coating, based on established urethane modified alkyd chemistry. It is designed for air driven spray applications, but it could also use for brush and cross cut nozzle applications.

PMcoat AK 122-40 S meets the latest requirements of electronics, e.g. low pin corrosion, fast curing at ambient temperatures or oven cure conditions.

PMcoat AK 122-40 S is lead-free and has no aromatic compounds in the solvent and satisfies the requirements of ROHs directive.

The varnish features superior performance in thermal and dielectric properties which are maintained when subjected to environmental stress.

Application

Coating of electronics:

- PCB's subject aggressive environment
 - automotive or marine navigation
 - Industrial
 - Corrosive gas
 - Hybrids
- SMD devices
- Discrete components
- Suitable for safety critical systems

Main Properties

- High temperature index of 135°C
- Listed in UL 94 V0
- Superior dielectric properties
- High volume resistivity including humid conditions
- Resists moisture, water, corrosive gas, chemicals
- Excellent adhesion to most surfaces
- All performance properties in very thin films
- ROHS compliant
- Eminently suitable for inspection under UV-light
- Rework able

Resistance to Harsh Conditions

Electronic components, covered with PMcoat AK 122-40 S, provide maximum resistance against contaminants such as moisture, dust and many chemicals. It withstands corrosive gas atmosphere, weak acids, fuels, oils, glycols and many other fluids used in automotive and shipping industry.

The cured coating retains good adhesion, but remains flexible to withstand distortion of the PCB.

PCB's, covered with PMcoat AK 122-40 S, can survive temperature shock and temperature cycling tests for more than 500 cycles (e.g. 40 to 125°C, IPC Test 2.6.7.1 Class 2).

Processing

PMcoat AK 122-40 S is optimized for mass production with automatic and semi-automatic applications. Especially for air driven spray applications. It is ready to use, usually no diluting is needed. The coating minimizes risk of blocking the nozzle by slight reduce of evaporation of solvent parts.

It could also be used for dipping and crosscut-nozzle coating, if the viscosity is suited to the PCB or electronic component. Thinner PMsolve 3001 is required for dilution.

PMcoat AK 122-40 S is a flammable liquid; good ventilation is important in all processing areas.

In order to achieve satisfactory wetting and fault-free adhesion with PMcoat AK 122-40 S, it is important to ensure compatibility with applied solder resist, paste and flux.

A cleaning process can optimize adhesion (e.g. plasma treatment or conventional washing of the PCB's).

Curing

Batch curing:

Ambient Temperature, for 16 h
Accelerated cure at 80°C in 0.75 h

Continuous oven curing:

Very short cure times of about 10 min can be achieved with correct temperature profile in a well-regulated in-line oven. Caution is needed to limit the rate of temperature increase to avoid bubbles creation. Guidance on curing profiles is available on request.

Re-work + Cleaning

If a component needs to be replaced on a PCB, it is possible to solder though the cured coating. Brush away residues and cover with PMcoat AK 122-40 S. Thinner PMsolve 5000 can be used to remove the

varnish within 24 h after application. Thinner PMsolve 5000 is recommended for storage cups of automatic coating equipment and cleaning of equipment.

Typical data

Viscosity, FlowTime, DIN/EN/ISO 2431, Cup 4mm, 23°C	40 ± 2 s
Non-volatile content, ISO 3251, 1,5g2h, 125°C	40 ± 2 %
Density, DIN 51757 23°C	0,89 ± 0,01 g/cm ³
Minimum Shelf life ambient Temperature	12 months
Curing time 23°C, dust dry	0,25 ± 0,05 h
Touch dry	1,0 ± 0,1 h
Cured	16,0 ± 1 h
80°C cured	0,25 ± 0,05 h
Mandrel Bend test, IEC 60464-2/IPC TM650 2.4.5.1, 3mm 0,06 mm Film	>180°
Cross Hatch Test, DIN 53151/IPC TM650 2.4.1.6	GT 0-1
Thermal Shock, 500 Cycles IPC TM 650 2.6.7.1 Class2	pass
Permittivity, IEC 60250, 23°C 10KHz	2,8
Dielectric Dissipation Factor, IEC 60250, 23°C 10KHz	0,016
Dielectric Strength, IEC 60464 part 2/IPC TM 650 2.5.6.1B; 23°C	>110 kV/mm
after 23 h water immersion, 23°C	>108 kV/mm
Volumen Resistivity, IEC 60464 part 2/IPC TM 650 2.5.17, 23°C	1x10 ¹⁵ Ohmxcm
after 23 h water immersion, 23°C	
Tracking resistance, IEC 60112	600 CTI
Water absorption, ISO 62, 23°C 24h	5.2 mg
Self-Extinguishing according to UL 94, on 1,5 mm FR4 substrate	V 0

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