

ACC17 (ESP648)

Characterization

ACC17 is a fast curing, low viscosity, low volatile, 1-component, condensation curing silicone coating. The uncured product can be applied by pouring or spraying and is readily cured to a tough, transparent rubber. It can be used to coat printed circuit boards to prevent ingress of water and environmental contaminants.

Key Features:

- Fast Room temperature cure
- Low volatile content
- Low viscosity
- 100% solids
- Fluorescent UV aid for Production QA checks
- Excellent adhesion to many substrates
- Low odour
- RoHS compliant

Technical Data

	ACC17		
Uncured Product	Tested at 25°C / 55 +/- 5% Humidity		
Colour	Pale yellow		
Rheology	Liquid		
Viscosity	400	mPas	Brookfield
Tack free time	4	min	AMB001
Cure to 300 µm	16	Min	
Cured Elastomer	After 7 days at 25°C / 55 +/- 5% Humidity on a 3 mm thick test sheet		
CTE Volumetric	310	ppm/°C	
CTE Linear	930	ppm/°C	
Volatile content	<500	Ppm	
Hardness Shore A	25		ASTM D 2240-95
Density @ 25°C	1.01	g/ml	ASTM D70
Flash Point	>150	°C	ASTM D93
Pensky Martin (CC) Solids	100	%	
Working Temp.	-50 - +200		°C
	Thickness, microns	Cure Time, minutes	
	120	6	
	200	9	
	230	12	
	300	16	

	Electrical properties		
Volume resistance	3.44E+14	ohm*cm	ASTM D-257
Surface Resistivity	3.01E+14	ohm	ASTM D-257
Dielectric Strength	18.5	kV/mm	ASTM D-149
Dielectric Constant @1kHz	2.66		ASTM D-150

Storability / Storage

When stored in original containers at 5 to 40°C the shelf life is expected to be 12 months. Once opened, refrigerated storage at <10°C is recommended.

The above given values are product describing data. Please consult the 'delivery specification' for binding product specifications. Further data about product properties, toxicological, ecological data as well as data relevant to safety can be found in the safety data sheet.

Application Technique

Application

The bulk product may be sprayed or brushed onto the circuit. Spraying or brushing will give a film thickness of 100 to 1000 microns. The product contains an UV trace to allow inspection of the board after coating to ensure complete and even coverage. Boards should be thoroughly cleaned before coating for best adhesion / performance. Coating over no clean fluxes is possible so long as other surface contaminants are not present.

Cleaning

The boards should be thoroughly cleaned before coating. This is required to ensure that satisfactory adhesion to the substrate is possible. Some flux residues must be removed, as they become corrosive if left on the PCB. ACC manufacture a range of 100% Ozone Friendly cleaning products - both solvent and water based, all clean to military standards (please contact ACC for further information).

Dip coating

This is not recommended for large scale production, small baths of < 5 litres are suitable but the ACC17 must not be exposed to the atmosphere for >4 minutes during any coating campaign and must be returned to the original container and sealed. Please note that continual use of ACC17 by this method will reduce the life of the product and may result in poor coating quality.

Spraying

Dispensing platforms include:

Nordson SL940

Applicator SC300 swirl coat 0.61mm low cavity. 60 – 100 mm/second and 25 psi.

Without dilution a coating thickness of 300 – 400 microns can be achieved which is touch dry in 4 minutes at 25°C and 55% humidity.

Using applicator SC300 swirl coat, 0.61mm low cavity, 200 – 300 mm/second, 30 – 55 psi

At the maximum recommended dilution of:

20 parts ACC17

80 parts ACC34 or ACC34UV

a coating thickness of 200 - 300 microns can be achieved which is touch dry in 5 minutes at 25°C and 55% humidity.

PVA Delta 6:

Applicator FCS300 ES

Without dilution a coating thickness of 140 – 180 microns can be achieved which is touch dry in 4 minutes at 25°C and 55% humidity.

At the maximum recommended dilution of:

20 parts ACC17

80 parts ACC34 or ACC34UV

a coating thickness of 50 – 80 microns can be achieved which is touch dry after 5 minutes at 25°C and 55% humidity.

Temperature, °C	Time
16	48 hours
45	24 hours
60	1.5 hours
125	0.5 hours

Brushing

The coating should be used at room temperature (above 16°C) using a good quality brush apply the product gently such as to achieve a good coating and not to disturb wiring. The board should be left to cure at 16 to 45°C with a relative humidity of >40%.

Drying time / curing conditions

For brushing and manual spraying the film will be touch dry after 4 minutes at 25°C / 55% humidity) and the full properties of the coating will be obtained after 16 minutes at room temperature.

Double coating

Whilst this should not normally be required, a second coating may be applied after the first coating is cured to ensure the two coats bond together.

It is absolutely important to check the compatibility in preliminary tests if unknown substrates are used.

Safety

Please observe our EC safety data sheets and the safety remarks on our container labels when handling our products. The dangerous goods regulations and the accident prevention regulations of the professional associations must be particularly observed. Keep the EC safety data sheet of the applied product at hand since it provides you with useful instructions for the safe use and disposal of the product as well as for actions to be taken in case of accidents.

We reserve the right to modify the product and technical leaflet.

Our department for applied technique is always at your service for further information and advice.

Our technical advice and recommendations given verbally, in writing or by trials are believed to be correct. They are neither binding with regard to possible rights of third parties nor do they exempt you from your task of examining the suitability of our products for the intended use. We cannot accept any responsibility for application and processing methods which are beyond our control.

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CHT R. Germany GMBH

Postfach 12 80, 72002 Tübingen, Bismarckstraße 102, 72072 Tübingen, Germany

Telephone: 07071/154-0, Fax: 07071/154-290, Email: info@cht.com, Homepage: www.cht.com