

Data sheet: **Synthite AC-46**

Designation **Synthite ER-46 Air drying varnish**

DESCRIPTION

SYNTHITE AC-46 conforms to Military Specification MIL-V-173C, and to UL as Conformal coating and Insulation. It is a high temperature electrical insulator that dries very quickly to a tough and clear film. SYNTHITE AC-46 is an excellent coating for printed circuits boards and for all kinds of electrical and electronic devices; it provides excellent abrasion resistance, and a very good chemicals and moisture protection.

PROPERTIES

Synthite AC-46 has the following excellent properties:

- UL homologation (files OBOR2.E317427, QMJU2.E317426 and OBJS2.E317429)
- Fungicidal
- Fast drying - Units can be handled in 30 minutes
- Easy application - It can be Applied by dip, brush or spray
- Easy quality check - Contains an UV tracer
- Excellent printed circuit board coating
- Superior chemical and abrasion resistance
- Excellent adhesion

CHARACTERISTICS

Physical properties	
Color	clear
Specific gravity @ 25oC	900±30 g/L
Viscosity, ISO Cup 4 @ 25oC	50-65 seconds
Viscosity, Ford Cup 4 @ 25°C	60-90 seconds
Build, DFT (ASTM D-115-55)	0.060 - 0.75 mm
Corrosive effect on copper	None
Air-drying time on copper strip set to touch	Time to touch: 10 min

Electrical properties	
Electric strength, (dry / 0.025 mm film Thickness) ASTM D-115	2000 V/mm
Electric strength, 24 hours in water/ 0.025 mm film thickness (ASTM D-115)	1200V/mm
Creep resistance CTI (IEC 60112)	600M

Chemical resistance

(ISO 2812 method 2, 168-hour exposure and on dried film thicknesses of 40 µm. Drying: 24h @ RT + 24h @ 60°C),

	Blistering	Rusting	Cracking	Test method
Salt water	no	no	no	ISO 4628/2-3-4
Water	no	no	no	ISO 4628/2-3-4
10 % sulfuric acid	no	no	no	ISO 4628/2-3-4
1 % NaOH dilution	no	no	no	ISO 4628/2-3-4
IEC 60296 transformer oil IEC 60296, ASTM D 115-55			Test OK	ASTM D 115-55
Corrosion resistance (salt fog)		hours	200	ISO 9277
Humidity resistance		hours	72	ISO 6270

Thermal class (UL 1446 FILE)

Twisted pairs, MW28C magnet wire	130°C
Twisted pairs, MW35C magnet wire	180°C

Fungus resistance, MIL-V-173C-2

Aspergillus Niger	Passed
Aspergillus Flavus	Passed
Penicillium Funiculosum	Passed
Trichoderma Sp.	Passed

APPLICATION

Typical applications for Synthite AC-46 are:

- Electrical connectors
- printed circuit boards
- Field coils
- resistors
- Control coils
- Capacitors
- Solenoid coils
- Switches

APPLICATION GUIDELINES

SYNTHITE AC-46 may be applied by brushing, dipping or spraying. For many applications it can be used as supplied, but when required it can be diluted. Dilution for spray application is usually with 20-25% of Dolph's T-200; for conformal coating applications with automatic machines the dilutor is Dolph's T-200X.

The film thickness should be 40 microns maximum per each application in order to allow a complete solvent release and a proper cure. SYNTHITE AC-46 is air drying and it can be handled in 30 minutes. For optimum chemical and abrasion resistance, allow to dry in air for 24 hours at least.

STORAGE AND STABILITY

Store in a cool dry place (max 30°C) away from direct sunlight. Protect from moisture and humidity. Shelf life is 24 months when stored in closed original container at max 30°C.

HARDENING PRECAUTION

SYNTHITE AC-46 must be intended for industrial/professional use only. For more details, see the SDS.

SPECIAL PRECAUTIONS

When SYNTHITE AC-46 is applied by spray methods, care should be taken to keep clean the spraying area. Filters and other waste from the spraying area should be soaked in water and disposed off in safety containers. Due to their exothermic curing, droplets of overspray may generate huge amount of additional heat; take care on it.

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