

ABchimie746E UV LED

June 2016

Soft conformal coating
Curing by UV/LED - Dual cure

The new LED curing technology is a revolution. Indeed, unlike conventional UV lamp, LED technology doesn't generate toxicity during exposure, there is no need for special aspiration for evacuation of ozone produced by UV and, there is no risk for the operator.

ABchimie is the only manufacturer offering a conformal coating developed especially for this type of lamp which provides process speeds comparable to UV lamps without the disadvantages.

PRODUCT DESCRIPTION

ABchimie746E UV LED is a transparent single component designed to protect printed circuit boards subjected to harsh environments. It has dual cure technology (UV/LED - humidity) for crosslinking in the shadows.

ABchimie746E UV LED may be applied by brush, pad printing, spray machine and of course selective coating machine which is the ideal way to apply. The low viscosity of our system permits to limit the thickness around 80 microns.

ABchimie746E UV LED is compliance with REACH and RoHS regulations. If you want a certificate, please contact us (info@abchimie.com).

FEATURES

- Excellent adhesion in harsh weather conditions.
- Fluorescent UV to allow control of the deposited varnish layer.
- Operating temperature range - 55 ° C to + 150 ° C.
- Can be soldered through without fear of highly toxic gases being produced,
- Resistant to mould growth.
- Excellent dielectric properties.
- Very fast curing under UV/LED exposure
- Moisture cure for shadowed areas
- 0 VOC
- Space ground reduced compared with solvent bases.
- High speed process, increase of the productivity.
- Utilization with select coat machine (used on head SC200, SC280, SC300 and SC400)

APPLICATION

ABchimie746E UV LED can be applied by brush, spray or selective coating machine:

Spraying (two crossed layers)	60-80 microns
Brushing	40-60 microns
Selective coating machine	70-80 microns (380mm/s)

The relative humidity of at least 50% is recommended for the second polymerization mechanism.

Before applying the printed circuit board must be clean, dry and free of moisture. Pcb's are humidity sensor, it is important to remove it before coating application. A stage in an oven for 4 hours at 80 ° C is usually sufficient.

The varnish ABchimie746E UV LED contains a fluorescent tracer which permit to check good varnish deposit, inspection circuits is facilitated. Fluorescence is more important the thickness applied is high.

PREPARATION OF THE PCB

PCBs must be free of moisture and perfectly clean (no dust, grease, wax...). Adhesion of the coatings is depending. All traces of flux are eliminated because they can become corrosive and create malfunction of the circuit.

CLEANING

To clean equipment or clean uncured varnish ABchimie746E UV LED, we recommend using SND solvent.

CURING CONDITIONS

ABchimie746E UV LED cures with UV LED rays and moisture for the second cure mechanism.

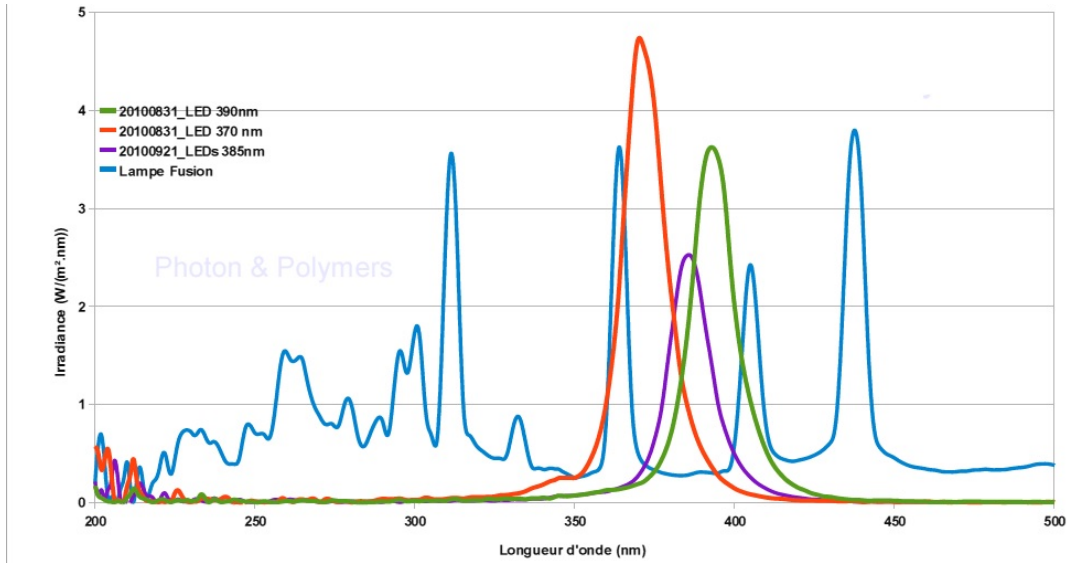
UV LED Curing :

It is important to use the appropriate LED equipment, as well as the recommended settings for the best properties of ABchimie746E UV LED:

LED lamp 395 nm
Power : 8W/cm²
Exposure time: 0,2s mini
Distance LED light – varnish : 0 to 10cm

A slight residual tack due to the oxygen in the air can appear. It disappears a few minutes after passing under the lamp.

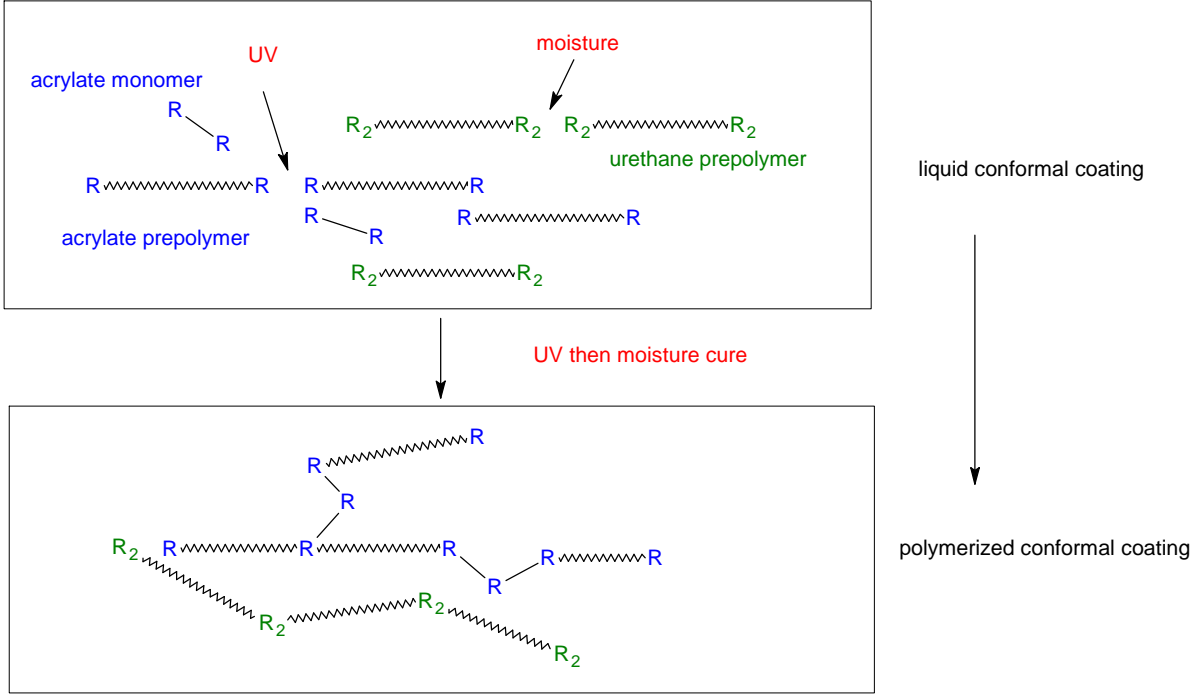
The following spectrum shows the wavelength range emitted by the LED lamp, different from the spectrum of a mercury lamp .



Moisture cure:

Ambient temperature
50% minimum relative moisture

Curing mechanism :



PROPERTIES

ABCHIMIE746E UV LED liquid

Base	Urethane / Acrylate
Appearance	Transparent yellow
non-volatile residue	100%
Viscosity at 25 ° C	75 - 100 cSt
Flash point	> 100 ° C
Film Thickness	30 to 150 microns
Pot life	12 months

ABCHIMIE746E UV LED cured

Appearance	Transparent
Adhesion ISO 2409	Class 0 (excellent)
Volume resistivity	1×10^{14} Ohm / cm
Insulation resistance (Ω)	10^{12} (EN 61086)
Dielectric strength	60kV/mm
VRT + humidity (IEC 60068-2-38)	+65°C et 93%HR / -10°C, 5°C/mn,
Thermal Shock	- 65°C + 125°C, 30mn/30mn, 50 cycles
Voltage	> 1750V DC (NF EN 61086)
Temperature range from	- 55 ° C to + 150 ° C
Varnish removal method	Mechanical (micro-abrasion)

PACKAGING:

ABchimie746E UV LED

1 liter
5 liters

REFERENCES

ABchimie746E UV LED 01 L
ABchimie746E UV LED 05 L

STORAGE:

ABchimie746E UV LED must be stored in an opaque container, sealed away from excessive heat, at temperatures not exceeding 40 ° C. The varnish ABchimie746E UV LED cures under UV action, it musn't be exposed to any light source.

This varnish also crosslinking with moisture, make sure there is no moisture in the deposition process and in cans open. After opening a bottle, it is recommended to purge these cans started with a dry inert gas (nitrogen) to prevent polymerization of the coating during storage.

In all cases, refer to the safety data sheet to ensure good storage conditions.

All information is given in good faith but without warranty. Properties are given as a guide only and should not be taken as a specification. ABchimie cannot be held responsible for the performance of its products within any application determined by the customer, who must satisfy themselves as to the suitability of the product.