

# TECHNICAL DATA SHEET

**ABchimie805UV LED**  
(temporary name L800-1)

Oct. 2024

Conformal coating UV LED – high viscosity

## PRODUCT DESCRIPTION

ABchimie805UV 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 shadow areas.

ABchimie805UV LED is proposed with high viscosity (>600cP) to be applied with jetter or spray.

## MAIN CHARACTERISTICS

- High viscosity for low flowing,
- Excellent adhesion in harsh environments,
- Fluorescent under UV light to control of the layer of conformal coating deposit,
- Operating temperature range -50°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,
- Low VOC,
- Floor space saving compared with solvent based,
- High speed process, increase of the productivity,
- Can be applied with select coat machine (jetter, spray).

ABCHIMIE805UV LED can be applied by brush, spray or selective coating machine:

**Recommended thickness**

**30 - 300 microns**

## PREPARATION OF THE PCB

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

Minimum temperature of 16°C and minimum relative humidity of 50% are recommended for coating application. The relative humidity of at least 50% is recommended for the second polymerization mechanism.

## CLEANING

To clean equipment or clean uncured varnish ABchimie805UV LED, we recommend using SND or ABClean solvents (**no aqueous solutions**).

## CURING CONDITIONS

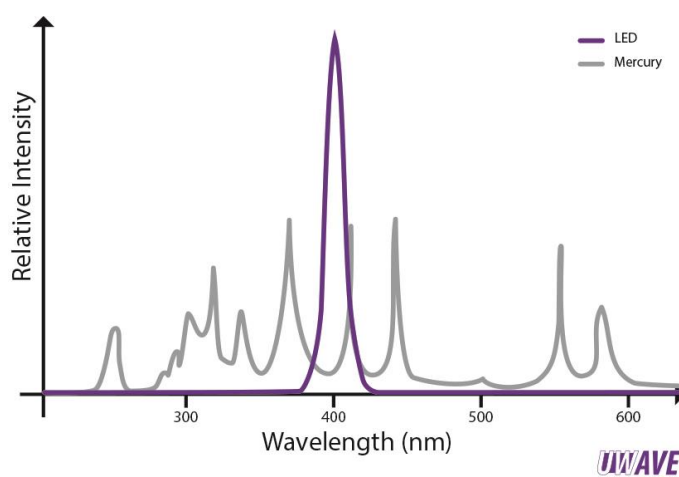
ABchimie805UV LED cures with UV LED rays and moisture for the second cure mechanism.

### **UV LED Curing :**

It is important to use the appropriate LED equipment, as well as the recommended settings for the best properties of ABCHIMIE805UV LED:

**LED lamp 395 nm**  
**Distance LED light – varnish : 0 to 10cm**  
Minimum UVA2 dose : **3000mJ/cm<sup>2</sup>** (100µm)

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



Due to LED technologies, a slight residual tack due to the oxygen in the air can appear. It decreases few minutes after passing under the lamp and disappears after the second curing with moisture, 7 days after.

ABchimie805UV LED has a perfect tense surface after few minutes, if not it is probably due to a low intensity of power of LED lamp.

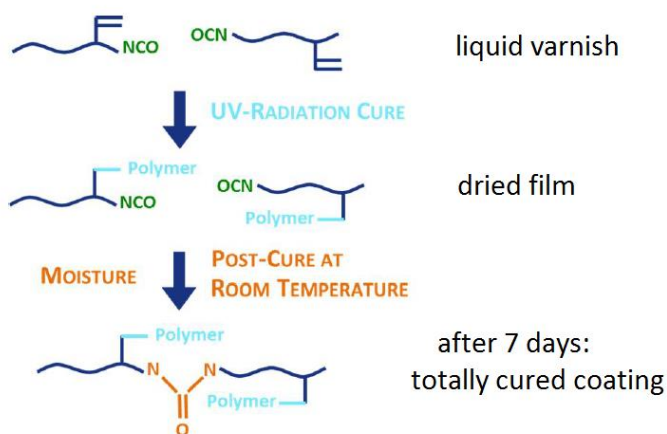
The UVA2 dose is **a minimum dose recommended**. The intensity depends on the lamp power and the lamp distance. UV dose may be increased by a longer exposure time. A higher dose of UV or a overexposure will not damage the product.

However, **a lower UVA dose can have a detrimental effect on product final properties** therefore it is very important to ensure minimum recommended UVA dose is met with your curing system.

### Moisture cure:

Ambient temperature, 50% minimum relative moisture for 7 days

Curing mechanism :



## PROPERTIES

### Liquid ABchimie805UV LED

|                      |                      |
|----------------------|----------------------|
| Nature               | Urethane Acrylic     |
| Aspect               | Liquid               |
| Colour               | Translucent (yellow) |
| Non-volatile residue | > 98%                |
| Viscosity at 25 ° C  | 600 - 1000 cP        |
| Film Thickness       | 30 to 300 microns    |

### Cured ABchimie805UV LED

|                                                        |                                                                     |
|--------------------------------------------------------|---------------------------------------------------------------------|
| Appearance                                             | Transparent                                                         |
| Adhesion ISO 2409                                      | Class 0 (perfect)                                                   |
| Volume resistivity                                     | In progress                                                         |
| Insulation resistance ( $\Omega$ )                     | In progress                                                         |
| Dielectric strength                                    | In progress                                                         |
| CTI (DIN EN 60112)                                     | In progress                                                         |
| Tg                                                     | In progress                                                         |
| CTE (T < Tg)                                           | In progress                                                         |
| CTE (T > Tg)                                           | In progress                                                         |
| Insulation resistance in a humid environment:          |                                                                     |
| SIR according to IPC TM 650 2.6.3.4                    | In progress                                                         |
| SIR according to IPC TM 650 2.6.3.3                    | In progress                                                         |
| Breakdown voltage<br>(according to IPC TM 650 2.5.7.1) | > 1500V AC                                                          |
| Temperature range from                                 | -50°C to + 150 °C                                                   |
| Varnish removal method                                 | Mechanical (micro-abrasion)<br>Locally with chemical stripper (DVP) |

## **CONDITIONNING**

### **ABCHIMIE805UV LED**

Can 1 kg  
Can 5 kg

## **REFERENCES**

ABchimie805UV LED 01KG  
ABchimie805UV LED 05KG

### **Cleaner**

Can 5 liters  
Spray (box – 12)

SND 05L  
SND400 B

Can 5 liters  
Spray (box – 12)

ABclean 05L  
ABclean400 B

### **Stripper DVP**

Can 1 liter

DVP 01L

Version is available with UV curing (mercury lamp) or LED curing, in cartridge, 1L can or 5L can.

## **STORAGE AND DATE OF USE:**

Storage temperature : 5 to 30°C

A short stay at a lower temperature (especially during transport) will not damage product's properties. In all cases, refer to the safety data sheet to ensure good storage conditions.

ABchimie805UV LED cures with UV radiations so it must not be exposed to any light source. It must be stored in a dark container, away from hot temperatures (less than 40°C).

ABchimie805UV LED also cross-links with humidity, so make sure there's no humidity in the application process, in the tanks used, or in opened cans. After opening a can, it is advisable to purge the opened can with a dry, inert gas (nitrogen) to prevent polymerization of the varnish during storage.

Date of use : 6 months after manufacturing.

*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.*