

## Conformal Coating (UV -Dual cure)

### PRODUCT DESCRIPTION

ABchimie526UV DS55 MS is a transparent single component designed to protect printed circuit boards subjected to harsh environments. It has dual cure technology (UV / humidity) for crosslinking in the shadows. It has been developed for all applications where a fast process is necessary.

ABchimie526UV DS55 MS 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.

The conformal coating ABchimie526UV DS55 MS is compliance with REACH and RoHS regulations. If you want a certificate, please contact us ([info@abchimie.com](mailto:info@abchimie.com)).

### FEATURES

- Excellent adhesion in harsh weather conditions,
- Fluorescent UV to control of the layer of conformal coating deposit,
- 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,
- No COV,
- Moisture cure for shadowed areas,
- **Approved IEC EN 61086,**
- **Approved UL 94V0 (QMJU2-E308681),**
- **Approved NF 16101, 16102,**
- Very fast curing under UV exposure,
- Space ground reduced compared with solvent bases,
- High speed process, increase of the productivity,
- Exists in low viscosity DS55 MS for select coat machine (used on head SC200, SC280, SC300 and SC400).

### APPLICATION

ABchimie526UV DS55 MS can be applied by brush, spray or selective coating machine:

|                               |                          |
|-------------------------------|--------------------------|
| Spraying (two crossed layers) | 60-80 microns            |
| Selective coating machine     | 80-120 microns (380mm/s) |

A minimum temperature of 16°C and a relative humidity of at least 50% is recommended for the application of ABchimie526UV DS55 MS. 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 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 ABchimie526UV DS55 MS 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. We recommend using cleaning solvent or detergents SND or CIPEX 40 or 42.

## CLEANING

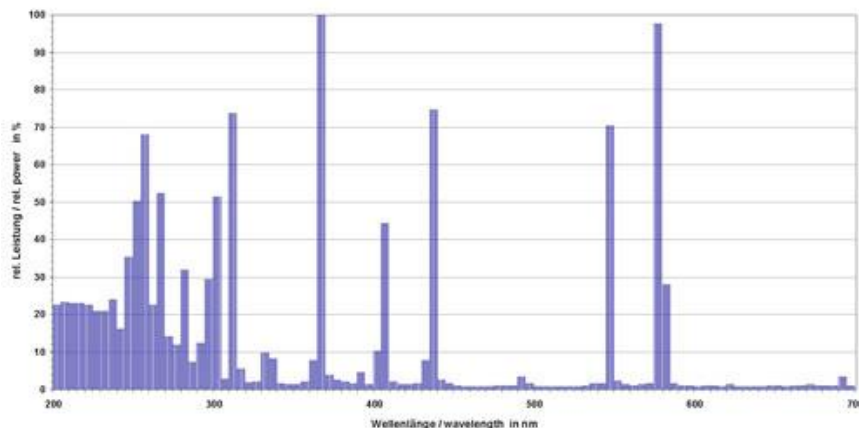
To clean equipment or clean uncured varnish ABchimie526UV DS55 MS, we recommend to use SND or DNS solvents.

## DRYING TIMES AND CURING CONDITIONS

ABchimie526UV DS55 MS conformal coating polymerises with UV technology and moisture for the second cure mechanism.

### UV Curing:

It is important to use the appropriate UV equipment, as well as the parameters recommended to obtain the optimal properties of the ABchimie526UV DS55 MS conformal coating. The advised equipment is a **mercury lamp**.



*Emission spectrum of mercury lamp (UV between 200 and 400nm)*

Minimum UVA dose : **1000mJ/cm<sup>2</sup>** (100µm)

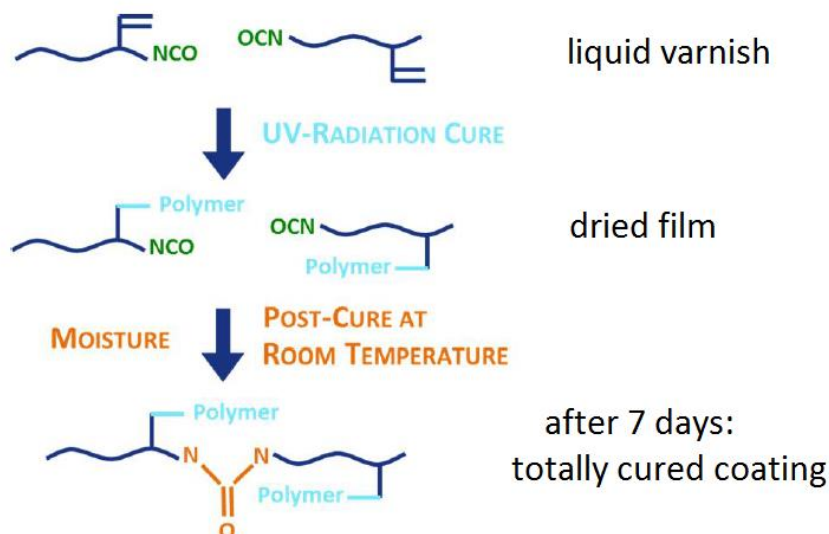
A good curing means by a **tack-free surface**, after irradiation.

The UV dose given is a minimum to guarantee a good curing of varnish. A higher dose of UV or a overexposure will not damaged the product.

#### Moisture cure:

Ambient temperature, 50% minimum relative moisture

#### Curing mechanism :



## PROPERTIES

### *ABchimie 526UV DS55 MS liquid*

|                                |                     |
|--------------------------------|---------------------|
| Base                           | Urethane / Acrylate |
| Appearance                     | Transparent yellow  |
| non-volatile residue           | > 97%               |
| Viscosity at 25°C (ASTM D4212) | 50 - 100 cSt        |
| Flash point                    | > 100 ° C           |
| Film Thickness                 | 30 to 150 microns   |

### *ABchimie 526UV DS55 MS cured*

|                           |   |
|---------------------------|---|
| Appearance                | Transparent   |
| Adhesion ISO 2409         | Class 0 (excellent)                                     |
| Volume resistivity        | 1 x 10 <sup>14</sup> Ohm / cm                           |
| Insulation resistance (Ω) | 10 <sup>12</sup> (EN 61086)                             |
| Dielectric strength       | 60kV/mm   |
| CTI (DIN EN 60112)        | >600  |
| Tg                        | 50°C  |
| CTE (65 to +120°C)        | 528ppm/°C   |
| Hardness Shore D          | 40  |
| VRT                       | - 55°C+125°C, 10°C / min, landing 25 minutes, 20 cycles |
| VRT                       | - 25°C+25°C, 5°C / min, 15 min level, 100 cycles        |
| Thermal Shock             | - 40°C +90°C, 30mn/30mn, 1000 cycles                    |

|                        |  |
|------------------------|--|
| Voltage                | > 1750V DC (NF EN 61086)                                 |
| Temperature range from | - 55 ° C to + 150 ° C                                    |
| Flammability           | Self-extinguishing according to UL94 VO                  |
| Salt Fog               | 35 ° C, 5% salt, 2ml / h (NF EN 61086)                   |
| Varnish removal method | Mechanical (micro-abrasion)<br>Locally with stripper DVP |

## PACKAGING:

### **Varnish ABchimie 526UV DS55 MS**

|          |                            |
|----------|----------------------------|
| 1 liter  | ABchimie 526UV DS55 MS 01L |
| 5 liters | ABchimie 526UV DS55 MS 05L |

### **Cleaner (not cured varnish)**

|               |         |
|---------------|---------|
| Bulk 5 litres | SND 05L |
| Bulk 5 litres | DNS 05L |

## STORAGE AND SHELF LIFE:

Storage temperature: 5 to 30°C

A temporary lower or higher temperature (maximum 40°C) during few days (transport) doesn't distort varnish properties.

ABchimie526UV DS55 MS must be stored in an opaque container, sealed away from excessive heat. The varnish ABchimie 526UV DS55 MS 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.

Date by use: 12 months after the date of manufacturing

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.*

*Toutes ces informations sont données en toute bonne foi mais sans garantie. Chaque application étant différente, il est vivement conseillé d'effectuer des tests préalables. Les spécifications concernant les propriétés sont données à titre indicatif et non comme étant spécifiques.*