

HumiSeal[®] UVA300 Series

UV Curable Conformal Coatings

Technical Data Sheet*

HumiSeal UVA300 series coatings are one-part, high solids, dual-cure acrylated polyurethane conformal coatings possessing LED cure capability. LED cure technology benefits from having lower energy consumption, reduced temperatures, no ozone or UV-C generation and increased equipment lifetime.

HumiSeal UVA300 Series has been formulated with the same base ingredients in different ratios of monomer/oligomer to alter the viscosity of the blends. The UVA300 series has been developed to have the following characteristics:

- Tack free cure with LED UV light at 385nm or 395nm
- Different viscosity ranges available for selective coating equipment (see below).
- Application possible at elevated temperatures to give increased process stability and reduced applicator pressure.
- Secondary cure mechanism that will fully cure any unexposed areas of the coating within 7 days at ambient conditions**
- Fluoresce under UV light to allow coating inspection and can be applied by all selective coating equipment.
- High flexibility compared with other UV curable conformal coatings, giving improved adhesion and performance in thermal cycling tests.
- Excellent chemical and moisture resistance.

* This technical data sheet contains provisional data which may be revised

**At higher temperature or humidity levels, this time may be reduced.

HumiSeal UVA300 Series are non-flammable, contain no VOCs or solvent, and are RoHS Directive 2015/863 compliant.

Product	Viscosity, CPS	Solids Content, %	Density, g/cm ³
UVA300LV	100 ± 20	≥ 95	1.0-1.1
UVA300	300 ± 50	≥ 95	1.0-1.1
UVA300HV	1500 ± 200	≥ 95	1.0-1.1
UVA300 Gel	10,000 ± 1000	≥ 95	1.0-1.1

Typical Properties of HumiSeal[®] UVA300

Density
1.0 to 1.1 g/cm³

Minimum Solids Content
95 %

Viscosity, per Fed-Std-141, Meth. 4287	
300 ± 50 centipoise	
Recommended Coating Thickness	25 - 130
microns	
Shelf Life at Room Temperature, from DOM	12 months
Flash Point	
>100°C	
Recommended UV Cure	See curing section below
Thermal Shock, 50 cycles per MIL-I-46058C	-65°C to 125°C
Shore Hardness A / D	80 / 28
Flammability, meets UL-94	V-1
Dielectric Withstand Voltage, per MIL-I-46058C	> 5000 V
Surface Insulation Resistance, per IPC-J-STD-004 (mod.)	8.75 log ₁₀ Ohms
Resistance to Chemicals	
Excellent	

Application of HumiSeal[®] UVA300 Series

Conformal coatings can be successfully applied to substrates that have been cleaned prior to coating and also to substrates assembled with low residue, 'no clean' assembly materials. Users should perform adequate testing to confirm compatibility between the conformal coating and their particular assembly materials, process conditions and cleanliness level. Please contact HumiSeal for additional information.

HumiSeal[®] UVA300 series are specifically formulated for immediate use. No additional dilution is required.

Spraying

- HumiSeal UVA300LV – Low viscosity version suitable for airless film coater type application.
- HumiSeal UVA300 – Standard viscosity version suitable for swirl and spray type applications.
- HumiSeal UVA300HV – High viscosity version suitable for standard selective coating equipment.
- HumiSeal UVA300 Gel – Gel version suitable for automated needle dispensing, but may also be applied manually.

The air source used for spraying must be dry (a dry inert gas is highly recommended) to prevent premature curing via the secondary cure mechanism. The spraying should be done with adequate ventilation so that the vapor and mist are carried away from the operator.

Brushing

HumiSeal[®] UVA300 series may be applied by brush for rework or touch up only. Brush must be cleaned with solvent promptly after use.

Clean Up

To flush equipment and clean uncured HumiSeal[®] UVA300 series, non-alcohol based solvents should be used. HumiSeal[®] Thinner 521/Thinner 521EU is recommended.

Curing

Rework

HumiSeal® UVA300 series are highly cross-linked UV cured coatings. The cured film has a high degree of environmental and chemical resistance and will be more difficult to remove than traditional conformal coatings. Thermal displacement and mechanical abrasion are suitable options for rework of HumiSeal® UVA300 series.

Storage

HumiSeal® UVA300 series are photosensitive. The product should not be exposed to direct sunlight or full spectrum fluorescent lighting. Material should be stored away from excessive heat, in tightly closed opaque containers at 0 to 25°C to ensure maximum shelf life is achieved. Prior to use, allow the product to equilibrate for 24 hours at room temperature. HumiSeal® UVA300 series are moisture curing coatings and care should be taken to protect process vessels and partial containers from moisture. Partial containers must be purged with a dry, inert gas such as dry air, nitrogen or argon before closure, otherwise premature polymerization by atmospheric moisture will occur.

Caution

Application of HumiSeal® Conformal Coatings should be carried out in accordance with local and National Health and Safety regulations.

Use only in well-ventilated areas to avoid inhalation of vapours or spray. Avoid contact with skin and eyes.

Consult MSDS/SDS prior to use.

Contact HumiSeal®

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