4200UV

UV Curable Conformal Coating

4200UV is a 1-part, UL-certified conformal coating formulated for rapid cure upon exposure to UV light. It is a low viscosity coating that retains high fluorescence after curing for ease of inspection, curing to a smooth, glass-like finish. The coating contains a secondary moisture cure mechanism that allows for curing in shadowed areas.

4200UV is a cost-effective option for large volume projects where both fast turn-around and higher throughput are required. It creates a rugged barrier protecting circuits from humidity, corrosion, fungus, dust, thermal shock and high voltage arcing.



Features and Benefits

- Certified UL746E
- Certified IPC-CC-830C
- Secondary moisture cure for shadowed areas
- Low viscosity, works well with automated dispense equipment
- Maintains high fluorescence after curing

Cured Properties

Resistivity	3.4 x 10^{14}	Ω·cm
Dielectric Strength	1 000	V/mil
Dielectric Withstand Voltage	>1 500	V
Insulation Resistance	1 x 10^{13}	Ω
Glass Transition Temperature (T_g)	72	°C
CTE Prior T_g	78 ppm/	°C
CTE After T_g	213 ppm/	°C
Service Temperature Range	-65–150	°C

Available Packaging

Cat. No.	Packaging	Net Vol.	Net Wt.
4200UV-945ML	Can	945 mL	1.00 kg
4200UV-3.78L	Can	3.78 L	4.02 kg

Usage Parameters

Recommended Film Thickness	50–125	µm
Theoretical Coverage @ 50 µm	186 900	cm^2/L
Storage Temperature Range	4–40	°C

Contact Information

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Uncured Properties

Viscosity @ 25 ˚C	160	cP
Density	1.06	g/mL
Percent Solids	96	%
Shelf Life	1	y
Calculated VOC	585	g/L

4200UV

Safety Data Sheet

Read the product SDS before using this product (downloadable at www.mgchemicals.com).

Recommended Preparation

Clean the substrate with Isopropyl Alcohol, MG #824, so the surface is free of oils, dust, and other residues.

Brush

4200UV can be applied by brush for rework or touch-ups. Thinning is not required for most brush applications. Desired coating thickness can be achieved in a single application. Applied coating can be cured immediately.

Manual Spray Guns

4200UV can be readily sprayed using conventional spray guns. Ensure air lines are dry to prevent any premature curing. Use a standard fluid nozzle gun with a minimum tip diameter of 0.8–1.0 mm. The settings listed below are recommendations; however, performance will vary with different brands:

Inlet	Air flow	Air cap
20–40 psi	10–15 SCFM	8–10 psi

Dip Coat

Due to the dual curing nature of this coating, it is important to control exposure to light and moisture to prevent premature curing.

1. Hang the PCB on a dipping arm.
2. Slowly lower the PCB into a tank and leave immersed in the coating for 2 min to allow penetration.
3. Slowly withdraw the PCB from the tank at a rate of approximately 6" per minute.
4. Applied coating can be cured immediately.

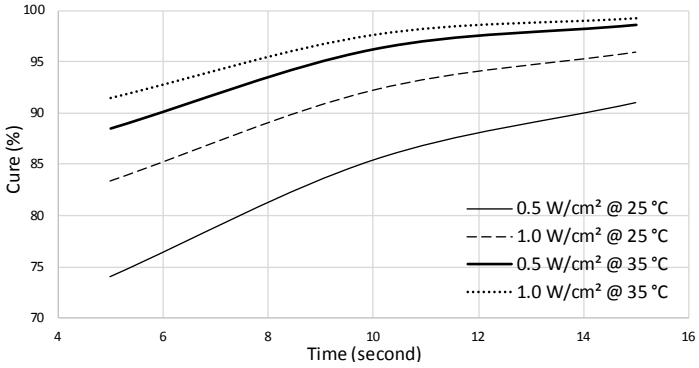
Selective Coating

The settings listed below are recommendations and performance will vary with different brands.

Settings	PVA	Nordson Asymtek
Valve	FCS300-ES	SC-350
Air Pressure	1.5 psi	4 psi
Fluid Pressure	20 psi	5 psi
Dispense Height	10 mm	13 mm
Pass Width	4 mm	2.5 mm
Coating Speed	100 mm/s	559 mm/s

Cure Settings

The cure settings for 4200UV depends on using the correct UV light intensity at the correct wavelength bandwidth along with other variables like temperature and humidity. To achieve a tack-free surface, expose the coating to the dosages outlined in the table below. Increasing the temperature will accelerate curing and subsequently lower the required UV exposure as can be seen in the graph below. The cure behaviour of 4200UV was tested between 320-500nm covering both the UVA and UVB bands and has been designed for use with standard 'H' or 'H+' type bulbs. 4200UV contains a secondary moisture cure mechanism which will cure any shadowed areas within 24 hours at ambient moisture.



Temperature		Irradiance	Dose
25 °C	Min.	0.5 W/cm^2	3.6 J/cm^2
	Max.	1.0 W/cm^2	3.6 J/cm^2
35 °C	Min.	0.5 W/cm^2	0.99 J/cm^2
	Max.	1.0 W/cm^2	0.97 J/cm^2

Storage and Handling

Store between 4 and 40 ˚C in a in a dry area, away from sunlight (see SDS).

Disclaimer

This information is believed to be accurate. It is intended for professional end-users who have the skills required to evaluate and use the data properly. M.G. Chemicals Ltd. does not guarantee the accuracy of the data and assumes no liability in connection with damages incurred while using it.