



Technical Bulletin

UR-3100 Series

UV Curable Solder Mask

I. Description:

UR-3100 Series UV curable solder mask is a one component UV curable solder mask manufactured by Sanwa Chemical that has the following benefits.

1. Excellent screen printability
2. Completely cured by UV light.
3. Excellent adhesion to copper
4. Good heat resistivity and electrical properties.
6. Easy to work with due to no-solvent content
7. Excellent for fully automated printing lines.
8. Can be used along with the hot air level process.

II. Operating Parameters

Make-Up Mix and use as received.

III. Nomenclature (See ordering sheet for more details)

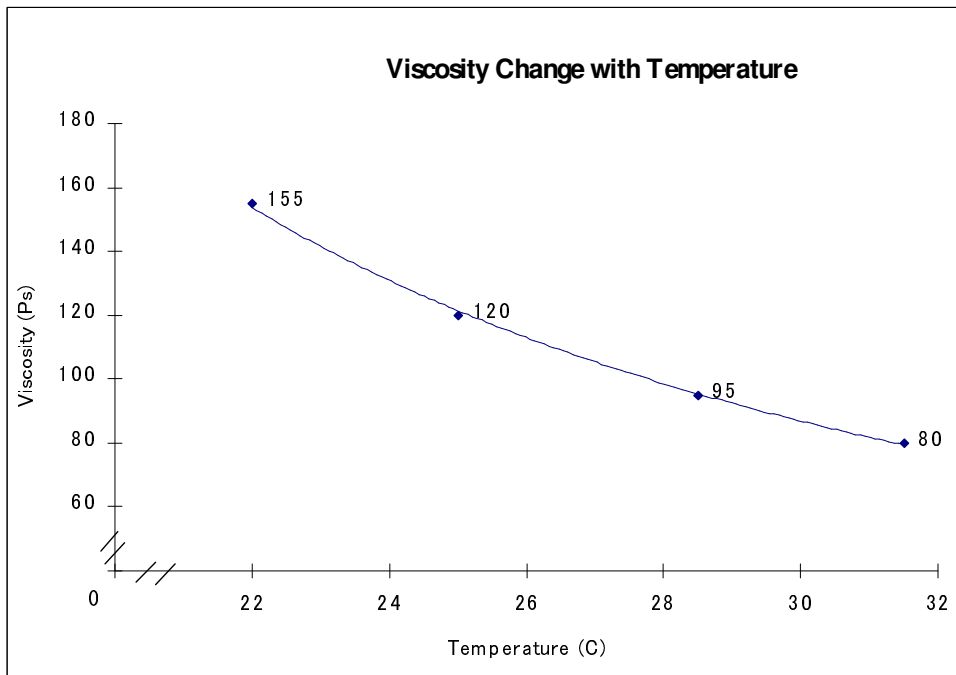
A.	Colors:	Symbol	
	Green	G	(D is dark green, M is normal green and L is light green)
	Blue	B	
	Black	C	
	White	W	
	Red	R	

IV. Physical Properties

Colors	Green, blue, black, white, and red
Volatile %	0% (no solvents)
Viscosity (RT = 25C or 72F)	100-150 ps
Hardness (pencil)-JIS-D-0202	> 4H

Adhesion-JIS-D-0202	100/100. Passed crosscut hatch test.
Heat resistance (solder bath)	Passed three times floating at 260C for 10 seconds.
Insulation resistance IPC-SM-840B at 100V	1 x 10 ¹³ Ohms as received
Dielectric constant (at 1 MHz)	3.5 as received
Dielectric loss/Tan	0.035 at 1 MHz
Dielectric strength	1.7 KV/mil
Solvent resistance	Passed for 3 hour immersion at room temperature, in trichlene.
Shelf life	12 months after delivered, when stored at 20C (65F) in the dark

Note: Typical property values listed above are not to be construed as a specification.



V. Process Procedures

1. Preparation of the UV curable solder mask

- A. Mix the solder mask before use.
- B. UR-3100 thinner can be added to reduce the viscosity.
(Do not use other solvents, or they could spoil the solder mask)

2. Application of the solder mask

- A. Recommended method is screen-printing.
- B. The viscosity of the mask should be 100 - 150 poise at 25C.
- C. The bare board should be polished and dried thoroughly by either pumice or aluminum oxide scrubbing.

3. Final cure

The UV cure should be as follows:

3 high pressure mercury lamps @ 100W/cm
4 – 6 m/min conveyor speed
Total cure energy: 700 – 1000 mJ/cm²

VI. Analysis

Not applicable.

VII. Safety and Storage

Do not store in direct sunlight, high temperature or below freezing. **Store in original uncontaminated container.**

VIII. Waste Treatment

Not applicable.

IX. Miscellaneous

Consult MSDS sheets for additional information.

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