Technical Data Sheet

DOWSIL™ EA-8301 Adhesive

One part, bluish, hybrid (UV cure with secondary moisture cure) curable sealing product for display module assembly

Features & Benefits

- One-part UV cure with secondary moisture cure
- One part
- Bluish
- No added solvents
- No mixing required
- Good through (in-depth) curing in high UV energy density
- Faster in-line processing through UV curing
- Adequate flow, fill or self-leveling after dispensing
- Very low shrinkage
- Good reliability against cold and high temperature
- Good sealing against water and contaminants

Applications

- Suitable for sealing air gaps or holes against water and contaminants for small-to-medium devices such as mobile, tablet, mobile phone, TV and display applications (Designed to seal air gaps or holes between display (LCD/OLED) panel and plastic cover frame for mobile)
- General application: mobile module assembly, LCD/OLED TV module assembly

Typical Properties

Specification Writers: These values are not intended for use in preparing specifications.

Test	Property	Unit	Result
	UV Cure Condition at UV LED 405 nm[1]	mJ/cm[2]	> 4,000
	Color		Bluish
ASTM[2] D4287	Viscosity	cP	1,100
	Skin Over Time at 25°C	Minutes	15
ASTM D792	Specific Gravity (Cured)		1.04
ASTM D2240	Durometer Shore A (After UV- and 3 day moisture cure)		25

1. Reference adhesive thickness: 1mm
2. ASTM: American Society for Testing and Materials
3. HA spindle #52 at 100 rpm at 25°C

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Description

DOWSIL™ EA-8301 Adhesive is the one-part silicone based on hybrid curing (UV cure with secondary moisture cure), which provides water- & dust-proof, reliability and process-ability for PCB and LCD/OLED system assemblies.

This product can be cured at lower UV energy density (UV V: > 4,000 mJ/cm^2) and full curing is achievable by room temperature moisture curing to cure shadow (or in-depth) areas of PCB and LCD/OLED system assemblies, which aren't exposed to UV light. Higher through(in-depth) curing is also achievable by higher UV energy (> 10,000 mJ/cm^2) and can be adjusted, depending on the structure of each device.

The product provides a controlled flow for PCB and LCD/OLED system assembly. Faster UV curing also improves a productivity at manufacturing site since the product and components can be handled in short time right after UV curing.

Also, low cure shrinkage provides stable sealing and its elasticity provides vibration & impact resistance in assembly application.

For moisture curing part, it's generally cured at room temperature and in an environment of 30 to 80 percent relative humidity eliminating the need for curing ovens and the associated costs of energy and capital. Greater than 90 percent of full physical properties should be attained within 24 to 72 hours and varies according to product.

Repairability

Removal of DOWSIL™ EA-8301 Adhesive to allow necessary repairs can be easily done itself by using Micsol series and IPA. After work has been completed, the repaired area should be cleaned with forced air or a brush, dried, and patched with additional silicone product.

Packaging Information

This product is packaged in 20 oz UV-block syringes. The product may be available in all packages, and some additional packages and package sizes may be available through communication with customers.

Usable Life and Storage

The product should be stored in freezing condition and in its original packaging with the cover tightly attached to avoid any contamination. Storage conditions and shelf life ("Use By" date) are indicated on the product label. Do not expose to UV light or sunlight to have stable shelf life. Material may polymerize upon prolonged exposure to ambient light.

Useful Temperature Ranges

For most uses, silicone adhesives should be operational over a temperature range of -45 to 200°C (-49 to 392°F) for long periods of time. However, at both the low- and high temperature ends of the spectrum, behavior of the materials and performance in particular applications can become more complex and require additional considerations. For low-temperature performance, thermal cycling to conditions such as -55°C (-67°F) may be possible, but performance should be verified for your parts or assemblies. Factors that may influence performance are configuration and stress sensitivity of components, cooling rates and hold times, and prior temperature history. At the high-temperature end, the durability of the cured silicone elastomer is time and temperature dependent. As expected, the higher the temperature, the shorter the time the material will remain useable.

Handling Precautions

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE SAFETY DATA SHEET IS AVAILABLE ON THE DOW WEBSITE AT DOW.COM, OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE.

Limitations

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

Health And Environmental Information

To support customers in their product safety needs, Dow has an extensive Product Stewardship organization and a team of product safety and regulatory compliance specialists available in each area.

For further information, please see our website, dow.com or consult your local Dow representative.

Disposal Considerations

Dispose in accordance with all local, state (provincial) and federal regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.

It is the user's responsibility to verify that treatment and disposal procedures comply with local, state (provincial) and federal regulations. Contact your Dow Technical Representative for more information.

Product Stewardship

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products - from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

How Can We Help You Today?

Tell us about your performance, design, and manufacturing challenges. Let us put our silicon-based materials expertise, application knowledge, and processing experience to work for you.

For more information about our materials and capabilities, visit dow.com.

To discuss how we could work together to meet your specific needs, go to dow.com for a contact close to your location. Dow has customer service teams, science and technology centers, application support teams, sales offices, and manufacturing sites around the globe.

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