

# Product Information

## Silicone Hot-Melt Adhesive

DOW CORNING

# Dow Corning® EA-4600 HM RTV Black UV

## FEATURES & BENEFITS

- Instant green strength
- Neutral cure RTV adhesive
- Allows for UV inspection of adhesive bead for quality control
- UL 94 Rated
- Primerless adhesion to most common substrates including plastics and metals
- Long open time and pot life
- Service temperatures from -50 to 300°F (-45 to 150°C)
- Can be used with standard hot melt dispensing equipment

## COMPOSITION

- One-component, neutral (moisture) cure, silicone hot-melt adhesive

Reactive silicone hot-melt adhesive for electronic assembly applications

## APPLICATIONS

Dow Corning® EA-4600 HM RTV Black UV adhesive is designed for electronic assembly applications. This product utilizes hot-melt technology to dispense the material and silicone technology to achieve instant green strength when dispensed and cures to strong moisture-cured silicone adhesive.

## TYPICAL PROPERTIES

Specification Writers: These values are not intended for use in preparing specifications. Please contact your local Dow Corning sales office or your Global Dow Corning Connection before writing specifications on this product.

Test <sup>1</sup>	Property	Unit	Result
CTM 1134	Viscosity at 120°C	Pa.s	60
CTM 0839	Nonvolatile Content	Percent	>98.5
CTM 0243	Open Time <sup>2</sup> or Assembly Time	Minutes	15
CTM 0243	Pot life at 120°C	Days	1
CTM 0243	Lap shear adhesion on PC at 30min/ 1hour/ 1day/ 3days/ 7days	MPa	0.1/ 0.1/ 0.5/ 1.1/ 1.7
ASTM C661	Durometer – Shore A	Points	56
ASTM D412	Tensile Strength	MPa	4.6
ASTM D412	Elongation	Percent	1000
	180° Peel Strength <sup>3</sup> after 1day	pli	20
CTM 0022	Specific Gravity	Uncured	1.08
CTM 0176	Appearance	-	Black
ASTM C711	Service Temperature Range	°C	-45 to 150
CTM 0114	Dielectric Strength	Volts/mil kV/mm	496 20
CTM 0249	Volume Resistivity	Ohm-cm	5.7E+14

<sup>1</sup>CTM (Corporate Test Method) corresponds to ASTM (American Society for Testing and Materials) standard tests in many cases. Copies of CTMs are available upon request. ASTM (American Society for Testing and Materials).

<sup>2</sup>To ensure full adhesion.

<sup>3</sup>From aluminum substrate.

## TYPICAL PROPERTIES (continued)

Test	Property	Unit	Result
CTM 0112	Dielectric Constant @ 100 Hz	-	2.68
	Dielectric Constant @ 100 kHz	-	2.64
	Dielectric Constant @ 1 MHz	-	2.63
CTM 0112	Dissipation Factor @ 100 Hz	-	0.004
	Dissipation Factor @ 100 kHz	-	0.002
	Dissipation Factor @ 1 MHz	-	0.002
	Thermal Conductivity	W/mK	0.17
	Thermal Diffusivity	mm <sup>2</sup> /s	0.11
	Specific Heat	MJ/m <sup>3</sup> K	1.6

### DESCRIPTION

*Dow Corning* EA-4600 HM RTV Black UV adhesive is a moisture curing silicone adhesive formulated to have immediate green strength to offer assembly improvements. Electronics assembled parts made with this adhesive can be handled immediately after its application.

As a viscoelastic material when cured and then exposed to high temperatures, this product will soften but recovers to its typical properties when cooled down.

### HOW TO USE

#### Preparation

Surfaces should be clean and dry before application of the hot-melt adhesive.

#### Application

Application temperature is typically 120°C. When the melt temperature is reached, it can be applied with automated or hand-assisted hot-melt dispensing equipment. Once applied, the parts should be assembled within 15 minutes, and this product reacts with the atmospheric moisture to form a strong-bonded flexible silicone adhesive. Exposure of opened containers to air should be minimized.

### HANDLING

### PRECAUTIONS

### PRODUCT SAFETY

### INFORMATION REQUIRED FOR

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

This product should be applied at temperatures around 120°C. Use personal protective equipment to prevent the contact of hot material with skin or eyes.

### USABLE LIFE AND STORAGE

When stored at or below 32°C in the original unopened containers, this product has a usable life of 12 months from the date of production. Refer to product packaging for "Use by Date".

### PACKAGING INFORMATION

This product is available in 304 mL aluminum cartridges.

### LIMITATIONS

*Dow Corning* EA-4600 HM RTV Black UV adhesive is not intended for use:

- In spaces totally confined from atmospheric moisture during cure
- In continuous water immersion
- On surfaces that might bleed oils, plasticizers, or solvents.
- On wet surfaces

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 Corning has an extensive Product Stewardship organization and a team of Product Safety and Regulatory Compliance (PS&RC) specialists available in each area.

For further information, please see our website, [dowcorning.com](http://dowcorning.com) or consult your local Dow Corning representative.

### LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this

information should not be used in substitution for customer's tests to ensure that our products are safe, effective, and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent.

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Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted.

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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 **dowcorning.com**.

To discuss how we could work together to meet your specific needs, email **electronics@dowcorning.com** or go to **dowcorning.com/contactus** for a contact close to your location. Dow Corning has customer service teams, science and technology centers, application support teams, sales offices and manufacturing sites around the globe.