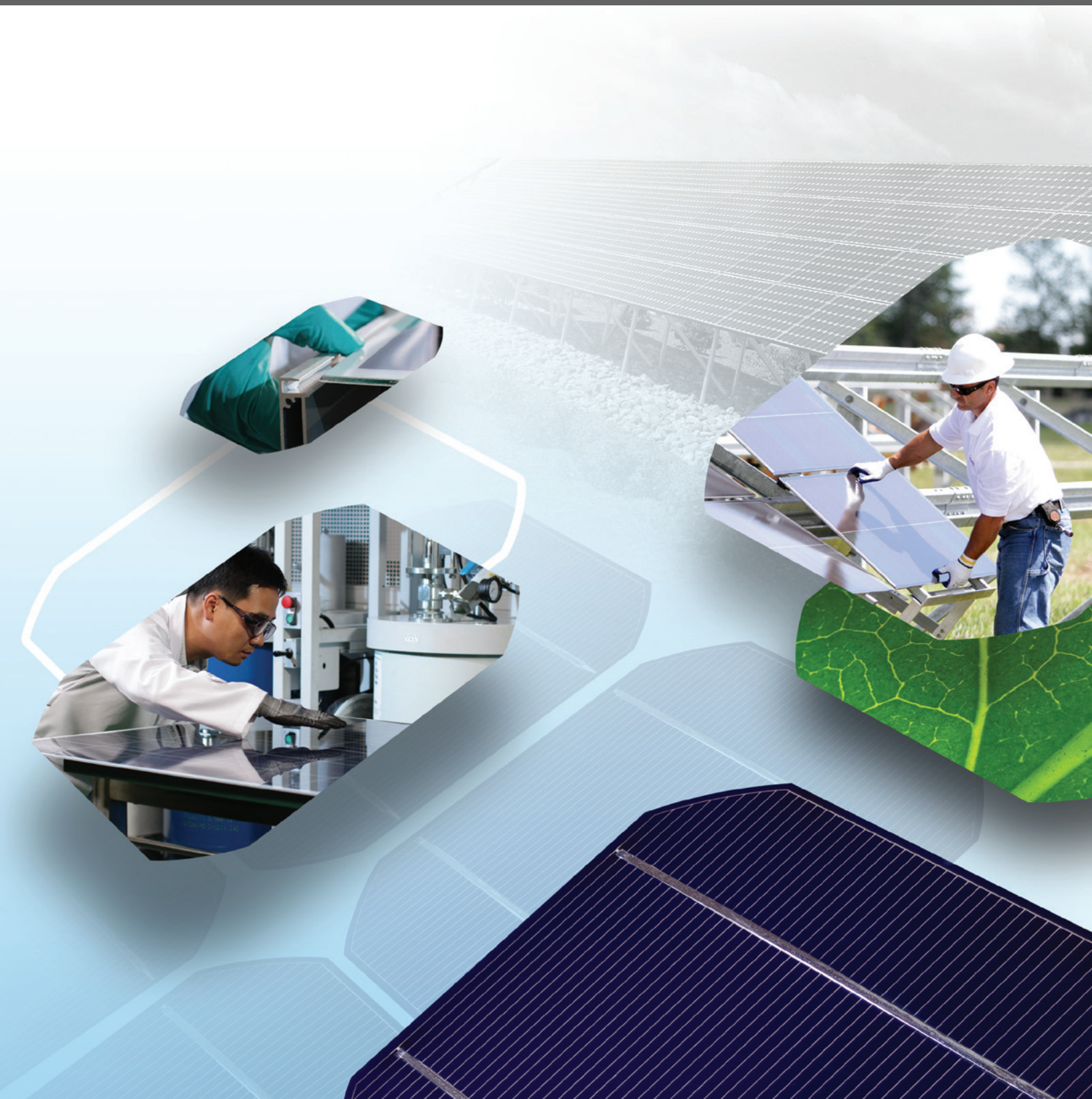
DOW CORNING

Solar
Solutions

Silicon-based Photovoltaic Solutions

A Portfolio of PV Materials from Dow Corning



Welcome to the Photovoltaic Material Selection Guide

Dow Corning delivers silicones, silicon-based technology and high-performance products that help create more reliable solar systems to increase kW/hour output and profitability. With material solutions tested to meet the specific requirements of the solar energy industry, we can help you lower costs, increase durability, reliability and improve performance.

As a global supplier of high-purity monosilane gas, Dow Corning offers you a reliable and cost efficient supply of an important component of crystalline PV cell coatings.

As an innovator in PV assembly and integration solutions, Dow Corning offers materials that can increase durability, efficiency and performance while reducing manufacturing costs. The inherent properties of silicones — especially its UV stability and transparency — provide you with numerous advantages over incumbent organics.

Built on more than 70 years of expertise, Dow Corning is a global partner, collaborating with leading solar companies to improve levelized cost of energy for solar power.

We invite you to review our selection guide and contact one of our solar experts. Please see the back cover for more information. And if you have questions, please do not hesitate to contact us at ***solar.solutions@dowcorning.com***. Because at the end of the day, your success is our success.

All products listed in this selection guide are *Dow Corning*® brand products.

	Dow Corning® Brand	Description/Advantages	Cure System
PV Cell Adhesive	PV-5802 Electrically Conductive Adhesive	• Electrical and mechanical bonding for back-contact module • Stencil printing for automatic module assembling process • Curing profile matches typical lamination • Low CTM (cell-to-module) power loss • Superior stability and durability • Low material consumption	Addition cure
PV Cell Coating	Monosilane	• Anti-reflective coating for crystalline solar cell • Feedstock for amorphous and micromorph thin film PV • Sold via gas distributors	N/A
PV Cell Encapsulant	PV-6150 Cell Encapsulant	• Back side encapsulant • Inherently UV stable • Excellent humidity resistance • Self-priming adhesion • Fast heat cure (100°C)	Addition cure
	PV-6212 Cell Encapsulant	• High optical transmission • UV transparent to 250 nm • Adhesion to glass, PET-based PV back-sheet and solar cells • Inherently UV stable • Excellent humidity resistance • Superior electrical insulation • Fast heat cure (100°C) • PID resistant	System D Addition cure
PV Junction Box Potting Agent	PV-7010 Potting Agent	• Proven solution in PV industry • Fast room temperature or heat cure • Thick section cure • No solvents or cure byproducts • Translucent material • Minimal shrinkage	Addition cure
	PV-7030R Potting Agent	• Adhesion to typical PV substrates • Fast room temperature or heat cure • Thick section cure • No solvents or cure byproducts • Minimal shrinkage	Addition cure
	PV-7321 Potting Agent	• Proven solution in PV industry • Adhesion to typical PV substrates • Good thermal conductivity	Condensation cure
	PV-7326 Potting Agent	• Good adhesion performance to junction box substrate • Compatible with frame sealant and adhesive sealant • Flame resistance VO = 3mm • Neutral alkoxy sealant • Fast room temperature cure • Tailor made product for PV junction box potting	System B
PV Junction Box Adhesive	Solar PV InstantSeal	• Adhesion to typical PV substrates • Safe to handle – nonhazardous composition and byproducts • Clear product improves module aesthetics	Moisture cure
	PV-8101F Sealant	• Adhesion to typical PV substrates • Fast tack-free time • Flexible rubber • Fast, deep section cure	Moisture cure
	PV-8007 Neutral Sealant	• High-performance silicone adhesive/sealant with fast green strength • High elasticity after cure allows flexibility in harsh conditions • Adhesion to typical PV substrates • Protects against mechanical shock and thermal cycling stress	Moisture cure
	PV-8080 Neutral Sealant	• Adhesion to typical PV substrates • Protects against mechanical shock and thermal cycling stress • High-performance with high elasticity after cure	Moisture cure
	PV-804 Neutral Sealant	• Proven solution in PV industry • Adhesion to typical PV substrates • Protects against mechanical shock and thermal cycling stress at components	Moisture cure
PV Frame Sealant / PV Structural Bonding Sealants	PV-8303 Ultra Fast Cure Sealant	• Adhesion to typical PV substrates • Ultra-fast cure for fully automated processes • Two-part product providing customized cure rate using *Dow Corning*® PV-8300 Base	Condensation cure
	PV-8301 Fast Cure Sealant	• Adhesion to typical PV substrates • Fast cure allowing increased production rates • Two-part product providing customized cure rate using *Dow Corning*® PV-8300 Base	Condensation cure
	PV-8030 Adhesive	• Adhesion to typical PV substrates • Protects against mechanical shock and thermal cycling stress at components	Moisture cure

Please consult the data sheets for complete information on testing methods and conditions.

*RH: Relative humidity

Mix Ratio/ By Weight	Color	Viscosity cPs Extrusion Rate g/min	Specific Gravity Mixed Parts	Working Time @ 25°C	Cure Time/ Temperature	Thermal Conductivity	Shelf Life	UL Ratings	Packaging
1-part	Gray	95 Pa.s @ 10 s^{-1}	3.95 g/cm^3	72 hours	5 minutes @ 145°C	N/A	6 months	N/A	1.5 kg in dental cups
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1:1; 2-part	Transparent	Part A 440 cPs Part B 280 cPs	0.97	1 hour	1 minute @ 100°C	N/A	12 months	UL registered; RTI 105°C	Drums
1:1; 2-part	Transparent/ translucent	Part A 53,200 cPs Part B 51,600 cPs	0.97	1 hour	T90 @ 110°C 22.5 seconds	0.171 W/(m K)	6 months	N/A	180 kg drum per part
1:1; 2-part	Translucent blue and green	Part A 425 cPs Part B 400 cPs	0.98	5–10 minutes	90–100 minutes @ 25°C 10–15 minutes @ 50°C 2–5 minutes @ 75°C	0.20 W/(m K)	12 months	UL 94 V1; HAI/HWI/CTI=0; RTI 105ºC; (f2)-UV/H_2O exposure	Cartridges, pails and drums
1:1; 2-part	Black	Part A 2,835 cPs Part B 2,733 cPs	1.2	8–10 minutes	3.25 hours @ 25°C 18.5 minutes @ 50°C 4.3 minutes @ 75°C	0.28 W/(m K)	12 months	UL 94 V1; HAI/CTI=0; HWI=2; CTI/inclined plane tracking 600 V and greater; RTI 105°C; (f2)-UV/H_2O exposure	Cartridges, pails and drums
10:1; 2-part	White	Mixed: 8,000 cPs	1.25	22 minutes	72 hours @ 25°C and 50% RH*	0.31 W/(m K)	12 months	UL 94 HB; HAI=0; HWI=3; CTI=0; RTI 105°C	1.1 kg-KIT, pails and drums
6:1	White and black	3,300 cPs	1.42	72 hours	7.6 minutes	0.54 W/(m K)	12 months	Testing in progress	12 kg pail, 2 kg can
1-part	Clear	200,000 cPs at application temperature	1.06	15 minutes with a green strength of 15 psi	48 hours @ 25°C - 2 mm	N/A	12 months	UL 94 HB; RTI 105°C	Pails
1-part	White and black	210 g/minute	1.41	4 minutes and 50% RH*	24 hours @ 25°C and 50% RH* - 2 mm	N/A	12 months	UL 94 HB; HWI=2; HAI=0; CTI=0; RTI 105°C	White: sausages and drums Black: cartridges, sausages and drums
1-part	White and black	170 g/minute	1.56	10 minutes and 50% RH*	24 hours @ 25ºC and 50% RH* - 2 mm	N/A	12 months	UL 94 V1 (6mm) HB (3mm); UL RTI 105°C; UL HAI=1; HWI=1; CTI=0	Cartridges, sausages, pails and drums
1-part	White and bright white	197 g/minute	1.51	10–15 minutes and 50% RH*	24 hours @ 25°C and 50% RH* - 2.5 mm	N/A	12 months	UL 94 HB; HWI=2; HAI=0; CTI=0; RTI 105°C	Cartridges, sausages, pails and drums
1-part	White and black	190 g/minute	1.4	30 minutes	24 hours @ 25°C and 50% RH* - 2 mm	N/A	12 months	UL 94 V1 (5mm) HB (3mm); HWI=2; HAI=0); CTI=1; RTI 105°C; (f2)-UV/H_2O exposure	Cartridges, pails and drums
2-part base; catalyst 7:1	Black	190 g/minute	1.31	5–10 minutes	2.5 hours @ 25°C	N/A	Catalyst: 12 months Base: 12 months	UL 94 HB; HWI=2; HAI=3; CTI=0; RTI 105°C	Base: pails and drums Catalyst: pail
2-part base; catalyst 10:1	Black	190 g/minute	1.31	20–25 minutes	8 hours @ 25°C	N/A	Catalyst black: 14 months; Catalyst clear: 12 months; Base: 14 months	UL 94 HB; HWI=3; HAI=0; CTI=0; RTI 105°C	Base: pails and drums Catalyst: pails
1-part	White and black	110 g/minute	1.34	20–30 minutes	24 hours @ 25°C and 50% RH* - 3 mm	N/A	18 months	UL 94 HB; HWI=2; HAI=2; CTI=0; RTI 105°C	Cartridges, pails and drums

CONVENIENT SERVICE AND SUPPORT

We know convenience and speed are extremely important to you. That's why we offer the web-based Premier Partner Network for Dow Corning Solar Solutions. You'll have easy access 24 hours a day, 7 days a week, to our full range of products for solar applications, including feedstock, encapsulants, coatings, potting agents and next-generation PV materials. Order online anytime. Track orders and billing. Download critical documents. Get the information you want fast.

Premier Partner Network is the safe, convenient way to get the products and documents you need in just a few clicks — one more example of what we're doing to help you meet your goals for speed and cost-competitiveness in the rapidly developing PV market.

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LEARN MORE

Dow Corning has sales offices and manufacturing sites, as well as science and technology laboratories, around the globe. For more information, please visit ***dowcorning.com/solar*** or e-mail ***solar.solutions@dowcorning.com***.

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