Technical Data Sheet

DOWSIL™ 7092 High Green Strength Adhesive and Sealant

Instant Green Strength neutral cure one component silicone adhesive/sealant

Features & Benefits

- Provides Instant Green Strength
- Easy-to-use one-component adhesive/sealant
- Cures at room temperature when exposed to moisture in the air
- Excellent adhesion to a wide range of substrates such as glass, metals and plastics
- Non-sag, paste consistency
- Cures to a tough, flexible rubber
- Stable and flexible from -50°C to +150°C
- UL 94 HB
- Fast strength build up supports productivity enhancements due to fast handling of bonded units (see Figure 1)
- Saves time as no buffer for strength build up required

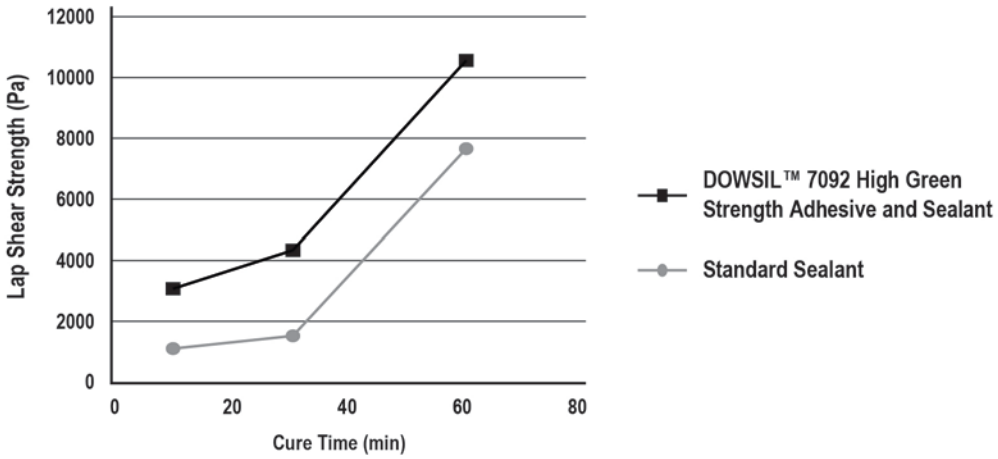

Figure 1

Applications

- Designed for applications that require immediate handling and processing of the units. DOWSIL™ 7092 High Green Strength Adhesive and Sealant provides immediate strength directly after application, enhancing productivity.
- Unprimed adhesion to commonly used materials including certain steels, aluminum and glass as well as certain plastics used in engineering applications.

Form No. 80-3928-01 A

Typical Properties

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

CTM[1]	ASTM[2]	Property	Unit	Result
		As supplied		
		Colors		Black, white
		Appearance		Paste-like
0364	D2452	Extrusion rate[3]	g/min	217
0095		Skin-over time (Tack free[4])	min	15–25
		Cure in depth (23°C, 50% r.h.) - after 24 hours	mm	2
		As cured after 7 days at 23°C and 50% r.h.		
0099	D2240	Durometer hardness, Shore A		55
0137A	D412	Modulus at 100% Elongation	MPa	1.2
0137A	D412	Tensile strength	MPa	2.0
0137A	D412	Elongation at break	%	435
0097F		Specific gravity at 23°C		1.55
		Adhesion in lap shear assemblies, as cured 7 days at 23°C and 50% r.h.		
		Lap shear strength		
		Metals appr (steel, aluminum)	MPa	1.1–1.4
		Plastics (PC, PA, PBT)	MPa	1.3–1.4
		Plastics with plasma treatment (PP, PMMA, ABS)	MPa	1.2–1.4
		Cohesive failure is obtained on		
		Metals (steel, aluminum)	%	80–100
		Plastics	%	90–100
		Plastics with plasma treatment (PP, PMMA, ABS)	%	90–100

1. CTM: Corporate Test Method, copies of CTMs are available on request.
2. ASTM: American Society for Testing and Materials.
3. Extrusion rate measured using 3.18 mm diameter nozzle at 0.62 MPa.
4. Tack-free time is the time required for the product to develop a non-tacky surface based on adhesion to a polyethylene film.

Description

DOWSIL 7092 High Green Strength Adhesive and Sealant is a neutral curing one part silicone sealant which provides immediate Green Strength directly after application.

How To Use

Substrate Preparation

All surfaces must be clean and dry. Degrease and wash off any contaminants that could impair adhesion. Suitable solvents include isopropyl alcohol, acetone or methyl ethyl ketone, heptane. Good unprimed adhesion may be obtained on a variety of substrates, including steel, alumini aluminum, glass and certain plastics. Substrates to which good adhesion is normally not obtained include PTFE, polyethylene, polypropylene and related materials.

For maximum adhesion, the use of DOWSIL™ 1200 OS Primer is recommended. After solvent cleaning apply a thin coat of DOWSIL 1200 OS Primer by dipping, brushing or spraying. Allow primer to dry for 15 to 90 minutes at room temperature and a relative humidity of 50% or higher.

How To Use (Cont.)

How To Apply

Apply a bead of DOWSIL 7092 High Green Strength Adhesive and Sealant (see Handling Precautions) to one of the prepared surfaces, then quickly cover with the other substrate to be bonded.

On exposure to moisture, the freshly applied material will "skin-over" in about 15–25 minutes at room temperature and 50% relative humidity. Any tooling should be completed before this skin forms. The surface is easily tooled with a spatula. High humidity level and higher temperatures accelerate the cure process and lead to earlier skin formation.

Green Strength

DOWSIL 7092 High Green Strength Adhesive and Sealant provides immediate Green Strength directly after application. The property of instant Green Strength can eliminate mechanical fixing or shorten the handling time of bonded parts.

The immediate Green Strength is about 3 times higher in lap shear assemblies than standard sealant which gives additional safety during the production and assembly process (see Figure 1).

Cure Time

After skin formation, cure continues inward from the surface. In 24 hours (at room temperature and 50% relative humidity) DOWSIL 7092 High Green Strength Adhesive and Sealant will cure to a depth of about 2 mm. Very deep sections, especially when access to atmospheric moisture is restricted, will take longer to cure completely. Cure time is extended at lower humidity levels. It is extended at lower humidity levels and accelerated at higher levels, respectively (see Table 1 below).

Table 1

Condition	Rel. Cure Speed
23°C, 50% R.H.	100%
15°C, 40% R.H.	70%
30°C, 60% R.H.	135%
35°C, 70% R.H	168%

Before handling and packaging bonded components, users are advised to wait a sufficiently long time to ensure that the integrity of the adhesive seal is not affected. This will depend on many factors and should be determined by the user for each specific application.

Handling Precautions

When using solvents avoid contact with skin and eyes, heat, sparks and open flames. Always provide adequate ventilation. Obtain and follow handling precautions from the solvent supplier.

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 WWW.CONSUMER.DOW.COM, OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE.

Usable Life And Storage

When stored at or below 30°C (86°F) in the original unopened containers, this product has a usable life of 12 months from the date of production.

Packaging Information

This product is available in standard industrial container sizes.

Limitations

Adhesion may be less successful on low-energy plastics such as Polyethylene, Polypropylene and PTFE. Users should do preliminary tests in each specific application to ensure satisfactory results.

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, www.consumer.dow.com or consult your local Dow representative.