

Product Information

Adhesives

DOW CORNING

Dow Corning® 282 Adhesive

FEATURES

- Good adhesion
- Adhesion to 260°C (500°F)

COMPOSITION

- Polydimethyl disiloxane gum and resin dispersion; high-viscosity liquid

Pressure sensitive adhesive

APPLICATIONS

- Masking and plating tapes
- Applications requiring a balance of properties emphasizing high adhesion
- As an independent adhesive for many bonding, fastening or holding applications

TYPICAL PROPERTIES

Specification Writers: Please contact your local Dow Corning sales office or your Global Dow Corning Connection before writing specifications on this product.

Test	Unit	Result
Appearance		Translucent
Diluent		Xylene
Active Ingredient	percent	55 to 57
Viscosity at 25°C (77°F)	cp	30,000 to 80,000
Specific Gravity at 25°C (77°F)		0.98
Flash Point, tag closed cup	°C (°F)	27 (81)
Electrical Properties of the Cured Adhesive Film¹		
Electric Strength ²	V/mil	1500
Dielectric Constant		
at 10 ² Hz		2.98
at 10 ⁵ Hz		2.87
Dissipation Factor		
at 10 ² Hz		0.005
at 10 ⁵ Hz		0.004
Volume Resistivity	ohm-cm	7.2 x 10 ¹⁵

¹After 96 hours at 23°C (73°F) and 50 percent relative humidity.

²Measured with 6.35-mm (1/4-in) electrodes on 2-mil film of adhesive cured on an aluminum panel.

DESCRIPTION

Dow Corning® 282 Adhesive is a dispersion of polydimethyl disiloxane gum and resin. It is diluted with xylene to 55 percent silicone solids content.

HOW TO USE

Dow Corning 282 Adhesive can be applied, as supplied, to backing materials by conventional tape coating equipment. It can be further diluted with compatible solvents¹ or blended with other silicone pressure sensitive adhesives before being coated.

Catalysts

To achieve a good balance of tack, adhesive strength and cohesive strength

over a wide range of operating temperatures, proper cure is essential. One of the factors affecting cure is the catalyst.

Catalysts such as benzoyl peroxide² may be used with Dow Corning 282 Adhesive to either accelerate the rate of cure or to allow lower curing temperatures. The use of catalysts also increases the cohesive strength of the adhesive mass and promotes anchorage to the backing material.

¹When using any solvent, always provide adequate ventilation. Follow the solvent manufacturer's safe handling precautions as well as local, state and federal guidelines.

²Benzoyl peroxide: *Luperox*® A98 (formerly *Lucidol*® 98 from Afofina Chemicals North America, *Cadox*® BFF 50 powder or BP 55 paste from Akzo Chemie of America, Noury Chemical Division.

Peroxide concentration can be varied from 0.5 to 3.0 percent (based on adhesive solids), depending on such factors as backing material, coating equipment, cure cycle and the properties desired. Increasing peroxide concentration in *Dow Corning* 282 Adhesive will decrease the tack and adhesive strength, but will increase the cohesive strength of the product.

The most consistent results are achieved by using powdered 98 percent benzoyl peroxide. Complete blending of peroxide and adhesive is best obtained by first making a 10 percent solution of the peroxide in toluene.

NOTE: Solvent dispersions of peroxides should be used within a day or two after mixing, as the peroxide loses its activity quite rapidly in solvent. Thorough dispersion of the adhesive and peroxide during mixing is necessary to achieve uniform results in the finished product.

Solvent Removal

To cure *Dow Corning* 282 Adhesive following its application to the backing material, first remove the solvent. Recommended temperatures for removal range from 66 to 93°C (150 to 200°F). Higher removal temperatures can cause the peroxide to decompose prematurely and crosslink the solvent into the adhesive. This can reduce the properties of the finished tape. The length of time for solvent removal should be sufficient to ensure that no solvent is present in the adhesive when it enters the curing zone.

Curing the Adhesive

After the solvent is removed, a tacky, uniform film of adhesive is left on the backing. This film's adhesive and cohesive strengths, as well as the tack, can be further developed by a heat cure. The amount of cure depends on a number of factors, including the type of catalyst or equipment and backing material.

A cure of 1 minute at 66°C (150°F) for solvent removal, followed by 2 minutes at 177 to 204°C (350 to 400°F) is used for adhesive that contains benzoyl peroxide.

If equipment and type of backing material permit the use of higher curing temperatures, the cure time may be shortened. Higher cure temperatures develop cohesive strength of the adhesive in less time than at lower temperatures. The ultimate adhesive strength of the fully cured material is essentially the same whether cured at higher or lower temperatures. The only difference is the time required to reach complete cure.

Anchorage to Backing

To achieve maximum anchorage of the adhesive to the backing, a primer may be required. Contact Dow Corning Technical Service for assistance in selecting a primer formulation.

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 FROM YOUR DOW CORNING REPRESENTATIVE, OR DISTRIBUTOR, OR BY CALLING YOUR GLOBAL DOW CORNING CONNECTION.

USABLE LIFE AND STORAGE

Dow Corning 282 Adhesive has a shelf life of 9 months from date of manufacture when stored in original, unopened containers at or below 32°C (90°F). Refer to product packaging for "Use By" date.

PACKAGING

This product is available in a variety of container sizes. Contact your local

Dow Corning Customer Service representative for information about container sizes available in your area.

LIMITATIONS

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

SHIPPING LIMITATIONS

DOT classification: Flammable.

HEALTH AND ENVIRONMENTAL INFORMATION

To support customers in their product safety needs, Dow Corning has an extensive Product Stewardship organization and a team of Health, Environment and Regulatory Affairs specialists available in each area. For further information, please consult your local Dow Corning representative.

WARRANTY INFORMATION

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 Dow Corning's products are safe, effective, and fully satisfactory for the intended end use. Dow Corning's sole warranty is that the product will meet the Dow Corning sales specifications in effect at the time of shipment. 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. Dow Corning specifically disclaims any other express or implied warranty of fitness for a particular purpose or merchantability, unless Dow Corning provides you with a specific, duly signed endorsement of fitness for use. Dow Corning disclaims liability for any incidental or consequential damages. Suggestions of use shall not be taken as inducements to infringe any patent.