



Technical Data Sheet

DOWSIL™ 7358 Adhesive

FEATURES

- High temperature stability
- High tack
- High performance
- Negligible silicone volatiles

BENEFITS

- Excellent balance of adhesion and tack

COMPOSITION

- Dispersion of polydimethylsiloxane gum and resin
- Liquid

Pressure sensitive adhesive tapes

APPLICATIONS

- Electrical insulation and bonding tapes
- High temperature masking tapes
- Plasma/flame-spray tapes
- Applications requiring a balance of properties emphasizing high tack

TYPICAL PROPERTIES

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

| Property | Unit | Value |
|--------------------------|------|-----------------------|
| Physical form | | High viscosity liquid |
| Appearance | | Water white, clear |
| Diluent | | Xylene/Toluene |
| Active ingredients | % | 55-58 |
| Specific gravity | | 0.98 |
| Viscosity at 25°C (77°F) | cp | 10,000 - 45,000 |
| Flash point, closed cup | °C | 26 |
| | °F | 78 |

DESCRIPTION

DOWSIL™ 7358 Adhesive is a dispersion of polydimethylsiloxane gum and resin diluted with xylene and toluene to an average 56.5 percent silicone solids content.

DOWSIL 7358 Adhesive is soluble in aromatic, aliphatic and chlorinated solvents. In addition, it is blendable with a variety of other dimethyl type silicone PSAs.

Typical of silicone PSAs, DOWSIL 7358 Adhesive is compatible with backings and performs in many applications. Some unique characteristics of this adhesive include:

- High temperature stability, maintains tape performance up to at least 260°C (500°F)
- An excellent balance of adhesion and tack with an emphasis on tack
- A property balance previously unachievable with dimethyl type silicone PSAs
- Negligible silicone volatiles, forming minimal “oven dust”

HOW TO USE

DOWSIL 7358 Adhesive is supplied in a xylene/toluene solution. This adhesive can be applied to backing materials as supplied by conventional tape coating equipment. It can be further diluted with compatible solvents 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 peroxide or 2, 4-dichlorobenzoyl peroxide¹ may be used with DOWSIL 7358 Adhesive to either accelerate the rate of cure or to allow lower curing temperatures. The use of catalysts also improves cohesive strength of the adhesive mass and promotes anchorage to the backing material.

¹Peroxides are available as follows:

- 2, 4-dichlorobenzoyl peroxide: Cadox[®] TS 50 or Cadox[®] TDP from Akzo Chemie of America, Noury Chemical Division.
- Benzoyl peroxide: Lucidol[®]98 from Elfatochem 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% (based on adhesive solids), depending upon such factors as backing material, coating equipment, cure cycle and the properties desired. Increasing peroxide concentration in DOWSIL 7358 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 the powdered, 98% benzoyl peroxide. Complete blending of peroxide and adhesive is best obtained by first making a 10% 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 DOWSIL 7358 Adhesive following its application to DOWSIL 7358 Adhesive 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 cross-link 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.

Caution:

DOWSIL 7358 Adhesive is supplied in flammable solvent. The necessary precautions should be observed when handling solvents. Please refer to the Material Safety Data Sheets for safe handling information about these products.

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; when 2, 4-dichlorobenzoyl peroxide is used, the curing temperature may be reduced to as low as 132°C (270°F).

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.

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 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 ambient temperature in the original unopened containers, this product has a usable life of 24 months from the date of production.

PACKAGING INFORMATION

This product is available in a variety of container sizes. Contact your local customer service representative for information about container sizes available in your area.

LIMITATIONS

Shipping: DOT Classification: flammable.

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.

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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