Technical Data Sheet

DOWSIL™ 7357 Adhesive

Pressure sensitive adhesive

Features & Benefits

- Heptane based diluent
- High temperature stability
- High adhesion and tack
- Negligible silicone volatiles

Composition

- Polydimethyl siloxane and resin dispersed in heptane

Applications

- Plater's tapes
- High temperature masking tapes
- Splicing tapes
- Release tapes
- Applications requiring a balance of properties emphasizing adhesion

Typical Properties

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

Property	Unit	Result
Appearance		Clear to little hazy, colorless
Physical form		Liquid
Diluent		Heptane
Active content	%	55–58
Viscosity at 25°C (77°F)	cSt	15000–55000
Specific gravity at 25°C (77°F)		0.9
Flash point closed cup	°C	-4
Adhesion[1]	oz/in	> 32
Tack (probe tack)	G	> 75

1. 35 um dry PSA, 50 um PET, 2% BPO solids based on adhesive solids. 80°C 2 min, 160°C 2 min

Description

DOWSIL™ 7357 Adhesive is a dispersion of polydimethylsiloxane gum and resin diluted with heptane to an average 56.5 percent silicone solids content. DOWSIL™ 7357 Adhesive is soluble in aromatic, aliphatic and chlorinated solvents. In addition, it is blendable with a variety of other dimethyl type silicone PSAs.

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Description (Cont.)

Typical of silicone PSAs, DOWSIL™ 7357 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
- An excellent balance of adhesion and tack
- Negligible silicone volatiles, forming minimal “oven dust”

How to Use

DOWSIL™ 7357 Adhesive is supplied in a heptane solution. This adhesive can be applied to backing materials as supplied by conventional tape coating equipment. It can be further diluted with solvents or blended with other silicone pressure sensitive adhesives before being coated.

Solvents

DOWSIL™ 7357 Adhesive can be diluted with different compatible solvents including ethyl acetate, butanone or mixture solvents (for example: 40% ethyl acetate+60% heptane) etc.

Attention: Heptane alone can’t be used as dilution solvent because the cure agent BPO can’t be dissolved in this solvent.

Cure Agents

Benzoyl peroxide or 2, 4-dichlorobenzoyl peroxide may be used with DOWSIL™ 7357 Adhesive to either accelerate the rate of cure or to allow lower curing temperatures. The use of cure agents also improves cohesive strength of the adhesive mass and promotes anchorage to the backing material.

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™ 7357 Adhesive will decrease the tack and adhesive strength but will increase the cohesive strength of the product.

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™ 7357 Adhesive following its application to the backing material, first remove the solvent. Recommended temperatures for removal range from 60 to 85°C. 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™ 7357 Adhesive is supplied in flammable solvent. The necessary precautions should be observed when handling solvents. Please refer to the Safety Data Sheet for safe handling information about these products.

How to Use

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 cure agents or equipment and backing material.

A cure of 1 minute at 60°C for solvent removal, followed by 2 minutes at 177 to 204°C 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.

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 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.

Shipping

DOT Classification: flammable.

Limitations

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, dow.com or consult your local Dow representative.

Disposal Considerations

Dispose in accordance with all local, state (provincial) and federal regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.

It is the user's responsibility to verify that treatment and disposal procedures comply with local, state (provincial) and federal regulations. Contact your Dow Technical Representative for more information.

Product Stewardship

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products - from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

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