Technical Data Sheet

DOWSIL™ 7428 Adhesive

Pressure sensitive adhesive for most low energy surfaces

Features & Benefits

- Compatibility to adhesion on most low energy surfaces
- Peroxide based cure system
- Superior adhesion and tack
- Works very well on substrates with higher adhesive penetration

Composition

- Polydimethylsiloxane gum and resin dispersion; high-viscosity liquid

Applications

Specialty silicone adhesive used for:

- Splicing and plating tapes
- Heat seal tapes
- High temp insulation tapes

Typical Properties

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

Property	Unit	Result
Appearance		Slightly hazy liquid
Diluent		Xylene
Active Ingredients	%	59–63
Viscosity, 25°C	mPas	80,000–150,000

Description

DOWSIL™ 7428 Adhesive is an excellent pressure sensitive adhesive with benefits of adhesion to most low energy surfaces, and a high temperature resistance.

The adhesion strength and tack property would be a function of the amount of benzyl peroxide added and the curing system.

DOWSIL™ 7428 Adhesive is a dispersion of poly dimethylsiloxane gum and resin. It is diluted with xylene to 60% silicone solids content.

How to Use

DOWSIL™ 7428 Adhesive can be applied, as supplied, to backing materials by conventional tape coating equipment. It can be further diluted with compatible solvents[1] 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 may be used with DOWSIL™ 7428 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.

Peroxide concentration can be varied from 0.5% to 2.0% (based on adhesive solids), depending upon such factors as backing material, coating equipment, cure cycle and the properties desired. Increasing peroxide concentration in DOWSIL™ 7428 Adhesive will decrease the tack and adhesive strength, but will increase the cohesive strength of the product.

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.

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

Solvent Removal

To cure DOWSIL™ 7428 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.

How to Use (Cont.)

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 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 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 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 32°C (90°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 180 kg drums. Contact your local Dow Customer Service representative for information about other container sizes available in your region.

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

consumer.dow.com

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