Technical Data Sheet

SILASTIC™ 3715 Topcoat

FEATURES

- Low friction
- Gloss reduction
- Low soiling
- Fast curing
- Good adhesion to cured liquid silicone rubber

BENEFITS

- Coefficient of friction reduction of silicone-coated fabrics
- Can be used with or without a pigment
- Can reduce gloss of coated fabrics from 35–40 to 5 units using 10 gsm add-on, as measured by BYK Gardner Micro TRI Gloss Meter
- Eliminates dirt attraction associated with high coat weight silicones
- Improves ability to remove dirt that settles

Two-part solvent-free topcoat for silicone elastomers

APPLICATIONS

- Low-friction, low-soiling topcoat for cured liquid silicone rubber elastomers
- Especially for use on silicone-coated fabrics

TYPICAL PROPERTIES

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

Property	Unit	Result
Base		
Appearance		Off-white paste
Viscosity	cP	250,000
Specific Gravity		1.45
Flash Point	°C (°F)	> 100 (> 212)
Curing Agent		
Appearance		Clear, transparent liquid
Viscosity	cP	30
Specific Gravity		1.00
Flash Point	°C (°F)	66 (151)
Mixed		
Mix Ratio Base: Curing Agent		7:3
Viscosity	cP	8,000
Color		Off-white

DESCRIPTION

SILASTIC™ 3715 Topcoat is a two-part, solvent-free topcoat for silicone elastomers. Applied to the cured surface of liquid silicone rubber coated fabric, it provides soil repellency, a low coefficient of friction surface and reduced gloss.

The two-component addition-cure system is comprised of a paste-like base and a low-viscosity, clear-liquid curing agent. The product cures rapidly upon heating.

DISPENSING AND MIXING

SILASTIC™ 3715 Topcoat Base and SILASTIC™ 3715 Topcoat Curing Agent are supplied in separate containers.

SILASTIC 3715 Base is supplied in 20 kg pails and 205 kg drums and will undergo some separation; material should be thoroughly redispersed prior to use.

The two components of the topcoat should be mixed at a ratio of 7:3 base to curing agent, by weight.

When using pails, the entire pail of SILASTIC 3715 Base should be mixed to redisperse the separated liquid to the point of consist uniformity in the pail. The preferred method of mixing is with a Gyro mixer for two 9 minute cycles.

The process for making a ~15 kg pail of mixed material is as follows:
1. Mix base until homogeneous.
2. Split pail of base into 2 pails.
3. Add curing agent to first pail.
4. Mix until homogeneous.
5. Add curing agent to second pail.
6. Mix until homogeneous.
7. Use a strainer to remove any undispersed clumps of base.

Convert the pail of SILASTIC 3715 Base within 30 minutes of the base mixing.

Do not prestage; mix only 1 pail of SILASTIC 3715 Base at a time.

If material is not used within 30 minutes of mixing it is necessary to redisperse the mixture by mixing for 5 minutes just prior to use.

Mixing Procedures
The preferred method of mixing utilizes an automated dispensing system through a static mixer directly to the point of use in trough of the rotogravure.

For semi-automated mixing, using a Gyro mixer for two 9 minute cycles the parts in each step is required.

For manual mixing, the parts should be mixed for 10–15 minutes using a 45° pitched blade impeller that provides sufficient mixing in all directions. For optimum results, the mixing tool should be rotated within the pail and its height should be altered to achieve complete mixing.

Mixed SILASTIC 3715 Topcoat also separates with time and should be remixed after 30 minutes. Separation appears as a sheen or clear-liquid layer on the top; remix for an additional 5 minutes.

Unused mixture should be stored in an open-top or well-vented container.

Great care should be taken to ensure that unused material is allowed to cure into a solid state before disposal. The final curing process will generate heat at temperatures of up to 125°C (257°F), hence pails should be stored safely in a well-ventilated area away from sources of heat or ignition.

Note: When mixed, SILASTIC 3715 Topcoat generates hydrogen as part of the cure chemistry. Adequate ventilation of the vessel must be provided to avoid reaching a flammable atmosphere of greater than 4% hydrogen (L.E.L.).

HOW TO APPLY

After mixing, the silicone can be applied by gravure or by a knife over roller coating method. The product rapidly shears thin, allowing it to be easily applied using these techniques. Regardless of coating method selected, a target coat weight of 10 ±5 gsm is suggested.

The amount of add-on of the topcoat onto the coated fabric affects its performance. If applied at less than 5 gsm, the coefficient of friction may not be sufficiently reduced. If applied at greater than 25 gsm, the topcoat will form a thick, crumbling layer, which will flake off when passing over rollers.

Avoid application of the topcoat onto uncoated fabric as this will flake off.

SILASTIC 3715 Topcoat mixture should be stirred occasionally during use to avoid inconsistent results.

APPLICATION METHODS

Rotogravure
- Gravure type: Suggested configuration is 120 Trihelical Spiral Gravure.
- Chrome-plated stainless steel rotogravure cylinder; doctor blade construction should be 1 to 1.5 mm polyester, Mylar® or reinforced Teflon®, not metal.
- Blade pressure should be set to avoid flooding the gravure.
- Adjust the backing roller pressure to ensure an even and efficient emptying of the gravure cells.
    - Gravure should be cleaned thoroughly after application is complete using either white spirit, toluene/IPA or DOWSIL™ OS-2 Silicone Cleaner & Solvent.

Knife Over Roller
- Apply topcoat using a J-blade as knife over roller.
- Blade height does not necessarily need to exceed the base weight application height; it may be necessary to decrease the blade height so that topcoat is applied at a smaller gap than the base coat.
- Stir the pail of mixed topcoat and pour material onto the base-coated fabric at the coating head.

CURING

Issues critical during curing:
- Oven temperature must be at least 160°C (320°F) for 3-second cure; minimum temperature is 125°C (260°F) for 15 seconds. SILASTIC 3715 Topcoat must not be applied to wet, uncured liquid silicone rubber base coat, because the topcoat will interfere with the base coat cure. It can be applied to partially cured base coat, provided the base coat is dry to the touch. Subsequent heating of the composite will cure both systems.
- Mixed topcoat has a working life of 0.5 hours at 25°C (77°F) prior to use in the application. Above 30°C (86°F) the working life is limited to 0.25 hours prior to use in the application.

- The working life of the mixed topcoat in the application process is dependent upon manual agitation of the material in the process by manual or automated means.

CURING EQUIPMENT

A fan-assisted hot air oven or infrared radiation heating is recommended. If the product is insufficiently cured, the coating may appear dry to the touch but adhesion will be poor.

PERFORMANCE

Typically, coefficient of friction is reduced to less than 0.5 when measured against itself or glass.

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 35°C (95°F) in the original unopened containers, SILASTIC 3715 Topcoat has a usable life of 12 months from the date of manufacture.

PACKAGING INFORMATION

SILASTIC 3715 Topcoat is supplied in 205 kg (451 lb) drums, 22 kg (48 lb) pails (base) and 4 kg (8.8 lb) pails (curing agent) Sample quantities of 4 kg (8.8 lb) are also available.

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

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