

WSC 1042

Description

WSC1042 Weatherstrip coating is a single component matt black water-based silicone coating system that thermally cures to form a resilient silicone film. The cured coating can help to provide substrate surfaces such as EPDM rubber with lubricating water repellency and easy release characteristics. WSC1042 coating is an excellent candidate to consider for profiles such as automotive primary and secondary door seals or other seals where a smooth surface is preferred to impart low friction surfaces; it can also be considered for numerous building and construction applications, such as double glazing seals, a permanent clean assembly aid in place of soap solutions, or use in oil emulsions that have a limited work life.

Key Features and Typical Benefits

- Single component coating
- Excellent freeze release characteristics
- Excellent abrasion resistance
- Water-based, lower VOC and NMP-free formulation
- Low Static, Dynamic CoF, and smooth transition for low noise generation
- Extended bath and storage life
- Excellent adhesion to EPDM , TPE and other rubber formulations
- Fast heat cure process (approx.1 minute)
- Long term performance

Typical Physical Uncured Properties

| Property | WSC1042 |
|--------------------|-------------------------------|
| | Silicone Base Emulsion |
| Colour | Black |
| Solids Content (%) | 29 |

| | |
|---|-------|
| Density (@ 23°C) | 1.026 |
| Viscosity (DIN 4cup @ 23°C (seconds)) | 15 |
| Viscosity (mPas , Brookfield #2 @30rpm) | 7.0 |
| pH | 8.5 |
| Solvent | Water |

Typical properties are average data and are not to be used as or to develop specifications.

Typical Cured Product Properties

| Property | Test Method | Value |
|--|----------------|--------------|
| Coefficient of friction (Static & Dynamic) | DIN 53375 | ~ 0.3 |
| Abrasion Resistance (Crockmeter 900g load) | Dry Crockmeter | >5000 cycles |
| Appearance | Visual | Matt Black |
| Freeze Release | TL 523 45 | Pass |
| Repaintability | TSM 1701 G | Pass |
| Paint Staining | TSM 1701 G | Pass |

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Typical Cure Schedule

Complete cure in any specific application is a function of coating thickness, part geometry and the heat transfer characteristics of the substrate to which the coating is being applied.

Although the prepared coating will cure at an ambient temperature, it is not recommended, as adhesion and full abrasion performance may not be realized. An absolute minimum part temperature range of 80-120°C at the point of application is recommended in order to achieve best adhesion and appearance of the coating.

| Part Temperature (actual not oven set point) | | | | |
|--|----------|-----------|-----------|------------|
| Cure Temperature (°C) | 160°C | 150°C | 100°C | 80°C |
| Cure Time (at temperature) | 1 minute | 2 minutes | 5 minutes | 10 minutes |

General Considerations for Use

The coating is supplied ready to use but may be diluted for dip tank application or where multiple spray nozzles are being used.

It is vitally important to thoroughly mix the WSC1042 base component to ensure any settled ingredients are well re-dispersed before use, as settling of the matting agent and friction modifier can occur during storage. Once fully mixed (be sure that no sediment remains in the pail), the coating is ready to use.

The bath should be kept under constant agitation to prevent settling of the active powders and to ensure maximum bath life. For best results, the substrate should be clean and dry and have a minimum temperature of 80°C, as lower application temperatures can adversely affect the adhesion and appearance of the coating; in general, higher temperatures (up to approximately 160°C) for a limited duration will not affect the coating, and may actually lead to productivity gains.

For optimum coating adhesion and performance, ensure that all surfaces are clean and dry before applying the coating solution. The substrate temperature should be between 80 – 230°C for on-line application and a minimum of 80°C part temperature at the time of coating for off-line applications.

WSC1042 weatherstrip coating is recommended to be spray coated, although dip coating can be performed with success.

This coating is generally applied using multiple HVLP or electrostatic spray guns with an aircap diameter > 1.0mm. To avoid blocking of the guns, the coating should be filtered through a 200 micron mesh after the coating is prepared; it is good practice to install a further filter between the holding tank and spray guns. Most on-line applications use multiple spray guns to achieve even coverage of the profile during extrusion. It is important to apply sufficient material to achieve an initial wet look in order to help ensure continuous coverage and good coating adhesion. It is also possible to employ multiple spray heads in tandem to help ensure sufficient coating is applied and that no areas are left uncoated during the application process.

Typical bath life is 22 - 36 hours in a closed container which does not allow the surface to dry and form a skin which cannot be re-dispersed. Continuous slow speed agitation of the coating bath is recommended to reduce the possibility of settling of the matting agents and friction modifiers.

The applied coating thickness will depend on the application method and the required end-use requirements.

Dry film thicknesses are typically between 3 and 10 microns

Current Packaging

WSC 1042 20 Litre plastic pails with 18Kg fill

Patent Status

Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute a permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of the patent.

Product Safety, Handling and Storage

Customers should review the latest Safety Data Sheet (SDS) and label for product safety information, safe handling instructions, personal protective equipment if necessary, emergency service contact information, and any special storage conditions required for safety. Momentive Performance Materials (MPM) maintains an around-the-clock emergency service for its products. SDS are available at www.momentive.com or, upon request, from any MPM representative. For product storage and handling procedures to maintain the product quality within our stated specifications, please review Certificates of Analysis, which are available in the Order Center. Use of other materials in conjunction with MPM products (for example, primers) may require additional precautions. Please review and follow the safety information provided by the manufacturer of such other materials.

WSC 1042 weatherstrip coating components have a shelf life of 24 months from date of manufacture when in unopened containers under suitable storage conditions (>2°C and <43°C)

Limitations

Customers must evaluate Momentive Performance Materials products and make their own determination as to fitness of use in their particular applications.

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