

## WSC4029

Weatherstrip Coating

### Description

WSC4029 Weatherstrip coating is a 3-component system, comprising a black base emulsion WSC4029AC ,a crosslinker (WSC4029B) and a catalyst (WSC4029D or WSC4029cat ) which 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. WSC4029 coating is an excellent candidate to consider for coated surfaces such as automotive primary and secondary door seals or other seals where a smooth surface is preferred to impart high abrasion resistance while retaining a good low friction dark grey matt appearance.

There are a number of variants available to suit individual production line set ups and process parameters:

WSC4029AC+ is a formulation containing additional antifoam for better foam control.

WSC4029AC matt contains additional matting agent to achieve low gloss at limited process temperatures.

WSC4029cat is a drop in Tin-free replacement catalyst formulation for use where Tin complexes are not desirable

### Key Features and Typical Benefits

- Excellent freeze release characteristics
- Waterbased lower VOC content no NMP
- Low Static, Dynamic CoF, and smooth transition for low noise generation
- Excellent noise reduction properties
- Excellent adhesion to EPDM, TPE and other rubber formulations
- Fast heat cure process (approx.1 minute)
- Tin and Isocyanate content free formulation (using WSC4029cat)

### Typical Physical Properties

|  | <b>WSC4029AC</b>     | <b>WSC4029B</b>    | <b>WSC4029D</b> |
|--|----------------------|--------------------|-----------------|
|  | <b>Base Emulsion</b> | <b>Crosslinker</b> | <b>Catalyst</b> |
| Colour                                 | Black                | Milky White        | Pale Yellow     |
| Solids Content (%)                     | 30                   | 35                 | 95              |
| Density (@ 23°C)                       | 1.01                 | 1.00               | 1.08            |
| Viscosity (DIN 4cup @ 23°C (seconds))  | 13                   | 13                 | 28              |
| Viscosity (mPas , Brookfield #2 30rpm) | 5.5                  | 50                 | 80              |
| pH                                     | 9.0                  | n/a                | n/a             |
| Solvent                                | Water                | Water              | n/a             |

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

### Typical Cured Product Properties

| <b>Property</b>                            | <b>Test Method</b> | <b>Value</b> |
|--|--------------------|--------------|
| Coefficient of friction (Static & Dynamic) | DIN 53375          | < 0.3        |
| Abrasion Resistance (Crockmeter 9N load)   | Dry Crockmeter     | >500 cycles  |
| Freeze Release                             | TL 523 45          | Pass         |
| Repaintability                             | TSM 1701 G         | Pass         |
| Paint Staining                             | TSM 1701 G         | Pass         |

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

### 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 the 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 to achieve full coating performance. Higher temperatures of the substrate at the point of coating application are preferred in order to achieve best adhesion and appearance.

| <b>Part Temperature (actual not oven set point)</b> |          |           |           |            |
|---|----------|-----------|-----------|------------|
| Cure Temperature (°C)                               | 180°C    | 150°C     | 100°C     | 80°C       |
| Cure Time (at temperature)                          | 1 minute | 2 minutes | 5 minutes | 10 minutes |

### Sample Coating System<sup>1</sup> Preparation

The following sample formulation is provided as a suggested starting point actual formulations may vary.

| <b>Component</b>                      | <b>Loading by Weight</b> |                       |
|---------------------------------------|--------------------------|-----------------------|
| WSC4029 AC (including “+” and “matt”) | 155 parts                | Supplied as 15Kg Pail |
| WSC4029 B                             | 5 Parts                  | Supplied as 15Kg pail |
| WSC4029D (for “cat” use 2.0 parts)    | 1.5 parts                | Supplied as 1Kg can   |
| Water (if required)                   | 0 – 60 parts             | RO or Demineralised   |

### General Considerations for Use

It is vitally important to thoroughly mix the WSC4029AC component to ensure that any settled ingredients are well re-dispersed before use, as settling of the matting agent and friction modifier can occur on storage, Once fully mixed, the base emulsion is ready to use. Then add the crosslinker and water as required \* and finally the WSC4029D (or “cat”) . The coating is now ready to use.

**CAUTION:** DO NOT mix crosslinker and catalyst as both are highly reactive and can generate Hydrogen gas

\* Further dilution with water may be desired according to the temperature or type of substrate, the ,required dry film thickness and application method and needs to be established by trials on the end user’s production equipment.

<sup>1</sup>Product formulations are included as illustrative examples only. Momentive makes no representation or warranty of any kind with regard to any such formulations, including, without limitation, concerning the efficacy or safety of any product manufactured using such formulations.

For optimum coating adhesion and performance ensure 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.

WSC4029 weatherstrip coating is recommended to be spray coated.

This coating is generally applied using HVLP 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 a 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 12 hours in a partially closed container. Continuous slow speed agitation of the coating bath is recommended to reduce the possibility of settling of the matting agents and friction modifiers.

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

Dry film thicknesses are typically between 6 and 10 microns.

### **Current Packaging**

WSC 4029 AC 20 Litre plastic pail filled with 12.4Kg

WSC4029 B 15 Litre breathable pail or 1Kg metal can

WSC4029 D 15 Litre pails or 1Kg cans (WSC4029cat is also packed in 1KG metal cans)

### **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](http://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 4029 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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