Technical Data Sheet

WSC4009

Weatherstrip Coating

Description

WSC4009 Weatherstrip coating is a 4-component, matt black solvent-based silicone coating system that thermally cures to form a resilient silicone film. This system comprised a black base (WSC4009), a cross linker (XC89-A3399), an adhesion promoter (XC9603 for on line, or XC9615 for both on-line and off-line processing), and a catalyst ([1] YC6831 Tin complex or XC94-C6256 Tin free). The cured coating can help to provide substrate surfaces such as EPDM rubber with lubricating water repellency and easy release characteristics. WSC4009 coating is an excellent candidate to consider for dynamic seals, such as automotive primary and secondary door seals or other seals where a smooth surface is preferred, to impart low friction related noise generation. It can also be considered for use in a broad range of automotive applications.

Key Features and Typical Benefits

- Excellent freeze release characteristics
- 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 XC94-C6256)

Typical Physical Properties

Property	WSC4009	XC9615/9603	XC89-A3399	YC 6831 [1]
	Silicone Base	Adhesion Promoter	Crosslinker	Catalyst

Colour	Black	Colourless	Pale Yellow	Colourless
Solids Content (%)	27	14	10	29
Density (@ 23°C)	0.93	0.84	0.88	0.99
Viscosity (DIN 4cup @ 23°C (seconds))	20	13	12	
Viscosity (mPas , Brookfield #2@30rpm)	550			
Solvent	Xylene	IPA	Xylene	Toluene

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	>500 cycles
Abrasion Resistance (Crockmeter 200g load)	Dry Crockmeter	>5000 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 of is recommended in order to achieve the full coating performance.

Higher substrate temperatures are preferred in order to achieve best adhesion and appearance.

NOTE : If curing at ambient temperature the adhesion of coating to the substrate can be compromised and is not recommended

Part Temperature (actual not oven set point)					
Cure Temperature (°C)	180°C	150°C	100°C	80°C	25°C
Cure Time (at temperature)	1 minute	2 minutes	5 minutes	10 minutes	5 hours min

Sample Coating System Preparation

The following sample formulation is provided as a suggested starting point for spray applications.

Component	**Loading by Weight**	
WSC4009	100 parts	Supplied as 15Kg Pail
XC9615 (or XC9603)	50 Parts	Supplied as 15Kg pail
XC98-A3399	4 parts	Supplied as 1Kg can
YC6831	7.5 parts	Supplied as 1Kg can
Diluting Solvent [(1)] (if required)	0 – 400 parts	(2)

1. Compatible solvents include Hexane ,Heptane, White Gasoline, Mineral Spirits and Toluene
2. Further dilution with a solvent may be desired according to the part temperature, type of substrate, required dry film thickness, and application method. The final formulation needs to be established by trials on the end user's production equipment.

General Considerations for Use

It is vitally important to thoroughly mix the WSC4009 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 base is ready to use. Then add the crosslinker and solvent if required (see above) and finally the catalyst (YC6831 or XC94-C6256). The coating is now ready to use.

CAUTION: The order of addition is important . DO NOT mix crosslinker and catalyst as both are highly reactive and can generate Hydrogen gas.

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 of 200°C or higher will not affect the coating and may actually lead to productivity gains.

[1]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.
WSC4009 weatherstrip coating is recommended to be spray coated.
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 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 4009	15 Litre metal pails
XC89-A3399	15 Litre breathable pail or 1Kg metal can
XC9615 /XC9603	15 Litre pails 14 Kg fill
YC6831	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 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 4009 weatherstrip coating components have a shelf life of 24 months from date of manufacture when in unopened containers under suitable storage conditions (<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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