Technical Data Sheet

INVISISIL™ RTV6139-D1 SILICONE GEL

Description

RTV6136-D1 and RTV6139-D1 silicone gels are low viscosity, two component, liquid silicones which cure to form a very soft, gel-like elastomer. RTV6136-D1 and RTV6139-D1 silicone gels have been specifically formulated to offer superior cured strength characteristics versus conventional silicone gels. The improved strength of these products, when combined with their fast room temperature cure profile, makes them ideal for a variety of E/E & HEPA applications. These gels are available in clear and colored formulations.

Key Features and Benefits

- Superior tear resistance properties
- Fast room temperature cure times
- Primerless adhesion to many substrates
- Low shrinkage, non-exothermic cure
- Low volatility & weight loss properties
- Removable & repairable
- Convenient 1:1 mix ratio
- Extended low/high temperature stability
- Resistant to fungi growth
- Low toxicity, solventless formulation
- Available in colors for easy visual inspection

Typical Physical Properties

RTV6136-D1	Clear, Transparent
RTV6139-D1	Blue, Transparent
Uncured Properties (mixed 1:1 by weight)	
Viscosity, cps (@25°C)	750

Specific Gravity	0.98
Work Life, minutes (@25°C)	30
Cured Properties (1:1, cured 30 minutes at 150°C)	
Penetration, mm	6.5
Volatility, % (@25°C)	< 1.0
Useful Temperature Range	-50 to +204°C
Refractive Index	1.406

Patent Status

Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute the 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

CAUTION

The curing agent (“B” component) of RTV6136-D1 and RTV6139-D1 silicone gels can generate flammable hydrogen gas upon contact with acidic, basic, or oxidizing materials. Such contact should be avoided.

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.

Processing Recommendations

Compatibility

RTV6136-D1 and RTV6139-D1 silicone gels will cure in contact with most clean and

dry surfaces. However, certain materials, such as butyl and chlorinated rubber, sulfur-containing materials, amines, and certain metal soap cured RTV silicone rubber compounds can cause cure inhibition. The use of latex gloves will also cause cure inhibition. Cure inhibition is characterized by a lack of cure of the silicone gel at the interface between it and the substrate. Severe inhibition may result in no cure. Compatibility tests should be performed on all materials in contact with the uncured gel, including painted surfaces.

Surface Preparation

The adhesive performance of any polymer system is highly dependent upon proper surface preparation. In order to maximize the adhesion of RTV6136-D1 and RTV6139-D1 silicone gels and minimize the potential for cure inhibition, all parts should be as clean and dry as possible prior to the application of the silicone gel. Particular attention should be given to these areas which will come in direct contact with the gel during the curing process.

Bonding

RTV6136-D1 and RTV6139-D1 silicone gels offer excellent, reformable, pressure sensitive adhesion characteristics to a wide variety of different substrates without the need of a primer.

For difficult-to-bond-to substrates, or where more aggressive chemical adhesion is desired, the adhesion may be enhanced by using SS4155 silicone primer, available from Momentive Performance Materials. To apply the primer, thoroughly clean the surface and let dry. Then apply a uniform film (0.01-0.02 mm / 0.5-1.0 mil) of SS4155 silicone primer and allow the primer to air-dry for one hour or more. When dry, SS4155 silicone primer exhibits a white haze which will show through the silicone gel. If the appearance of the surface to be bonded must be unchanged (transparent), SS4120 silicone primer, also available from Momentive Performance Materials, may be used.

Mixing

RTV6136-D1 and RTV6139-D1 silicone gels are kit-matched products. As such, work time (pot-life), cure time, and final cured properties can only be assured if the batch numbers on the A component and B component are identical and the material is mixed at a ratio of 1:1 (by weight).

Due to their short work life, mixing of these gels for use in continuous or high volume production environments should be done via automated meter/static-mix dispensing equipment. The use of dynamic mixing equipment is not recommended.

For small quantities of gel which is to be used immediately, hand mixing can be done. To hand mix, select a clean mixing container 4-5 times larger than the volume of RTV silicone gel to be used. Weigh out equal amounts of the A & B components. With clean tools, thoroughly mix the A & B components together, scraping the sides and bottom of the container carefully to produce a homogeneous mixture. Care should be taken to minimize the amount of air entrapment.

Vacuum deaeration (25 mm mercury) can be used to remove entrapped air from the uncured mixture.

The final cured properties of RTV6136-D1 and RTV6139-D1 silicone gels can be altered by changing the mix ratio of the two components. Increasing the ratio of Part A to Part B will yield a softer gel (i.e. higher penetration value). Likewise, decreasing the ratio of Part A to Part B will result in a gel with a lower penetration value. Deviations greater than 10% from the standard 1:1 mix ratio are not recommended. Changes to the mix ratio will affect the pot-life of the catalyzed mixture and to some extent, the cured physical properties.

Equipment

Automatic equipment designed to meter, mix, and dispense two-component RTV silicone gels will add convenience and reliability to continuous or large volume operations. Due to its extremely short work life (pot-life), automated equipment is strongly recommended when using RTV6136-D1 and RTV6139-D1.

Curing

Cure Temperature	Cure Time
25°C	4 hours
50°C	2 hours
100°C	20 minutes
150°C	10 minutes

When used, ovens must be well ventilated.

CURE TIMES ARE ONLY APPROXIMATE. THE ACTUAL TIME IS AFFECTED BY THE MASS OF THE APPLIED SILICONE GEL AND THE TIME REQUIRED TO REACH THE DESIRED TEMPERATURE.

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

Contact Information
Email
commercial.services@momentive.com

Telephone

Americas

+1 800 295 2392
Toll free*
+704 805 6946
Direct Number

*All American countries

Latin America

Brazil
+55 11 4534 9650
Direct Number

Mexico
+52 55 2169 7670
Direct Number

EMEAI- Europe, Middle East, Africa & India

Europe
+390510924300
Direct number

India, Middle East & Africa
+ 91 44 71212207
Direct number*

ASIA PACIFIC

China
800 820 0202
Toll free
+86 21 3860 4892
Direct number

Japan
+81 3 5544 3111
Direct number

***All Middle Eastern countries, Africa, India,**	**Korea** +82 2 6201 4600

For literature and technical assistance, visit our website at: www.momentive.com

DISCLAIMER:

THE MATERIALS, PRODUCTS AND SERVICES OF MOMENTIVE PERFORMANCE MATERIALS INC. AND ITS SUBSIDIARIES AND AFFILIATES (COLLECTIVELY "SUPPLIER"), ARE SOLD SUBJECT TO SUPPLIER'S STANDARD CONDITIONS OF SALE, WHICH ARE INCLUDED IN THE APPLICABLE DISTRIBUTOR OR OTHER SALES AGREEMENT, PRINTED ON THE BACK OF ORDER ACKNOWLEDGMENTS AND INVOICES, AND AVAILABLE UPON REQUEST. ALTHOUGH ANY INFORMATION, RECOMMENDATIONS, OR ADVICE CONTAINED HEREIN IS GIVEN IN GOOD FAITH, SUPPLIER MAKES NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, (i) THAT THE RESULTS DESCRIBED HEREIN WILL BE OBTAINED UNDER END-USE CONDITIONS, OR (ii) AS TO THE EFFECTIVENESS OR SAFETY OF ANY DESIGN INCORPORATING ITS PRODUCTS, MATERIALS, SERVICES, RECOMMENDATIONS OR ADVICE. EXCEPT AS PROVIDED IN SUPPLIER'S STANDARD CONDITIONS OF SALE, SUPPLIER AND ITS REPRESENTATIVES SHALL IN NO EVENT BE RESPONSIBLE FOR ANY LOSS RESULTING FROM ANY USE OF ITS MATERIALS, PRODUCTS OR SERVICES DESCRIBED HEREIN. Each user bears full responsibility for making its own determination as to the suitability of Supplier's materials, services, recommendations, or advice for its own particular use. Each user must identify and perform all tests and analyses necessary to assure that its finished parts incorporating Supplier's products, materials, or services will be safe and suitable for use under end-use conditions. Nothing in this or any other document, nor any oral recommendation or advice, shall be deemed to alter, vary, supersede, or waive any provision of Supplier's standard Conditions of Sale or this Disclaimer, unless any such modification is specifically agreed to in a writing signed by Supplier. No statement contained herein concerning a possible or suggested use of any material, product, service or design is intended, or should be construed, to grant any license under any patent or other intellectual property right of Supplier covering such use or design, or as a recommendation for the use of such material, product, service or design in the infringement of any patent or other intellectual property right.