

LVG342 Low Volatile Silicone Adhesive

Product description

LVG342 low volatile silicone adhesive is a two component, thixotropic silicone adhesive that cures very quickly at elevated temperatures to a durable elastomer. LVG342 was specifically developed for applications that are sensitive to volatile siloxane species. For many applications, LVG342 is able to provide a very low level of volatility and out-gassing without the need for an extended post-cure bake cycle.

Key performance properties

- Very low controlled out-gassing & silicone volatiles
- Very fast cure at elevated temperatures
- Primerless adhesion to many substrates
- Outstanding compression set & CSR properties
- Excellent dielectric properties
- Ideal consistency for robotic dispensing
- Extended operating temperature performance

Applications

LVG342 low volatile silicone adhesive may be suitable for use in applications where the end-use application requires the high performance characteristics of a silicone, but is potentially functionally sensitive to low molecular weight, volatile siloxane species which may be released, via out-gassing, from a standard silicone polymer.

Typical property data

UNCURED MIXED PROPERTIES

Property	LVG342A	LVG342B	Mixed
Colour	White	Clear	White
Specific Gravity	1.20	0.99	1.19
Mix Ratio, by weight	10	1	n/a
Application Rate, g/minute	150	n/a	150
Flow, mm	n/a	n/a	5
Catalyzed Work Life, hours	n/a	n/a	12

Cured Properties (mixed 10:1, cured 1 hour @ 150C)

Property	Units	Value
Durometer Hardness	Shore A	40
Volatility, siloxane	ppm	<200
Tensile Strength	MPa	4.5
Elongation @ break	%	275
100% Modulus	MPa	1.3
Lap Shear Adhesion, steel to steel	MPa	3.1
Compression Set, 24 hrs@85C	%	< 5%
Dielectric Strength	kV/mm	19.7
Volume Resistivity	ohm.cm	1 x 10 ¹⁴

specifications

Typical product data values should not be used as specifications. Assistance and specifications are available by contacting Momentive performance materials

Instructions for use **Mixing**

LVG342 low volatile silicone adhesive is a two component product that needs to be thoroughly mixed at a ratio of 10:1 (A:B by weight) prior to application. For best results, it is strongly recommended that an automated meter-mixing pumping/dispensing system be utilized. For further details or equipment recommendations, please contact Momentive performance materials Technical Services.

BONDING

LVG342 low volatile silicone adhesive generally offers good adhesion to a wide variety of substrates, including both metals and many engineered thermoplastics, without the use of a primer. For best adhesion, surfaces to be bonded should be thoroughly clean and dry. If a solvent is used to clean the substrates prior to use, steps must be taken to ensure the solvent has completely evaporated prior to application and curing of the adhesive.

For difficult to bond to substrates, the use of a primer may improve the adhesion of the LVG342 low volatile silicone adhesive. However, the impact of the primer on the overall volatility properties of the applied material must be carefully evaluated.

Curing

LVG342 low volatile silicone adhesive cures very rapidly when exposed to elevated temperatures. Typical cure times are as follows:

Temperature	Cure Time
125C	20 minutes
150C	15 minutes
175C	10 minutes
200C	5 minutes

The cure times stated above are typical and are for estimating purposes only.

The actual cure time is application specific and will depend on such factors as cross-sectional thickness of the applied material, the thermal properties of the overall assembly, oven type and efficiency, oven loading, and overall required volatility levels. The total volatility of the cured material is affected by cure time and temperature conditions. LVG342 low volatile silicone adhesive will appear to be cured (i.e. dry to the touch) well before actually achieving complete cure and its minimum volatile levels. Comprehensive testing, under actual production conditions, should be conducted in order to establish the optimum curing conditions. LVG342 low volatile silicone adhesive must be cured in a well-ventilated oven.

Compatibility

LVG342 low volatile silicone adhesive will cure in contact with most clean and dry surfaces. 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. Cure inhibition is characterized by a gummy appearance of the LVG342 low volatile silicone adhesive at the interface between it and the substrate onto which it was applied.

Compatibility testing should be performed in order to ensure that the curing of the LVG342 low volatile silicone adhesive is not inhibited.

SURFACE PREPARATION

The performance of any reactive polymer system is highly dependent upon surface preparation. In order to maximize the properties of LVG342 low volatile silicone adhesive and minimize the potential for cure inhibition, all parts should be as clean and dry as possible prior to application of the silicone. Particular attention should be paid to those areas that will come in direct contact with the adhesive during the curing process.

Handling and safety

Material Safety Data Sheets are available upon request from Momentive performance materials. Similar information for solvents and other chemicals used with Momentive performance materials products should be obtained from your suppliers. When solvents are used, proper safety precautions must be observed.

CAUTION

LVG342B curing agent can generate flammable hydrogen gas upon contact with acidic, basic, or oxidizing materials. Such contact should be avoided.

Storage

The shelf life will be indicated by the 'use before date' on the associated documents with a minimum of 4 months when stored in the original unopened containers below 27° C.

Availability

LVG 342 A is available in 18,1 kg pails. The LVG 342 B is available in 1,8 kg packages. Products may be ordered from Momentive performance materials, the Momentive performance materials sales office nearest you or where appropriate, an authorized Momentive performance materials product distributor.

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.



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