

Silopren™ LIM9071ET

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Description

LIM®9071 ET TP 3915 liquid silicone rubber is a 2-component liquid injection moulding material which offers primerless adhesion to a wide range of substrates including metals and many engineering plastics, making it an ideal material for insert moulding applications. LIM®9071 ET TP 3915 liquid silicone rubber is designed to be used in a 1:1 mix ratio and cures rapidly at moulding temperatures of 150°C - 190°C to a high tear strength, translucent silicone elastomer.

Key Features and Benefits

- Primerless adhesion to many substrates
- Maximum adhesion immediately after de-moulding
- High temperature stability
- Excellent stability and flexibility at low temperatures
- Outstanding ageing behaviour and weathering resistance
- Good mechanical properties
- Easy pigmentable due to translucent colour

Typical Physical Properties

| Typical properties of the rubber: | | | |
|-----------------------------------|--|-------------|-------------|
| | | A Component | B Component |
| | | | |

| | | | | |
|----------------------------------------------------------------------------------------------------------------------------------------|------------------|-------------------|-------------|-------------------------|
| Appearance | | | translucent | translucent |
| Viscosity in Pas $\gamma = 10 \text{ s}^{-1}$ at 20°C | DIN 53018 | | 300 | 300 |
| The pot-life of the mixture of the two components (closed vessel) at 20 ° C is three days. Increased temperatures reduce the pot-life. | | | | |
| <u>Typical properties of the vulcanizate:</u> | | | | |
| Mixing ratio of components A : B = 1 : 1. Vulcanization: 10 min. 175 ° C | | | | |
| | | | As moulded | Postcured: 4 h at 200°C |
| Density | DIN 53 479 A | g/cm ³ | 1.11 | 1.11 |
| Hardness | DIN 53 505 | Shore A | 67 | 70 |
| Tensile strength | DIN 53 504 S2 | N/mm ² | 6.5 | 6.0 |
| Elongation at break | DIN 53 504 S2 | % | 300 | 250 |
| Tear strength | ASTM D 624 die B | N/mm | 20 | 18 |
| Compression set (22 h at 120°C) | DIN 53 517 | % | 9 | 8 |
| Compression set (22 h at 175°C) | DIN 53 517 | % | 60 | 30 |

Potential Applications

LIM[®]9071 ET TP 3915 is particularly suitable for the manufacturing of parts, where engineering plastics and elastomeric materials need to be combined in an over moulding or co-moulding process such as sealing elements, automotive connectors, membranes vibration dampening elements, etc.

Processing Recommendations

Compatibility

LIM[®]9071 ET TP 3915 liquid silicone rubber will cure in contact with most clean and dry surfaces. However, certain materials, such as butyl and chlorinated rubber, sulfurcontaining materials, amines, and certain metal soap cured RTV silicone rubber compounds can cause cure inhibition. Cure inhibition is characterized by a lack of cure of the liquid silicone rubber at the interface between it and the insert.

Compatibility tests should be performed on all materials in contact with LIM[®]9071 ET TP 3915 liquid silicone rubber, including painted surfaces, to ensure adequate cure.

Surface Preparation

The adhesive performance of any polymer system is highly dependent upon proper surface preparation. In order to maximize the adhesion of LIM[®]9071 ET TP 3915 liquid silicone rubber, and minimize the potential for cure inhibition. All parts should be as clean and dry as possible prior to the moulding of the LIM[®]9071 ET TP 3915 liquid silicone rubber. Particular attention should be given to these areas, which will come in direct contact with the silicone during the moulding process.

Bonding

LIM[®]9071 ET TP 3915 liquid silicone rubber is formulated to develop adhesion to a range of substrates without the use of a primer.

Mould Release

Because LIM[®]9071 ET TP 3915 liquid silicone rubber is formulated to offer primer less adhesion, it is necessary to use a release coating on the mould. For most applications, the use of a permanent mould coating, such as nickel-teflon, is recommended. Spray applied release agents may also be used, but should be very carefully evaluated to eliminate the potential for cure inhibition. For more information, contact Momentive Performance Materials.

Mixing

LIM[®]9071 ET TP 3915 liquid silicone rubber is a kit-matched product. 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).

LIM System Equipment

Pumping and meter-mixing systems for LIM[®]9071 ET TP 3915 liquid silicone rubber and appropriate injection moulding machines are available from a number of manufacturers, most of whom will provide a complete integrated system (exclusive of

the mould itself). Contact Momentive Performance Materials for further information.

Adhesion Testing Results

| Substrate | Adhesion* |
|-------------------------------------|-----------|
| ABS (CYCOLAC®) | G |
| Aluminum | E |
| PBT (VALOX®) | E |
| Polyamide (unfilled) | G/E |
| Polycarbonate (LEXAN®) - untreated | U |
| Polycarbonate (LEXAN®) - UV treated | E |
| Polyphthalamide (AMODEL®) | E |
| PPO/Nylon (NORYL GTX®) | E |
| PPO/PS (NORYL®) | G |
| PVC | E |
| Steel | E |

G = Good, E = Excellent, U = Unsatisfactory

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

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.

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

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