

LUMISIL[®] LR 7601/70 A/B



Liquid Silicone Rubber (LSR)

Liquid silicone rubbers of the LUMISIL[®] LR 7601 series are medium viscosity, two component compounds with short curing times. The vulcanizates are noted for their very high optical transparency and excellent mechanical and electrical properties.

Properties

The products can be used at temperatures down to -55 °C and even above +150 °C. The outstanding optical transparency extends over a broad range of the visible spectrum and exceeds the transparency of polycarbonate or polymethylmethacrylate. The refractive index $n_{D_{25}}$ is in the range of 1.41. LUMISIL[®] LR 7601/70 A/B is optimized for state-of-the-art requirements of optical parts. In contrast to standard ELASTOSIL[®] LR grades, the hardness in the product name of LUMISIL[®] LR 7601/70 A/B reflects the hardness of vulcanized articles in the non-post cured state. Depending on the injection molding parameters, the geometry of the final parts and the post curing conditions, hardness increases after post curing in the range of 5 to 8 points. In addition LUMISIL[®] LR 7601/70 A/B is listed in various UL (Underwriter Laboratory) standards including f1 rating, i. e. suitable for outdoor use with respect to exposure to Ultraviolet Light, Water Exposure and Immersion in accordance with UL 746C.

LUMISIL[®] LR 7601/70 A/B meets selected test requirements of ISO 10993 and United States Pharmacopoeia (USP) Class VI. It is designed for medical applications in compliance with the WACKER SILICONES HEALTH CARE POLICY.

Specific features

- Food-contact
- Highly transparent
- Low volatile
- Reduced volatile content

Technical data

Properties Uncured

Property	Condition	Value	Method
Viscosity, dynamic (1 s ⁻¹)	-	50000 mPa·s	DIN EN ISO 3219
Viscosity, dynamic (10 s ⁻¹)	-	44000 mPa·s	DIN EN ISO 3219

These figures are only intended as a guide and should not be used in preparing specifications.

Properties Cured

Cure conditions: 15 min / 165 °C in press

Property	Condition	Value	Method
Appearance	-	high transparent	-
Hardness Shore A	-	70	DIN ISO 48-4
Density	-	1.05 g/cm ³	DIN EN ISO 1183-1 A
Tensile strength	-	10.0 N/mm ²	ISO 37 type 1
Elongation at break	-	90 %	ISO 37 type 1
Tear strength	-	10 N/mm	ASTM D 624 B

These figures are only intended as a guide and should not be used in preparing specifications.

All the information provided is in accordance with the present state of our knowledge. Nonetheless, we disclaim any warranty or liability whatsoever and reserve the right, at any time, to effect technical alterations. The information provided, as well as the product's fitness for an intended application, should be checked by the buyer in preliminary trials. Contractual terms and conditions always take precedence. This disclaimer of warranty and liability also applies particularly in foreign countries with respect to third parties' rights.

Applications

- Dairy & Food Applications
- General Automotive Parts
- Lighting
- Molded Parts

Application details

These grades are particularly suitable for the economical production of large series of injection moulded articles with excellent optical transparency. Parts made from LUMISIL® LR 7601/70 A/B can be used for technical applications. These articles are also suitable for use in conjunction with foodstuffs.

The following studies were performed on vulcanizates of LUMISIL® LR 7601/70 A/B according to ISO 10993:

- Cytotoxicity (ISO 10993-5)
- Sensitation LLNA (ISO 10993-10)
- Pyrogenicity (ISO 10993-11)

The following studies were performed on vulcanizates of LUMISIL® LR 7601/70 according to USP class VI:

- Acute systemic toxicity
- Intracutaneous toxicity
- Implantation test

No adverse effects have been detected at any of the studies performed. A master file has been filed with the U.S. Food and Drug Administration. An authorization to reference the master file will be available upon request.

Postcured parts can be used for food contact applications and are suitable for use under the Recommendation "XV. Silicones" of the BfR and FDA § 177.2600 under observance of any given limitations on extractable and volatile substances.

Please note that the product contains low levels (<0.1%) of residual hydrocarbons which have to be removed from the finished food contact article.

Processing

The A and B components are delivered ready to use in 20 kg pail and 200 kg drum kits. With adequate metering equipment, they can be pumped directly from the original containers into the injection molding machine and mixed by a static mixer. The mixing ratio is 1 : 1. At room temperature, mixtures of A and B components have a pot life of at least three days.

For maximum transmission and transparency of injection molded parts, any cross contamination with standard silicones have to be avoided. Therefore, we recommend producing LUMISIL® LR 7601 series with a separate line. Additionally, processing parameters like injection speed, holding pressure have to be adapted to the corresponding viscosities of the LUMISIL® LR 7601 series to guarantee exact filling and de-aeration of cavities.

Compared to ELASTOSIL® LR, LUMISIL® LR 7601 series have less mechanical strength. This has to be taken into consideration for the demoulding process, a high shear on parts is not recommended. Demoulding technologies like mushroom ejectors or blowing-off by support of air pressure have been tested successfully.

Polygone® 505 is suitable to remove deposits or residues on sensitive mold surfaces. The use of an ultrasonic bath supports a careful cleaning without attacking the surface. It is recommended to use WACKER® Silicon spray in the initial phase of the injection molding process.

For detailed information refer to our brochure "SOLID AND LIQUID SILICONE RUBBER - MATERIAL AND PROCESSING GUIDELINES".

Packaging and storage

Packaging

This product is available in 20 kg pail and 200 kg drum kits.

Storage

Once opened, containers should always be resealed after use to prevent the platinum catalyst from being poisoned by amines, sulphur or phosphorus compounds. The 'Best use before end' date of each batch is shown on the product label. Storage beyond the date specified on the label does not necessarily mean that the product is no longer usable. In this case however, the properties required for the intended use must be checked for quality assurance reasons.

Safety notes

Comprehensive instructions are given in the corresponding Material Safety Data Sheets. They are available on request from WACKER subsidiaries or may be printed via WACKER web site <http://www.wacker.com>.

QR Code LUMISIL® LR 7601/70 A/B



For technical, quality or product safety questions, please contact:

Wacker Chemie AG, Hanns-Seidel-Platz 4, 81737 Munich, Germany
productinformation@wacker.com, www.wacker.com

The data presented in this medium are in accordance with the present state of our knowledge but do not absolve the user from carefully checking all supplies immediately on receipt. We reserve the right to alter product constants within the scope of technical progress or new developments. The recommendations made in this medium should be checked by preliminary trials because of conditions during processing over which we have no control, especially where other companies' raw materials are also being used. The information provided by us does not absolve the user from the obligation of investigating the possibility of infringement of third parties' rights and, if necessary, clarifying the position. Recommendations for use do not constitute a warranty, either express or implied, of the fitness or suitability of the product for a particular purpose.