

## POLIMER MV

**POLIMER MV** is methylvinylsilicone gum for manufacturing HTV silicone rubbers and is the main starting material for production of Polsil GUM silicone rubber.

This polymer is manufactured in two basic grades containing different quantity of vinyl groups:

- **POLIMER MV 0,07 – 0,07% (mol/mol)**
- **POLIMER MV 1,0 -1,0% (mol/mol)**

By mixing both types of the polymers in the proper ratio it is possible to adjust parameters of the rubber: hardness, durability, elasticity, etc. Due to the presence of double bonds, this type of rubbers are more susceptible to crosslinking (vulcanization) giving silicone gum of very good compression resistance and elasticity.

### CHARACTERISTICS

**POLIMER MV** is colourless high viscous liquid.

No.	Parameters	Unit	Properties	
			POLIMER MV 0,07	POLIMER MV 1,0
1.	Molecular weight	kg/kmol	600000 - 720000	500000 - 630000
2.	Vinyl group content	% (mol/mol)	0,05 – 0,09	0,9 – 1,1
3.	VOC content	% (m/m)	< 3	< 3

*Note! Upon customer request, polymer can be produced with a molecular weight within the 400000 - 720000 kg / kmol and the vinyl content of 0.03 to 1.1% (mol / mol).*

### PROPERTIES OF VULCANIZATES:

Vulcanizates manufactured from the pure, unfilled Polimer MV have a poor mechanical properties.

To obtain a silicone rubber with a good use properties the reinforcing fillers, especially pyrogenic silica should be added to the Polimer MV. As a result, after the vulcanization the compounds are processed into rubber of very good mechanical properties, high flexibility and transparency (which can be also easily coloured). Their property can be controlled by adjusting the composition of compounds: the amount of POLIMER MV 0,07 and POLIMER MV 1,0, the quantity and type of filler and additives.

### WARRANTY PERIODS:

POLSIL® GUM: 6 months from the production date

POLIMER MV: 24 months from the production date

### PACKAGINGS:

POLSIL® GUM: polyethylene foil and cardboard boxes.

POLIMER MV: polyethylene bags and plastic containers – 30 l capacity.

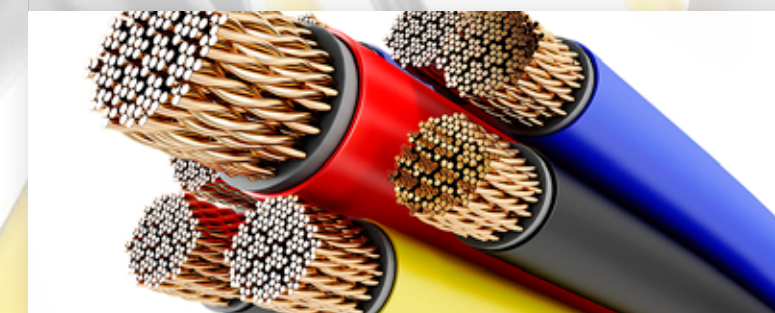
### STORAGE:

Store in the original tightly closed containers at dry conditions at temperature from 0 to 30°C.

### PRODUCER'S NOTE

The information contained in this document is given in good faith based on our current knowledge. However, this shall not constitute a guarantee for any specific product features. Each user bears the full responsibility for making its own determination as to the suitability of product for its own particular purpose. Because actual use of product by the user is beyond our control, such use is within the exclusive responsibility of the user, and we cannot be held responsible for any loss incurred through incorrect or faulty use of the product. For more detailed information please contact us in writing or by phone.

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**POLSIL® GUM**  
**HTV Silicone rubbers**  
(High Temperature Vulcanizing)

**Silicon rubbers POLSIL® GUM comprise a group of rubbers vulcanizing at high temperatures and are designed for production of products, which are characterized by:**

- high resistance to aging caused by light, oxygen, environment factors,
- resistance to low and high temperatures at low changeabilities of physical characteristic,
- resistance to UV radiation and ozone,
- physiologically neutral,
- chemical resistant,
- gas permeability,
- flexibility and durability,

moreover silicon rubbers represent good dielectrical and anti-adhesive properties. They are easy to process and colour.

HTV rubbers, due to excellent physical and chemical properties are widely used in many industrial branches, such as: aircraft, cable, automotive, machinery, metallurgical, energetic, electrical and electronic. Silicon rubbers are used for production of: hoses, sections and cords, suppression pads, various sorts of seals, cylinder lining, construction elements, panels, insulation of electric cables and many other extrusion moulded and moulded articles.

When proper processing conditions are ensured, silicon rubbers POLSIL® GUM can also be used for production of articles used in food, medical and pharmaceutical industry, that means everywhere where the materials have to fulfil highest expectations.

The diverse choice of POLSIL® GUM rubbers allows selection of proper type of compounds with desired set of properties for a given application.

## Physical and mechanical properties of POLSIL® GUM silicone rubber

Type	Colour	Hardness, [°ShA]	Density at 20°C, [g/cm <sup>3</sup> ]	Tensile strength, [MPa]	Elongation at brake, [%]	Tear resistance, [kN/m]	Application
<b>Polsil® GUM 100/30</b>	opalescent	25 - 35	1,08 - 1,12	min. 5,5	min. 500	min. 10	Production of extruded or moulded articles
<b>Polsil® GUM 100/40</b>	opalescent	35 - 45	1,10 - 1,14	min. 5,5	min. 500	min. 12	Production of extruded or moulded articles
<b>Polsil® GUM 100/45</b>	opalescent	40 - 50	1,10 - 1,14	min. 5,5	min. 400	min. 12	Production of extruded or moulded articles
<b>Polsil® GUM 100/50</b>	opalescent	45 - 55	1,12 - 1,16	min. 6,5	min. 300	min. 17	Production of extruded or moulded articles
<b>Polsil® GUM 100/60</b>	opalescent	55 - 65	1,15 - 1,20	min. 7,5	min. 300	min. 17	Production of extruded or moulded articles
<b>Polsil® GUM 100/70</b>	opalescent	65 - 75	1,15 - 1,22	min. 8,5	min. 250	min. 19	Production of extruded or moulded articles
<b>Polsil® GUM 122/60</b>	white	55 - 65	1,20 - 1,24	min. 7,5	min. 300	min. 17	Rubber of higher thermal resistance
<b>Polsil® GUM 311/70</b>	grey	65 - 75	1,38 - 1,42	min. 3,0	min. 200	min. 9	Sealings, gaskets production
<b>Polsil® GUM 410/30</b>	grey	25 - 35	1,16 - 1,20	min. 4,0	min. 400	min. 10	Flexible moulds production
<b>Polsil® GUM 213/60</b>	white-grey	60 - 70	1,22 - 1,28	min. 6,0	min. 200	min. 15	Flame retardant applications
<b>Polsil® GUM 210/65</b>	white-grey	60 - 70	1,40 - 1,44	min. 5,0	min. 150	min. 10	Insulation of electrical cables
<b>Polsil® GUM 215/65</b>	white-grey	60 - 70	1,34 - 1,40	min. 6,0	min. 200	min. 15	Insulation of electrical cables, so called safe cables
<b>Polsil® GUM 216/70</b>	white-grey	65 - 75	1,56 - 1,62	min. 6,0	min. 150	min. 15	Insulation of electrical cables, so called safe cables

**TEST SAMPLE VULCANIZATION** Curing time: 10 min at temp. 135°C after adding of 1,5% of 2,4-dichlorobenzoyl peroxide in the form of 50% paste in silicon fluid.

**Attention!** It is possible to select a rubber colour on request (from transparent to black, according to the RAL colour pattern)

HTV silicon rubbers are also offered in the form of a compounds ready for processing and containing such additives like peroxides, pigments etc. Depending on added peroxide, so called vulcanization initiator – a letter D, T or M is added to the name of a rubber. The vulcanization method together with a recommended quantity of curing agents are shown in the table below:

Compounds type	Peroxide type	Recommended dose	Curing method
<b>Polsil® GUM D</b>	bis(2,4-dichlorobenzoyl) peroxide 50% paste	1,5%	Suitable for press-moulding or extrusion Recommended conditions: 10 min at 135°C Post-cure: 4 hours at temp. 200°C
<b>Polsil® GUM T</b>	2,5-dimethyl 2,5 di (t-butyl peroxy) hexane 45% paste	1,5%	Press-moulding Recommended conditions: 10 min at 175°C Post-cure: 4 hours at temp. 200°C
<b>Polsil® GUM M</b>	bis(4-methylbenzoyl) peroxide 50% paste	0,8%	Suitable for press-moulding or extrusion Recommended condition: 5-10 min at 115°C Post-cure: 4 hours at 200°C

