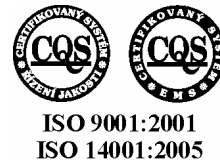




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LUKOSIL - Silicone Varnishes

Silicone varnishes form a large group of silicone products which are delivered for application in form of solutions in organic solvents. After they are coated and after their curing series of outstanding features will be shown, such as:

- resistance in a large range of temperatures
- hydrophobic character
- separating properties of films (plastics, foodstuffs)
- UV and weather resistance
- a possibility to modify organic resins.
- Silicone varnishes are divided in two groups: methylsilicone and methylphenylsilicone.

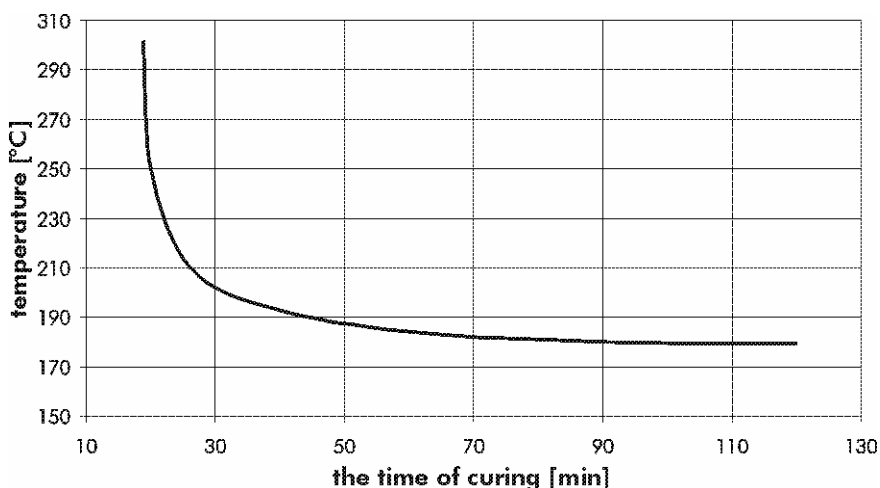
1. Methylsilicone varnishes LUKOSIL M

LUKOSIL M 130

represents a modern type of drying silicone varnishes and it is an outstanding product in its category. It is a solution of silicone resin in xylene as solvent.

Content of non-volatile components (%)	50 +/- 2
Density kg/m ³	1000 - 1020
Consistency /23 Deg C	24-51 s
Viscosity mPa.s/20 °C	30 - 40
Acid value mg KOH/g	0,02
Flammability class	2
Heat resistance	max. 230 Deg C
PND	47-234-95

LUKOSIL M 130 can be cured by heat without using a catalyst. The dependence of curing time on temperature is shown in the following graph:



At room temperature **LUKOSIL M 130** produces a non-sticking, resilient, partially mechanically and chemically resistant film. Its thermal curing enhances hardness and marked improvement in mechanical and mainly in chemical resistance. The created film resists the effects of organic solvents and stabilizes to withstand permanent thermal stress.

Application of Methylsilicone Varnish LUKOSIL M 130:

- In varnishes and paints industry as a binding agent for the production of paints with higher thermal (350 °C) and anticorrosive stability. **LUKOSIL M 130** contained in paints dries at a regular temperature which proves beneficial especially in products that are cured during their own use.
- In processing of plastics, natural and synthetic rubber as a separation paint for conditioning of pressing and casting moulds and resins.
- In electrical engineering as a binding agent for mica, asbestos, etc., for the production of electroinsulating and heat resistant sealing agents. The material enables to reach electroinsulating thermal class H (process temperature 180 DegC). product is also used as a protective coating on plates with chips. To achieve the better spreading of the product on chips it is recommended to dilute it with butanal at an amount of up to 10 % of weight.

2. Methylphenylsilicone varnishes LUKOSIL

Methylphenylsilicone varnishes contain in contrast to methylsilicone ones phenyl groups that enhance their heat resistance while keeping existing properties of methylsilicone varnishes. Generally it could be said, their usage is directed to the area of electrotechnics. They have due to their outstanding electroinsulating properties, corona effect resistance, mould resistance and chemical durability a bright range of application at the manufacturers of electric machines working under bad conditions and thermal class H (180 Deg C permanently), such as drive units of electric locomotives, trams, electric motors working in high relative humidity etc. All methylphenylsilicone varnishes require curing at the temperatures at least 200 Deg C, mostly also a catalyst for their faster curing. Varnishes coating on the subjects will be performed by cutting, wetting, coating and varnishing. Thermal curing- and approach curing temperature process are individual and are dependant on the way of coating, character of the product, used varnishes and catalyst.

Basic Properties of Methylphenylsilicone Varnishes

	150 (X)	200	200X	4101	4102	4107	901
Content of nonvolatile components (%)	50 ± 2	50 ± 2	50 ± 2	Min. 50	Min. 78	50 ± 2	70 ± 2
Consistency 20°C (s)	36 - 71	43 - 90	64 - 111	60 - 110	45 - 250	10 - 55	20 - 37 (23°C)
Viscosity (mPa.s)	80 - 150	80 - 150	80 - 150	60 - 110	180-230	60 - 110	50 - 100
Acid value - max. (mg KOH/g)	0,1	0,1	0,1	-	0,1	0,1	0,1
Drying time - max. (min./°C)	10/150	70/250	210/250	90/200	300/20	5/200	-
Curing time - max. (min./°C)	360/250	-	480/250	390/200	120/200	120/250 or 10/300	-
Dielectric strenght - min. (kV/mm)	60	60	60	60	-	-	10
Flammability class	1 (2)	1	2	2	1	1	1

LUKOSIL 150 X

- it is manufactured as a solution in xylene. It forms after curing hard and brittle film.
- **LUKOSIL 150 X** is also used as a binder in the formulation of paints with thermal resistance above 500°C, as adhesive lacquer for the production of mica insulating materials, asbestos paper and impregnated glass/fiber cloth. Silicon varnish is suitable for modification of other organic binders in order to substantially improve the final properties of the paint.

LUKOSIL 200 (X)

- it is manufactured as a solution in toluene or xylene (X) as well. After curing it forms elastic and partly elastic film.
- **LUKOSIL 200** is used as electroinsulating varnish in the production of electric motors and insulation of electric turn machines for permanently wet surroundings and tropics. **LUKOSIL 200** is also used as a binder in the formulation of paints with thermal resistance above 500°C.

Both varnishes types can be mixed in order to achieve the required parameters of the final film.

LUKOSIL 4107

- one-component solution of methylphenylsilicone resin for antiadhesive, heat and mechanical resistant and health safe surface processing especially in food industry.
- low viscosity clear to mild yellow liquid. It is soluble with solvents as lacquer petroleum, toluene, xylene, thinner S 6001, S 6005, S 6005.
- it is used especially as a separating layer with antiadhesive effect for inner coating of aluminium and steel dishes, but also for plastics casting moulds, paraffin, asphalt. From all silicone varnishes has this type the highest abrasion resistance at elevated temperatures as well. Heat resistance is 250 Deg C, short-term one 300 Deg C without the loss of hydrophobic properties. It competes in these properties to PTFE (teflon) surface conditioning.

The way of conditioning:

LUKOSIL 4107 will be coated on surfaces from aluminium or steel, that are perfectly degreased, the best in vapor of perchloroethylene. For perfect adhesion it is needed to blast the surface and namely closely before coating. Main coating of surface and namely closely before coating. Main coating of **LUKOSIL 4107** can be made by wetting, but the best is spraying. Optimum spraying thickness will be chosen in range between 20 and 40 microns after curing. **LUKOSIL 4107** is formulated in such way, that curing with a fast approach of temperature followed immediately after its coating. It can be done advantageously in continuous toluene oven at the temperature of 300 Deg C within 10 minutes.

The cured film is smooth and glossy and displays enhanced hardness and mechanical resistance even at higher temperatures. Its maximum thermal resistance is 300°C. Its use is safe for health. It exhibits excellent anti-adhesive properties not only in foodstuffs but also in a number of industrial materials (paraffin, asphalt, synthetic resin, polyethylene, etc.).

Methylphenylsilicone varnishes for special applications

LUKOSIL 4102

- clear solution of methylphenylsilicone resin with enhanced content of dry materials in acetone. It is noted for shorter drying time and thermal curing of the film. The catalyst C 66 is a necessary component of the varnishes as a part of the delivery (0,5 – 1,0 %). Application of this varnishes is as a glueing agent of joints such as glass and metal for glueing of lamp and electron tube base, resistive elements, joint elements, joint agent of layered insulating materials (mica) and so on.

LUKOSIL 901

- colourless to yellowish solution of methylphenylsilicone resin with enhanced content of dry materials in toluene. This varnishes serves as a sealing agent at the production of glassfibre laminates, that also meet the requirements of thermal insulating class H. To each batch catalysts (**LUKOSIL KATALYZATOR C 63** and **C 64**) for shortening curing time are delivered.

LUKOSIL 4101

- a solution of methylphenylsilicone resin in xylene, brown-violet color. It contains also the components shortening at the varnishes the thermal curing time. Its usage is similar as at **LUKOSIL 200 (X)**.

Note

With some applications of lacquers **LUKOSIL M 130**, **LUKOSIL 150 X** and **LUKOSIL 200 (X)** the time required for curing and for producing a film with better mechanical resistance can be reduced by using **LUKOSIL KATALYZÁTOR C 61**. The recommended dosing of a catalyst is 0.5 to 2.0 % of weight.

Safety and Hygiene

All of the **LUKOSIL** and **LUKOSIL CATALYST** are classified as dangerous agents. Therefore, proceed with utmost caution when working with the same preparations, observe the instructions shown on information labels and in safety data sheets.

Storage

LUKOSIL M 130, **150 X**, **200 (X)** and **901** - 12months, **LUKOSIL 4101**, **4102** and **4107** – 6 months from the date of the filling of the original packaging at a temperature ranging to + 30 °C, **LUKOSIL CATALYST** – 24 months. Transport will be regulated by the prescriptions about dangerous goods.

Packaging

17 kg petrol can.