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## CONTACTS

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## ABOUT US

SILICONES are materials, possessing unique characteristics: adhesive, anti adhesive, water-repellent, dielectric, heat and frost resistance, moisture resistance, durability, bio inertness, ecological compatibility. Because of all these benefits there is a permanent growth of silicones use in industrial processes.

Penta is the absolute leader in the field of development and production of advanced technology silicone materials in the CIS.

Penta has closely operated with silicone compositions since 1991. Now days, Penta is a large-scale company, which possesses a powerful scientific and production basis, highly skilled staff and modern technologies.

Penta produces over 400 appellations for different applications:

- RUBBERS
- EMULSIONS
- ANTIFOAM AGENTS
- SILANES
- RELEASE AGENTS
- WATER-REPELLENTS
- FOAMCONTROL
- ETHYLSILICATES
- GREASES
- RTV2
- AGENTS
- TETROETHOXYSILANE
- OILS
- SEALANTS
- DEMULSIFIERS
- SURFACTANTS

Penta is the only producer in the Russian Federation to produce silicone products as: polymerizing release agents, tensil sensitive glue, anti adhesive coating for lavesan and others.

We successfully cooperate with over 8000 companies from different branches of industry.



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## ABOUT US

Among our customers are:

Norilsk Nickel  
VAZ  
Lukoil  
Yukos  
TNK (Tyumen Oil Company)  
GAZ  
KAMAZ

and other leading industrial companies of CIS.

The existing scientific and production basis permits Penta to develop unique products according to individual customer's needs. Such developments were made for GAZ, OmskTyre, TNK and others.

Penta possesses large-scale producing facility's (about 1500 tons each month) with highly skilled personal, debugged industrial processes, exacting quality control, modern equipment of famous brands, for example, Kinematica AG (Swiss), Oliverly Battle (Spain) and others.

Penta's production is made under control of a quality management system, certificated by "Bureau Veritas Certification" conforming to the requirement of "ISO 9001:2000".



ISO 9001:2000

Penta gives special attention to ecological safety and product's purity.



## ABOUT US

### **The branches of industry, which use our silicones:**

- Oil industry
- Gas industry
- Metallurgy
- Chemistry
- Electrical engineering
- Power engineering
- Mining industry
- Varnish-and-paint industry
- Tire industry
- Textile industry
- Tanning industry
- Shoe industry
- Pipe-and-paper industry
- Woodworking industry
- Furniture
- Medicine
- Personal care
- Food industry
- Ceramic
- Glass
- Printing
- Instrument-making industry
- Mechanical engineering
- Rural economy
- Municipal economic
- Shipbuilding
- Car engineering
- Aircraft construction
- Car repair
- Building
- Plastic manufacture
- Rubber
- Household chemical goods

## PRODUCTS

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**PRODUCTS** → **Lubricants and Greases**

**Release agents and processing aids**

**High-temperature solid greases type PENTA<sup>®</sup>-200**

## PRODUCTS → Lubricants and Greases

### Release agents and processing aids

**Curable release agents for press molds - type PENTA<sup>®</sup>-100.** Develop a polymeric film on the surface of the press mold, which provides multi-detachment of the items in one application.

Applicable in mechanical rubber industry (production of molded articles, conveyer belts, raw-edge V-belts), tire industry (processing of rubber diaphragm for machines at II step of assembly work of radial tires), manufacturing of composites on the basis of polyester or epoxide binding agents (glass-fiber reinforced plastics and carbon fiber composites), composites on the basis of phenol formaldehyde binding agents (molded articles).

**Lubricant for inner and outer surfaces of tire before its vulcanization - Penta<sup>®</sup>-160.**

**Release agents for molding of products from roamed polyurethane and molding polyurethane - type PENTA<sup>®</sup>-120.** Applicable in manufacturing of heat-insulating products (pipes, pre-insulated by polyurethane foam, shells for pipes, sandwich-panels), inner and outer detailers of car interior (seats, backrests, headrests, steering wheel, dash fascia, air-auto filters, sound insulation of engine compartment, etc.), soles and footwear with soles from roamed polyurethane.

#### **Aerosol lubricants:**

**Si-M** - release silicone lubricant in aerosol package. Used for treating of molds in manufacturing of plastic and general mechanical rubber goods, aluminum foundry under pressure, etc.; rubbing and rotating parts (recommended for plastic mechanisms); extrusion nozzles in the chemical fibers production; shaping plates for manufacturing of articles from pressed wood-fiber board; accumulator drives. And also: for protection of molten solder; foam suppression; treatment of indicating panels, rubber articles for refining of their appearance; for easy removal of cement, gypsum, paint, etc. from window glass, construction equipment and instruments; for treatment of bits and industrial machines for corrosion prevention.

Silicone lubricant is chemically inert and does not cause metal corrosion. In contrast to mineral lubricants has a broad operating temperature range (from -40°C to +200°C) and low dependence of viscosity on temperature. Has a good dielectric property.

**KS-M** - castor lubricant in aerosol package. Used for treatment of molds in manufacturing of plastic and general mechanical rubber goods, aluminum foundry under pressure, etc.; rubbing and rotating parts (recommended for plastic mechanisms); extrusion nozzles in the chemical fibers production; shaping plates for manufacturing of articles from pressed wood-fiber board.

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## PRODUCTS → Lubricants and Greases

### Release agents and processing aids

And also: for protection of molten solder; foam suppression; treatment of indicating panels, rubber articles none for refining of their appearance; for easy removal of cement, gypsum, paint, etc. from window glass, construction equipment and instruments; for treatment of bits and industrial machines for corrosion prevention.

The main difference of castor aerosol lubricant from silicone aerosol lubricant is the possibility of painting, gum printing or covering, that need adhesion to the surface.

#### **Processing aids for footwear industry:**

Finishing oil for synthetic fibers - **Penta<sup>®</sup>-115**.

Lubricant for treating of blank part (leather) before prolonged process - **Penta<sup>®</sup>-116**.

#### **Processing aid for coating compositions:**

Doping agent for "hammered" enamels - **Penta<sup>®</sup>-140**.

**Composition for cleaning of press-molds during formation of products from polyurethane foam - Penta<sup>®</sup>-150.**

## PRODUCTS → Lubricants and Greases

### High-temperature solid greases type PENTA<sup>®</sup>-200

**Penta<sup>®</sup>-219D** - working range: -40 - +200°C. Appears to be silicone paste with good thixotropy. Is used in the operational process of high-temperature equipment as corrosion-resistant coat, damping material, for lubrication of flexographic instrumentation, office appliances. Its efficiency is on a level with silicone pastes NP11 and NP12 (Huls).

**Penta<sup>®</sup>-221D** - working range: -15 - +300°C. Silicone-fluoroplastic solid grease. Suitable for lubrication of rubbing parts, for example light- and medium-loaded roller bearings. Is used in food and medical industry, as well as for lubrication of separate units of office appliances (printers, scanners, etc.). Has good mechanical and thermal stability. Ensures safe operation up to +300°C (keeps plasticity, absence of baking). Chemically resistant.

**PRODUCTS** → **Water-repellent liquids and Fronts purifiers:**

**Water-repellent liquids type PENTA<sup>®</sup>-800**

**Fronts purifiers, washings type PENTA<sup>®</sup>-800**

## PRODUCTS → Water-repellent liquids and Fronts purifiers

### Water-repellent liquids type PENTA<sup>®</sup>-800

Modern constructional materials must possess elevated lightness and at the same time resistibility and water-resistance. Water-repellents are used for waterproofing of constructional materials. In addition cracking resistance, low-temperature resistance on retention of mechanical strength and thermal-insulating properties are improved. For this purposes the compositions on the basis of organic silicones are used. They develop a monomolecular indelible film in the pores and on the surface, which prevents water invasion. Silicones do not prevent diffusion of vapor - the coating is "breathing", that is preserves gas and vapor permeability. The company Penta offers most recent complex silicone impregnators for treatment of constructional materials. These products are easy to use and meet global environmental standards.

**Water-repellent liquid Penta<sup>®</sup>-824.** For protection against moisture of the surfaces of absorbing porous constructional materials: brick (red and calcium silicate) and concrete of all types, natural and artificial stone, foamed concrete, gas concrete and mineral plaster. For treating of walls, internal partitions and building sides, cottages and industrial structures. Consumption - 1 l of dilute solution for 3-4 m<sup>2</sup> of the surface.

**Water-repellent liquid Penta<sup>®</sup>-820.** For surface protection of concrete of all types, artificial stone on mineral base, mineral plasters, ceramic tile, calcium silicate brick, cement-fiber boards. It's suitable for the surfaces that are destined for the subsequent coloring. Excellent alkali stability makes Penta<sup>®</sup>-820 an ideal water-repellent agent for the concrete. It can be diluted with white spirit in the ratio from 1:1 to 1:3 or with water in the same ratio (with the use of obtained water solution during 24 hours). Consumption - 1 l of dilute solution for 3-4 m<sup>2</sup> of the surface.

**Water-repellent liquid Penta<sup>®</sup>-811.** For protection of ceramic brick, shell rock, limestone, gas concrete, foamed concrete, sand-cement renderings, roofing slate, asbestos sheeting, claydite-concrete, cement chipboard, plaster, gypsum plasterboard. It is diluted with water 10-20 times depending on the sort of materials. Consumption is 30-100 g/m<sup>2</sup> for surface application. For volume introduction - the consumption of the concentrated product is 0,2-0,5% by weight from cementing material. At realization of gate-type flashing - consumption is 5-10 kg/m<sup>3</sup>.

**Water-repellent liquid Penta<sup>®</sup>-818.** For integral waterproofing of concrete, foam concrete, cement-sanded plasters. Consumption of the concentrated product is 0,2-0,5% by weight from cementing material.

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## PRODUCTS → Water-repellent liquids and Fronts purifiers

### Water-repellent liquids type PENTA<sup>®</sup>-800

**Water-repellent liquid Penta<sup>®</sup>-814.** For protection of gypsum, brick walls, mineral plasters, natural stone, artificial stone on cement base, mineral cotton, silica white, mineral paints, textiles. It's diluted with water 5-10 times and used as a modifying agent for concrete and gypsum. In concrete - as a gas-forming admixture - enhances low-temperature resistance and confers hydrophobic properties. Consumption is 0,2-0,5% by weight from cementing material or from gypsum with tempering water.

**Water-repellent liquid Penta<sup>®</sup>-812.** Is used in the manufacturing of mineral cotton, mineral wool boards, basalt wools and fibered glass for reduction of moisture absorption. Is added to the binder solution or to the hydro-compound or is used directly for the treatment of the carpet by means of injectors. Consumption - 1-1,5% by weight from cementing material (phenol-formaldehyde resin).

**Water-repellent liquid Penta<sup>®</sup>-813.** For protecting of gypsum, brick walls, mineral plasters, natural stone, artificial stone on cement base, mineral cotton, silica white, mineral paints, textiles. Is used in the manufacturing of mineral cotton, mineral wool boards, basalt wools and fibered glass for reduction of moisture absorption. Is added to the binder solution or to the hydro-compound or is used directly for the treatment of the carpet by means of injectors. Consumption - 1-1,5% by weight from cementing material (phenol-formaldehyde resin).

**Water-repellent liquid Penta<sup>®</sup>-831.** For protection of the surfaces of mineral plasters, sandstone rock and calcium silicate brick. It's used as a grounding for mineral surfaces. Dilution with water in the ration from 1:4 to 1:9 is allowed. Consumption - 1 l of diluted solution for 2-4 m<sup>2</sup> of the surface.

**Pentalak** - interpenetrating impregnating acrylic lacquer with silicone additives. It's used for protecting of concrete and stone as a sparing and dust laying composition for concrete surfaces. It's applied for treatment of concrete floors and walls in the industrial occupancies, warehouses and basements and can be used for protection of paving slabs, asbestos slate, artificial stone, etc. It stands against wearing-off, deterioration, weathering, destruction and pollution, easily washed. Is resistant to the attack of benzine, turpentine, lubricators, consistent lubricants, vegetable and animal oils, diluted solutions of acids and alkalis. It confers water resistance to the processed materials. Strengthens concrete or cement based solution through the whole penetrating aria. Consumption - 250-300 g/m<sup>2</sup> of the surface.



## PRODUCTS → Water-repellent liquids and Fronts purifiers

### Fronts purifiers, washings type PENTA<sup>®</sup>-800

**Penta<sup>®</sup>-870** - subacid purifier for brick, natural stone, facing concrete. It removes wall saltpeter, traces of cement plasters and mortars. Is diluting by water 1:2-1:10 in depending on fouling factor. Expenditure is 1 kg of concentrate per 10-15 m<sup>2</sup>. Doesn't change appearance of material and doesn't break its structure, ecological safe, flame- and blast-proof.

**Penta<sup>®</sup>-880** - powder purifier for brick, natural stone, facing concrete. It removes wall saltpeter, traces of cement plasters and mortars. Is diluting by water 1:2-1:10 in depending on fouling factor. Expenditure is 1 kg of concentrate per 20-25 m<sup>2</sup>. Expenditure is 1 kg of concentrate per 10-15 m<sup>2</sup>. Doesn't change appearance of material and doesn't break its structure, ecological safe, flame- and blast-proof.

**Penta<sup>®</sup>-860** - neutral powder purifier for delicate surfaces: marble, natural stone, etc. It removes wall saltpeter, traces of cement plasters and mortars. Is diluting by water 1:10-1:20 in depending on fouling factor. Expenditure is 1 kg of concentrate per 20-25 m<sup>2</sup>. Expenditure is 1 kg of concentrate per 25-35 m<sup>2</sup>. Doesn't change appearance of material and doesn't break its structure, ecological safe, flame- and blast-proof.

**PRODUCTS** → **Silicone compounds and Sealants:**

**Silicone adhesive sealants (RTV1) type PENTELAST**

**Silicone compounds and hermetics (RTV2) type PENTELAST (2-components)**

**Sealant silicone paste Penta<sup>®</sup>-501z**

**Silicone gel for mammary prosthesis - Penta<sup>®</sup>-302**

## PRODUCTS → Silicone compounds and Sealants:

### Silicone adhesive sealants (RTV1) type PENTELAST

**Sealant Pentelast-1100** - neutral, universal. Thixotropic, non-shrinking, dielectric, ultraviolet resistant, waterproof, weatherproof, easy to use. Good adhesion to most materials including any metals.

**Sealant Pentelast-1101** - neutral, universal. Non-shrinking, ultraviolet resistant, waterproof, weatherproof, easy to use. Good adhesion to most materials including any metals.

**Sealant Pentelast-1102** - acidulous universal. Non-shrinking, ultraviolet resistant, waterproof, weatherproof, easy to use. Good adhesion to most materials.

**Sealant Pentelast-1103** - acidulous sanitary. For hermetic sealing and conglutination in the places with high humidity.

**Sealant Pentelast-1104** - acidulous aquarial. Is used for hermetic sealing and reparation of aquaria, terrarium cages, swimming pools, etc., non-hazardous for animals and fish. Non-shrinking, ultraviolet resistant, salt-water resistant, weatherproof, easy to use. Good adhesion to most materials.

**Sealant Pentelast-1105** - acidulous electro insulating. For hermetic sealing and conglutination in radio electronics and high-voltage industry. Electro insulating, heat-resisting, non-shrinking, ultraviolet resistant, waterproof, weatherproof, easy to use. Good adhesion to most materials.

**Sealants Pentelast-1110** (highly viscous) and **Pentelast-1130** (fluidal) - neutral heat-resistant. Are applied for hermetic sealing and conglutination of different materials, used at high temperatures. Heat-resistant, non-shrinking, electro insulating, ultraviolet resistant, waterproof, weatherproof, easy to use. Good adhesion to most materials including any metals.

**Sealant Pentelast-1111** - low-modulus neutral. Suitable for hermetic sealing of inter-panel joints in buildings and where high elasticity is needed. Highly elastic, thixotropic, non-shrinking, ultraviolet resistant, waterproof, weatherproof, easy to use. Good adhesion to most materials including any metals.

**Sealant Pentelasts-1143** (acidulous) and **Pentelast-1153** (neutral) - professional. Used where high adhesion and joint efficiency is needed. Non-shrinking, strong, dielectric, ultraviolet resistant, waterproof, weatherproof, easy to use. Very good adhesion to most materials.

**Sealants Pentelast-1159** and **Pentelast-1161** - neutral, heat-resistant, automobile. Used in car and engines manufacturing and for their reparation. Thixotropic, non-shrinking, oil and gasoline-resistant, heat-resistant, waterproof, easy to use. Good adhesion to most materials including any metals.

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## PRODUCTS → Silicone compounds and Sealants:

### Silicone adhesive sealants (RTV1) type PENTELAST

Type	Pentelast												
	1101	1102	1103	1104	1100	1111	1110	1130	1105	1143	1153	1159	1161
Working temperature, °C	-40 - +120	-40 - +120		-40 - +150	-60 - +200				-60 - +270				-60 - +250
Appearance	viscous mass												
Tensile strength, Mpa, not less	0.8	0.6	0.7	1.0	1.0	1.16	2.0	1.6	1.3	4.5		2.98	2.3
Breaking elongation, %, not less	200	200	300	200	150	380	250	200	200	500		250	250-300
Density, g/cm <sup>3</sup>	1.01	0.98	0.98	1.02	1.45	1.01	1.7	1.5	1.1	1.01		1.35	1.1
Electrical strength, kV/mm, not less					23.0		9.1	7.8	27	21			
Electrical inductivity, not more					4.5		3.7	3.7	3.25	3.1-2.8			
Loss tangent of a dielectric, not more					9.4 *10 <sup>-1</sup>		6.5 *10 <sup>-3</sup>	5.6 *10 <sup>-3</sup>	4.1 *10 <sup>-3</sup>	(28-10) *10 <sup>-4</sup>			
Color	white, grey								white, blue	semi-transparent, white	dark grey, black	red	
	or on request - red, grey, blue, green, black, brown												

## PRODUCTS → Silicone compounds and Sealants:

### Silicone compounds and hermetics (RTV2) type PENTELAST (2-components)

**Compound Pentelast-710.** For production of flexible molds, used for multiplex replication of copies of items with irregular shape. Molds from Pentelast-710 can be used for long time at temperatures not above +200°C. Pentelast-710 is a resilient fluid formulation of white or cream color. Is supplied as a base completed with activator. Pentelast-710 is cured to rubber-like consistency at room temperature during 24 hours.

**Hermetic Pentelast-711.** Thermoresistant (up to +260°C) casting hermetic for gluing of metallic and non-metallic surfaces, including hard silicone rubber of hot and cold vulcanization, hermetization of different apparatuses, working in air environment, in vibration conditions and for protecting them from moisture. Also for hermetization of screw treads of pipelines, inner systems of cold and hot water-supply and heating systems of the buildings.

**Hermetic Pentelast-712.** Optically transparent. For hermetization of metallic and non-metallic surfaces, for hermetization of different apparatuses, working in air environment, in vibration conditions and for protecting it from moisture.

**Hermetic Pentelast-713.** Cold resistant - up to -90°C. Optically transparent. For hermetization of metallic and non-metallic surfaces, for hermetization of different apparatuses, working in air environment, in vibration conditions and for protecting it from moisture.

**Hermetic Pentelast-714.** Thermoconductive. For hermetization of electro- and radio equipment, working in the air atmosphere and elevated moistening range. Thermal conductivity - 1,2 W/m.deg (at +25°C).

**Compound Pentelast-720.** For manufacturing of flexible molds, used for multiplex replication of copies of items with irregular shape. Molds from Pentelast-720 can be used for long time at temperatures not above +200°C.

**Hermetic Pentelast-722.** Thermoresistant (up to +250°C). For gluing of metallic and non-metallic surfaces, including hard silicone rubber of hot and cold vulcanization, hermetization of different apparatuses, working in air environment, in vibration conditions and for protecting them from moisture. Also for hermetization of screw treads of pipelines, inner systems of cold and hot water-supply and heating systems of the buildings.

## PRODUCTS → Silicone compounds and Sealants:

### Silicone compounds and hermetics (RTV2) type PENTELAST (2-components)

Parameter	Pentelast					
	711	712	713	714	720	722
Nominal tensile strength value, MPa, not less	1,67	0,25	0,19(0,2)		2,1	1,5
Elongation at break, %, not less	120	110	100		170	110
Binding force with metal in under layer during peeling, kN/m (kgf/cm <sup>2</sup> ), not less	0,69(0,7)	0,29(0,3)	0,19(0,2)		1,4	0,5
Specific insulation resistance at (20±5)°C, 0*cm	1*10 <sup>13</sup>	1*10 <sup>13</sup>		1*10 <sup>14</sup>	1*10 <sup>13</sup>	2,8*10 <sup>14</sup>
Sheet resistance at (20±5)°C, 0*cm		1*10 <sup>13</sup>		1*10 <sup>14</sup>	1*10 <sup>13</sup>	2,7*10 <sup>14</sup>
Dielectric loss tangent at freq. 10 Hz, not more		0,0025		0,0025		
Electrical strength at (20±5)°C and relative humidity (65±5)%, kv/mm, not less			15	16	16	13

**Compound Pentelast-750.** For manufacturing of molds. There is a food certificate.

Breaking strength, MPa	6,5
Elongation at break, %	530
Scuff resistance, kN/m	23
Linear shrinkage, %	<0,05

**Foam hermetic Pentelast-715.** For hermetization and vibration insulation of elements of electronical equipment and electrical devices, including high-voltage insulations. Is produced in two types: N and M. Type N is used at temperatures from -30°C to +250°C, type M - from -90°C to +250°C. Foam hermetic is applied in conditions with high moisture, high temperature jumps, vibration, mechanical influence. Storage stability is not less than 12 years in warm place. Foam hermetic Petelast-715 - is a paste-like material of white color, which achieves rubber-like consistency with porous structure under influence of catalizer and binding agent.

**Foam hermetic Pentelast-740.** For hermetization and vibration insulation of elemnts of electrical equipment, including high-voltage insulators. Is applied in conditions with high moisture, high temperature jumps, vibration, mechanical influence. Is used at temperatures from -60°C to +250°C. Pentelast-740 - is a paste-like material of white color, which achieves rubber-like consistency with porous structure under influence of catalizer and binding agent.

Parameter	Pentelast-715		Pentelast-740
	type «N»	type «M»	
Foaming coefficient, not less	1,5	1,5	2-2,5
Packed density, kg/m <sup>3</sup> , not above	750	750	
Dielectrical strength at (20±5)°C and relative humidity (65±5)%, kv/mm, not less			7,7



## PRODUCTS → Silicone compounds and Sealants:

### Sealant silicone paste Penta<sup>®</sup>-501z

Non-curing formula for multiplex anti-corrosion protection. For protection of hatch covers, flanges, valves, used in petrochemical industry, heat power industry, waterworks (heating systems). Applied for external insulation of terrestrial and underground steel structures (oil tanks and pipeline systems), including hatch covers, lifting rings, mufts, flange mountings, welded joints.

Guarantee practically lifetime insulation of pipes, wrapped with polyethylene bands.

Penta<sup>®</sup>-501 is used on polyethylene, polypropylene, PVC, all types of steel, aluminium, copper, zinc, etc.

## PRODUCTS → Silicone compounds and Sealants:

### **Silicone gel for mammary prosthesis - Penta<sup>®</sup>-302**

Penta<sup>®</sup>-302 is ecological pure silicone gel for producing of mammary prosthesis for women who underwent mastectomy. It is the two-component transparent or skin color composition, mixed 1:1. It is cured at +120°C - +160°C during 1-2 hours. In cured state completely imitates human body (breasts) in firmness and elasticity. It has good adhesion to polyurethane film.

## PRODUCTS → Silicone rubber compounds type PENTASIL

### Silicone rubber compounds type PENTASIL

The Penta company is a leading producer of hard silicone rubber compositions of heat vulcanization in Russia - holds 40% of russian market. Assortment of produced rubbers: more than 1600 items, 17 types.

Properties:

1. Thermo stability: -60 - +200°C, -60 - +250°C, -115 - +250°C, -60 - +315°C.
2. Service durability: more than 30 years. Resistance to radiation and ultraviolet irradiation.
3. Biological inertness.
4. Dielectric properties: 20 kV/mm.
5. Hydrophobic nature.

#### HTV - hard rubber heat-vulcanized

By vulcanization: 1. Peroxide: Low-temperature, High-temperature. / 2. Additive: Two-component, Single-component.

By processing: For press molding (Direct molding, Transfer molding, Injection molding); For extrusion molding; For pan vulcanization; For calendaring. Single-step; Two-step.

#### Type I - general purpose

##### Pentasil 1200 - 1900

Color		on request
Density	g/cm <sup>3</sup>	1,12-1,19
Hardness (Shore A)		12-90
Nominal tensile strength	Mpa	8,0-11,8
Elongation at break	%	300-950
Tear strength	N/mm	17-26
Rebound elasticity	%	45-60
Compression set	%	25-55

**Application:** molded components, rolled sections, tubes, medical goods, machine manufacturing, electrotechnics, household appliances.



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## PRODUCTS → Silicone rubber compounds type PENTASIL

### Silicone rubber compounds type PENTASIL

#### Type II - wire coating Pentasil 2400 - 2700

Color		on request
Density	g/cm <sup>3</sup>	1,20-1,23
Hardness (Shore A)		45-70
Nominal tensile strength	Mpa	8,0-10,0
Elongation at break	%	250-450
Tear strength	N/mm	19/30
Oxygen index (LOI)		30
Volume resistivity	Om * cm	10 <sup>16</sup>
Dielectric power (plate 2mm)	kV/mm	20
Dielectric constant)		2,8
Dielectric loss tangent (50Hz, 25°C)	x*10 <sup>-4</sup>	30/60

General purpose - +180°C, 20000 h. Thermo stability - +200°C, 20000 h.  
Flame-retardant - oxygen index 30. Flame proof - ceramic-form - 4 h,  
+1150°C. Oil-resistant. Resistant to aggressive influences.

**Application:** wires, cables, rail transportation, sea transportation, air transport.

#### Type III - for medium and high voltage equipment (insulators)

#### Pentasil 3301 - 3306

Color		white, grey, blue
Density	g/cm <sup>3</sup>	1,35-1,55
Hardness (Shore A)		55-70
Nominal tensile strength	Mpa	5,0-7,0
Elongation at break	%	200-300
Tear strength	N/mm	15
Oxygen index (LOI)		28
Volume resistivity	Om * cm	>10 <sup>16</sup>
Dielectric power (plate 2mm)	kV/mm	20-24
Dielectric constant)		2,8
Tracking-erosion resistance	Class kWt	3,5-4,5
Dielectric loss tangent (50Hz, 25°C)	x*10 <sup>-4</sup>	30

**Application:** Application: line insulators, support insulators, voltage suppressors.



## PRODUCTS → Silicone rubber compounds type PENTASIL

### Silicone rubber compounds type PENTASIL

#### Type IV - oil resistant Pentasil 4400 - 4800

Color		on request
Density	g/cm <sup>3</sup>	1,10-1,40
Hardness (Shore A)		40-80
Nominal tensile strength	Mpa	6,0-10,0
Elongation at break	%	200-700
Tear strength	N/mm	12-20
Rebound elasticity	%	45-70
Compression set	%	15-25

**Application:** layings, rings, armoured and unarmored collars rollers.

#### Type VI – special with high tear Pentasil 6300 - 6700

Color		on request
Density	g/cm <sup>3</sup>	1,13-1,17
Hardness (Shore A)		30-70
Nominal tensile strength	Mpa	9,0-11,0
Elongation at break	%	550-1000
Tear strength	N/mm	35-40
Rebound elasticity	%	45-55
Compression set	%	25-45

**Application:** diaphragms, collars, gaskets, gauffered items.

#### Type V - special extrusion-type Pentasil 5600 - 5700

Color		on request
Density	g/cm <sup>3</sup>	1,17-1,19
Hardness (Shore A)		60-75
Nominal tensile strength	Mpa	10,0-11,0
Elongation at break	%	450-500
Tear strength	N/mm	27-34
Rebound elasticity	%	51-55
Compression set	%	30-40

Fine cohesion strength - keeps the form. High tear resistance. Super-transparency.

**Application:** slender sections, hoses, medical tubes, intricate profiles.

#### Type VII - porous Pentasil 7000

Color		on request
Density	g/cm <sup>3</sup>	0,40±0,1
Hardness (Shore A)		15
Nominal tensile strength	Mpa	1,5
Elongation at break	%	300
Tear strength	N/mm	5

**Application:** porous profiles.



## PRODUCTS → Silicone rubber compounds type PENTASIL

### Silicone rubber compounds type PENTASIL

#### Type VIII - with low compression set Pentasil 8600 - 8700

Color		on request
Density	g/cm <sup>3</sup>	1,2-1,16
Hardness (Shore A)		60-70
Nominal tensile strength	Mpa	8,0-9,0
Elongation at break	%	300-400
Tear strength	N/mm	15-17
Rebound elasticity	%	50-55
Compression set	%	7-25

High chemical resistance to solvents.

**Application:** rings, sealers.

#### Type X – with fine cohesion strength Pentasil 10600 - 10700

Color		on request
Density	g/cm <sup>3</sup>	1,14-1,18
Hardness (Shore A)		55-70
Nominal tensile strength	Mpa	9,0-10,0
Elongation at break	%	400-450
Tear strength	N/mm	18-22
Rebound elasticity	%	50-60
Compression set	%	15-35

Fine framework. Fine temperature aging.

**Purpose:** for vertical extrusion, false profiles, calendaring.

**Application:** rubber sheet, complex profile.

#### Type IX - for filling Pentasil 9200 - 9400

Color		transparent
Density	g/cm <sup>3</sup>	1,10-1,13
Hardness (Shore A)		18-45
Nominal tensile strength	Mpa	6,0-8,0
Elongation at break	%	600-950
Tear strength	N/mm	13-15
Rebound elasticity	%	57-65
Compression set	%	25-15

**Application:** rubber coating of rollers, suspension of muffler, molded articles.

#### Type XI - temperature-resistant Pentasil 11400 – 11600

Color		on request
Density	g/cm <sup>3</sup>	1,13-1,16
Hardness (Shore A)		40-60
Nominal tensile strength	Mpa	9-11
Elongation at break	%	500-800
Tear strength	N/mm	21-27
Rebound elasticity	%	42-47
Compression set	%	15-35

Working capacity up to 7 days at +300°C.

**Application:** products with temperature resistance up to +315°C.



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## PRODUCTS → Silicone rubber compounds type PENTASIL

### Silicone rubber compounds type PENTASIL

#### Type XII - for rubber coating of rollers Pentasil 12200 - 12600

Color		on request
Density	g/cm <sup>3</sup>	1,16-1,22
Hardness (Shore A)		18-65
Nominal tensile strength	Mpa	8,0
Elongation at break	%	250-450
Tear strength	N/mm	15
Rebound elasticity	%	45
Compression set	%	15

**Application:** photocopying and guide rollers.

#### Type XIV - freeze-resisting Pentasil 14400 - 14600

Color		on request
Density	g/cm <sup>3</sup>	1,16
Hardness (Shore A)		40-65
Nominal tensile strength	Mpa	12/11
Elongation at break	%	550-500
Tear strength	N/mm	28-24
Rebound elasticity	%	50-60
Compression set	%	30-25

Freezing resistance: -115°C.

**Purpose:** shock-absorbers, radiation resistant products.

#### Type XIII - vapor resistant Pentasil 13600

Color		on request
Density	g/cm <sup>3</sup>	1,19
Hardness (Shore A)		60
Nominal tensile strength	Mpa	8,5
Elongation at break	%	300
Tear strength	N/mm	17
Rebound elasticity	%	45
Compression set	%	30

Stands against vapor (+160°C) for 2 months.

**Application:** vapor resistant items.



## PRODUCTS → Silicone rubber compounds type PENTASIL

### Silicone rubber compounds type PENTASIL

#### Type XV - electro conductive Pentasil 15500 - 15700

Color		black
Density	g/cm <sup>3</sup>	1,10-1,18
Hardness (Shore A)		50-70
Nominal tensile strength	Mpa	6,0-9,0
Elongation at break	%	200-400
Tear strength	N/mm	12-14
Rebound elasticity	%	40-60
Compression set	%	30-25
Rebound elasticity		23-32
Compression set	0m*cm	4-10

**Application:** electric conductor for ignition cables, conducting molded and extrusion-type products.

#### Type XVI – oil- petrol-resistant fluorosilicones Pentasil FS 400 - 800

Color		on request
Density	g/cm <sup>3</sup>	1,40-1,56
Hardness (Shore A)		40-80
Nominal tensile strength	Mpa	8,3-9,0
Elongation at break	%	300-450
Tear strength	N/mm	15-22
Compression set	%	8,0-12
Tosol A 65M (low-freezing coolant) (72h/105°C)	%	2,9
Oil M10 DM (72h/125°C)	%	1,8
TSP 10 (hard oiling agent) (24h/150°C)	%	7,1

Operation temperature range -60 - +250°C.

**Application:** oil- petrol-resistant industrial rubber products.

**PRODUCTS** → **Materials for electronic and electrical engineering**

**Electrical impregnating compounds (without solvent) type KP**

**Electrical insulating impregnating compound KP-307**

**Dielectric paste KPD**

**Protection materials for electronic**

## **PRODUCTS** → **Materials for electronic and electrical engineering:**

### **Electrical impregnating compounds (without solvent) type KP**

Electrical impregnating compounds without solvent type KP appear to be solutions of unsaturated epoxy ethers in oligoester acrylates, polymerized in the presence of peroxide compounds without evolution of volatile products and are designed for impregnation of winding of electrical machines and equipment with electrical insulation in heat-resistance class B and F.

Compounds type KP are characterized by combination of high cementing capacity (including working temperatures) and moisture resistance with high-speed drying and long life span with induced initiator.

Compounds KP-303A, KP-50P, KP-303B in the first place are meant to be used for impregnation of products from dropping (jet) devices with current and radiant-heat drying. It is possible to use compounds for impregnation of electrical equipment by dipping method or vacuum-injection infiltration. These marks can be delivered as two-component compositions and at the buyer's request can be packed with different hardening agents.

For dropping-jet infiltration it is recommended to use more active paste of benzoyl peroxide (amount of paste - 2-3% by wt; curing temperature - +125 - +130°C, curing time - 10-15 min.) For dipping method or vacuum-injection infiltration the use of dicumyl peroxide, which promotes longer life of working solution, is preferable.

Compound KP-303B is used for impregnation of winding by dipping method or vacuum-injection infiltration. It is delivered as one-component composition with inserted curing agent - dicumyl peroxide.

## PRODUCTS → Materials for electronic and electrical engineering:

### Electrical impregnating compounds (without solvent) type KP

Characteristical features of compounds type KP:

Parameter	KP-303A	KP-50P	KP-303V	KP-303B
Relative viscosity at temperature (20±0,5)°C, s	170-250 (VZ-246, nozzle 4 mm)	110-160 (VZ-246, nozzle 4 mm)	50-100 (VZ-246, nozzle 4 mm)	110-160 (VZ-246, nozzle 4 mm)
Duration of drying in thick layer, min, not above	15	10	15	30
Duration of drying in thin layer to level 3, min, not more	10	10	10	30
Cementing capacity, N, not less:				
- at 25°C	300	300	300	300
- at 155°C	300	300	300	300
Electrical volume resistivity, Ohm*m, not less:				
- at initial state	1*10 <sup>13</sup>	1*10 <sup>13</sup>	1*10 <sup>13</sup>	1*10 <sup>13</sup>
- after moister	1*10 <sup>12</sup>	1*10 <sup>12</sup>	1*10 <sup>12</sup>	1*10 <sup>12</sup>
Dielectrical strength, MV/m, not less:				
- at initial state	25	25	25	25
- after moister	20	20	20	20
Storage period with inserted curing agent (benzoyl peroxide paste), 24h, not less	30	30	30	-
Density, kg/m <sup>3</sup>	1110	1110	1110	1110

## PRODUCTS → Materials for electronic and electrical engineering:

### Electrical insulating impregnating compound KP-307

It is designed for impregnating of winding in electrical machines (heat-resistance class F and H) by hot dip coating or vacuum-injection impregnating. It is a mixture of polymerized polyesters and polyamide imides that does not contain dissolvent.

Imported primary products and effective Russian additives make it possible to create a product which successfully combine high stability of properties, storage stability, viscosity, cementing capacity (the mixture does not leak away from the winding till curing and does not damage it later) and fast curing at low temperatures.

KP-307 keeps high values of cementing capacity at increasing temperatures (292 N at +20°C and 247 N at +180°C).

The product conforms to technical specifications - TOR 2257-100-40245042-2004.

Parameter	Standard
Appearance	Homogeneous opalescent liquid from yellow to brown color, free from extraneous impurity
Relative viscosity, s	120
Duration of drying in thick layer at (135±5)°C, h, not more	1
Duration of drying in thin layer to level 3 at (135±5)°C, h, not more	1
Cementing capacity, N, not less. R; M(15-35)°C; 45-75%	250
Electrical volume resistivity, Ohm*m, not less:	
a) R; M(15-35)°C; 45-75%	10 <sup>13</sup>
b) 24h; (23±2)°C; (93±2)%	10 <sup>12</sup>
Dielectric strength, kV/mm, not less:	
a) R; M(15-35)°C; 45-75%	25
b) 24h; (23±2)°C; (93±2)%	20

Recommended curing conditions: temperature - +180°, duration - from 2 to 4 hours depending on the overall dimensions of the item.

## **PRODUCTS** → **Materials for electronic and electrical engineering:**

### **Dielectric paste KPD**

Is used for protection from external actions of transition surfaces in base radioelectronic instruments, as damping material in different devices for protection of insulation surfaces of power transmission lines and high-voltage substations, that work under supersevere conditions, in electric engineering, etc.

It is a silicone, condensed by inorganic thickener.

This product is thixotropic, works in the temperature interval -40 - +200°C.

There is a statement of subdivision of OJSC "Mosenergo" with recommendations to use as a protecting isolation from pollution and moistening (protection of electrical isolators in specially contaminated areas).

## PRODUCTS → Materials for electronic and electrical engineering:

### Protection materials for electronic

**Penta<sup>®</sup>-MVG.** For hermetization and protection of crystals in transistored assemblies, modules and other semiconductor devices; for casting of internal chamber of power semiconducting modules; for protecting of pressure sensitive elements, heat sensors. Has high vibration resistance, water-repellent property, resistance to ozone action, resistance to oxidizing materials, UV resistance, has dielectric properties and absent of toxic properties. Has high thermal stability and cold-resistance (from -50°C to +200°C). Chemically inert and does not cause corrosion.

**Pentakos-1.** For hermetization of items of electronic technology; for protection of p-n junction in semiconducting crystals - possesses protective ability from ionic impurity and other contamination. When curing Pentakos-1 creates thin firm film, which gives anti adhesiv features to the surface. This film has a high adhesion to base materials. Has high vibration resistance, water-repellent property, resistance to ozone action, resistance to oxidizing materials, UV resistance, has dielectric properties and absent of toxic properties. Has high thermal stability and cold-resistance (from -50°C to +200°C). Chemically inert and does not cause corrosion.

## PRODUCTS → Silicone defoaming agents type PENTA®

### Silicone defoaming agents type PENTA®

Silicone defoaming agents produced by Penta company are superior to the organic analogs in defoaming ability, act faster, last longer.

They are: notable for economical low dose requirement (typical use levels range from 0,000001 to 1 wt %) - they exhibit low surface tension and rapidly spread upon foaming substance; chemically inert - act independently from the foaming agents; effective over a wide temperature range - from -40°C to +250°C; non-toxic; nonvolatile; can work in different media; fire and explosion-proof.

They do not corrode materials and are stable in storage. They are not industrial allergens, odorless, does not have cumulative effect, environmentally friendly - in nature over time segregate into sand, water and carbon dioxide. There are sanitation-and-epidemiological statements on all manufactured products.

The most popular products are:

**Defoaming agent Penta®-465** - universal defoamer. It is used in the manufacturing of household chemistry, liquid detergents and cleaning products, in drilling mud fluid and grouting mortar - for oil and gas extraction industries as the component for coolants, etc.

**Defoaming agent Penta®-468** - is used for the processes of heating, filling and transportation of bitumen.

**Defoaming agent Penta®-469** - is used for the sewage disposal works: on local units for effluent treatment and on municipal sewage treatment plants.

**Defoaming agent Penta®-474** - is used for pulp and paper production technology - for washing of cellulose from sulphate lye and at the stage of formation of pulp web.

**Defoaming agent Penta®-475** - defoaming-deaeration agent for air removal in the process of cooking of cellulose and paper in recycled paper manufacturing, during application of coating slip on fibrous sheet.

## PRODUCTS → Foam stabilizers type PENTA®-480

### Foam stabilizers type PENTA®-480

**Used for stabilization of foam in the production of PPU and sealing foams.**

In product line PENTA®-480 following products are available:

**Penta®-481, Penta®-484** - foam stabilizers for production of rigid polyurethane foam (heat-insulation).

**Penta®-483** - foam stabilizer for production of sealing foams and rigid polyurethane foam (heat-insulation, furniture trade, footwear industry, etc.

**Penta®-486** - for production of rigid polyurethane foam and isocyanurate foam plastics.

Properties	Penta®-481	Penta®-483	Penta®-484	Penta®-486
Kinematical viscosity at 25°C, mm <sup>2</sup> /s	500-900	700-1500	500-900	300-700
pH value of the aqueous solution	6,0-7,5	6,0-7,5	6,0-8,0	6,0-8,0

All represented foam stabilizers are non-toxic, explosion proof, economical, safe and easy to use.

Completely soluble in water, except Penta®-481 and Penta®-484 that form a homogeneous mixture with water.

There are sanitation-and-epidemiological statements on all manufactured products.

## **PRODUCTS** → **Sheeting material Karbosil-P**

### **Siloxane-containing material Karbosil-P**

Sheeting material Karbosil-P is a "sandwich" from polysiloxanecarbonate block copolymer on the polyethylene terephthalate underlay which can be removed or can be used in combination with block copolymer.

Karbosil-P is transparent gas- and vapor-permeable film-membrane used in gas-membrane technology, in pervaporation of liquid aqueous-alcoholic and other mixtures as intermediate optical layer in inorganic glass and various coatings.

Karbosil-P is also used in medicine as a material for treatment of wounds and burns. Karbosil-P does not stick to the wound, prevent form penetration of infectious bacteria, non-allergenic.

Karbosil-P, because of its transparency, enables visual observation of reparation. Exhibits high vapor permeability at the level of healthy skin.

Adherent variant of material is used for covering of operation field during extended cardiac and lungs surgery.

Karbosil-P can be treated by radiation and gas sterilization.

## **PRODUCTS** → **FISHant-S - solution for the cholesterol problem**

### **FISHant-S - solution for the cholesterol problem**

- Normalizes blood cholesterol levels
- Activates reticuloendothelial system of the liver
- Reconstitutes metabolic functions of the liver
- Prevents diseases progression connected with the deposition of cholesterol
- Normalizes the micro flora of the intestinal tract
- Unique formula from natural ingredients
- Physiological mechanism of action
- Harmless at long-term administration

Cholesterol is a normal (natural) metabolic product, but its excessive content in the body provides a basis for many diseases, first of all, artery atherosclerosis. In early stages concretion of cholesterol on the interface of the vessels is observed. Later the atheromatous plaques is developed, that consist of cholesterol and calcium salts. At that time the interface of the arteries becomes rough, lumina of the vessel is constricted and on the atherosclerosis plaque blood clots are sedimented. As a result the patency of the arterium is going down up to full blockade, that causes the oxygen deprivation of the tissues and their necrosis. That is how myocardial infarction, cerebral stroke, gangrene, etc. arise.

Concretion of the cholesterol on the interface of arteria diminishes its elasticity. This becomes one of the causes of the high blood pressure.

Under the excess of blood cholesterol the functions of many organs are suffering, including liver, gallbladder, pancreatic gland. Let us see how it happens.

Cholesterol is incoming to the human body from two sources - with food and because of the internal synthesis, and the major portion of cholesterol is produced by liver for synthesis of bile acids (gall). In the narrow intestine gall together with the ferments of the pancreatic gland is participating in the process of digestion (splits fats), moving along with food contents through intestinal tract to the colon. Part of the gall from the narrow intestine is soaked and goes back to the liver (hepatoenteric recirculation of the gall). Healthy body is using a natural mechanism of cholesterol excess removal as a part of gall together with fecal masses during each cycle of the hepatoenteric recirculation.

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## **PRODUCTS → FISHant-S - solution for the cholesterol problem**

### **FISHant-S - solution for the cholesterol problem**

On its way from liver cholesterol is coming into the gallbladder, which is an unusual repository of gall. The function of the gallbladder is that when needed (after the food intake) it contracts and releases in the intestinal tract the necessary for the digestion and fat splitting amount of gall.

If the body has an excess of the cholesterol it starts to accumulate first of all in liver (bacony liver, fatty hepatitis), in the gallbladder wall (cholesterosis), in pancreatic gland (fatty degeneration, chronic pancreatitis), in high concentration is present in gall, that makes it very viscous. The gallbladder can not fully evacuate the heavy gall. And gall starts to crystallize and hepatoliths appear. Ischolia (gall deficiency) and depression of pancreatic gland function disturb the process of digestion and as a result pathogenic bacterium start to multiply hardly in the intestinal tract and cause dysbiosis. The deposition of the cholesterol in blood is becoming too high. The treatment with different pharmacological substances (always chemically active and aggressive towards liver) is leading to many complications in liver function and some times are quite dangerous at long-term intake. But it is not possible to clean out the whole deposited cholesterol from the tissues and recover its normal circulation in the body.

The modern approach to the treatment of many diseases is the understanding that any pathology shows metabolic problems of the whole body. All metabolic diseases are connected with each other, that is why during the treatment of atherosclerosis together with reducing of the blood cholesterol levels it is necessary to recover the functions of the other organs (liver, intestinal tract, pancreatic gland) and recover the natural physiological processes in the body.

The best solution is to recover the natural cholesterol recycling in the body. For this purpose 15 years ago professors of the Russian Medical University under the supervision of surgeon-in-chief of Russia, academician V.S. Saveljev was created the unique formula of FISHant-S.

#### **What is FISHant-S and how it acts?**

The action of the medication is based on the selective sorption of the bile acids. FISHant-S is a paste of the biologically inactive for the human body components in the form of complex capsulated micro emulsion. Inside the microcapsule, covered by the pectin and agar-agar sea algae coat, the white oil (mineral oil of high purification) is located.

## PRODUCTS → FISHant-S - solution for the cholesterol problem

### FISHant-S - solution for the cholesterol problem

In the narrow intestine FISHant-S is mixed with the intestinal content and covers the mucous tunic with a thin layer, not preventing the absorption of the food components. The gall is actively absorbed by white oil, kept inside the capsule of the micro emulsion in liquid state and moved to the colon. As a result cholesterol from the gall and cholesterol from the food are not getting into the blood and are evacuated from the body with fecal masses. Small deficiency of the gall in the body is compensated by the production of new portion of gall. For this purpose liver is using an excess of the cholesterol from blood and other tissues, including liver, gallbladder and walls of the vessels. Because of that liver is getting rid of adiposity, gallbladder is recovering its contraction ability, arteries become smooth and elastic. Gall obtains its normal characteristics, is produced in necessary amounts, takes part in the digestion, daily evacuates from the intestinal tract and is produced again in the liver. Insensibly the natural mechanism, controlling the cholesterol blood levels in the body, is recovered.

Simultaneously the digestive enzymes are activated and digestive processes are completely become normal.

And this is not all. Pectin and agar-agar on their way through the narrow intestine are suppress the growth of the pathological microorganisms. In the colon gall together with pectin prevent the multiplication of the pathogenic bacteria and serve as a good nutrient medium for the useful and essential microorganisms. Micro flora of the intestinal tract is becoming normal. Beside this micro emulsion actively absorbs toxins of the pathogenic microbes, which help liver to recover the normal metabolism and take care about the production of the gall and removal of the cholesterol and its dangerous fractions from the blood.

Naturally it is hard to expect the quick recovery in the most complicated cases, when there are already concrements in the gallbladder and the wall of the vessel is a calciferous formation which hardness could be compared with stone. One should remember that atherosclerotic changes in the arterial wall are on different stages - in one vascular area they are strongly pronounced and in the other are weak. That is why in the majority of the patients, regularly receiving FISHant-S from 6 months to 1 year, amelioration is observed (weakening of painful ambulation, easing of heart strokes, lowering of the arterial blood pressure, improvement of digestion, etc.).

Many people suffering from cholecystitis and its complications, as a rule, required an operative treatment. After cystectomy the usage of FISHant-S helps to recover the functions of the digestion process and get rid of the diet. There are even more patients that do not have any concretes in the gallbladder, but suffer from pain in the right hypochondrium, which is connected to the disorder in the motor-evacuator function of the gallbladder (dyskinesia of the gall bladder, biliary engorgement). In these cases the usage of FISHant-S is also very effective.

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## **PRODUCTS** → **FISHant-S - solution for the cholesterol problem**

### **FISHant-S - solution for the cholesterol problem**

Some patients with cerebral atherosclerosis note dizziness, entotic sound, hearing difficulty - so called vascular cochleovestibular disorders. They are also connected to the lipidosis and can be significantly decreased by means of FISHant-S.

FISHant-S is containing absolutely neutral for the human body components, is not absorbed by the intestine, fully comes out of the body and thus does not have any harmful effect on the liver which, as a rule, can be observed during long-term treatment with pharmacological anti-sclerotic drugs and cholesterol decreasing drugs.

#### **FISHant-S:**

- Effectively restores natural cholesterol balance system in the body
- Decreases the cholesterol blood levels
- Contributes to the excretion of cholesterol from arteries, gallbladder, liver, pancreatic gland and other organs
- Prevents and stabilizes the atherogenesis, removes cholesterol from soft atherosclerosis plaques
- Restores the elasticity of the arteries and normalize arterial blood pressure
- Weakens dizziness and entotic sound, improves hearing during cerebral atherosclerosis and hypertensive disease
- Normalizes the function of the liver and provides normal income of the gall in the intestinal tract
- Restores the functions of the liver during diabetes
- Decreases the viscosity of the gall and its ability to calculi formation
- After the cystectomy restores the digestion processes by normalizing the activity of the digestive enzymes
- Prevents pancreatitis
- Normalizes metabolism after hormonal treatment
- Reduces the body weight

## **PRODUCTS** → **FISHant-S - solution for the cholesterol problem**

### **FISHant-S - solution for the cholesterol problem**

#### **Indication for application of FISHant-S:**

- Elevated cholesterol and triglycerides blood levels, atherosclerosis
- Diabetic Angiopathy
- Vascular disorders (hearing problems, dizziness, entotic sound)
- Cholelithiasis
- Acalculous cholesterol imbibition of gallbladder
- Polypus of gallbladder
- Dyskinesia of gallbladder and biliary tracts
- Fatty Hepatosis (adipose degeneration of the liver)
- Chronic Pancreatitis
- Syndrome of the maldigestion after different operative treatments of gastrointestinal tract organs (peritonitis, pancreatonecrosis, bowel resection, etc.), chemotherapy, radiotherapy, cystectomy and extracorporal lithotripsy
- Dysbiosis (dysbacteriosis), irritated intestine syndrome
- Metabolic Disorder during the treatment with hormones
- Overweight

**The main advantages of FISHant-S are:** recovering of the natural cholesterol metabolism mechanisms; neutrality of the components; high cholesterol reducing effect and high clinical performance; possibility of safe long-term treatment.

FISHant-S does not have habituation effect and does not cause any complications.

Formulation has passed clinical drug trial and is registered in Ministry of Public Health. Its high efficiency and absolute safety were indicated. Side effects and complications were not detected. Short-term laxative effect which stops independently could be observed.

RU MZRF 006033.R.643.07.2003

## PRODUCTS → Household chemistry

### Household chemistry

**Silapen** - mat for baking. It's used as a bottom layer for cakes, pastry, pizza and other bakery; suitable for ovens of electric and gas-stoves and for microwave ovens at temperatures up to +260°C. Mat can be used on both sides and does not need any special treatment neither before nor after baking. Bakery do not burn, nicely baked trough without any fat. Period of service - up to 2000 bakes. Delivered in rolls with width 98 cm and length up to 50 m.

**Pentasil** - silicone lubricant for home use. Is used for treatment of structural screwed connections, screw drive mechanisms (mandrels, valves, taps, locks); screwed joints of the pipes; O-rings for valve gaskets; corrosion-resistant coating; for protection of electrical connections from moist and corrosion, etc. Especially effective at elevated temperatures (+250°C) and increased humidity, low-temperature resistant (up to -50°C), compatible with rubber and other sealing materials.

**Pentalux** - silicone protecting agent for shoes, leather goods and goods from leather substitute. Protects from harmful moisture and salt attacks. Preserves the objects from cracks and ageing processes; keeps their elasticity, gives shine and defend from dirt. Just few drops of Pentalux can protect the shoes for 2-3 days. By means of Pentalux you can restore old dried up shoe sponges - apply few drops of the agent upon the sponge.

**Car shampoo.** Shampoo for washing of cars, motorcycles, bicycles, etc. Removes mechanical and organic impurities. Possesses excellent foaminess. Does not contain salts, oxidizers and alkalis. Non-toxic, environmentally safe.

## **PRODUCTS** → **Concentrates of cleaning agents type PENTA<sup>®</sup>-440**

### **Concentrates of cleaning agents type PENTA<sup>®</sup>-440**

**Cleaning agent Penta<sup>®</sup>-441** - universal concentrate. Composed on the base of biodegradable surface-active material with perfume and colorant incorporation (lemon, apple, currant, wild rose), with preserving agents and other components. Has an enhanced cleaning effect.

**Cleaning agent Penta<sup>®</sup>-443 (Type A)**. For cleaning of paint and varnish and surfaces. Composed on the base of biodegradable surface-active material with addition of corrosion inhibitor, perfume additives and colorants, preserving agents and other components.

**Cleaning agent Penta<sup>®</sup>-443 (Type B)**. For cleaning of glasses and plastic surfaces from different types of impurities. Has an emulsifying and dispersing force, effectively removes dirt, effectively works in hard water, and does not cause corrosion.

**Cleaning agent Penta<sup>®</sup>-443 (Type V)**. For cleaning of different surfaces from oil and greasy impurities. Effective for removal of greasy, petroleum and fatty impurities and lubricants from steel, iron, aluminium, concrete and rocky surfaces, stainless steel, copper, plastic, rubber, painted surfaces, etc. Has an emulsifying and dispersing force, effectively removes dirt, effectively works in hard water, does not cause corrosion.

**Cleaning agent Penta<sup>®</sup>-444**. For washing of dishware and machineries heavily stained with fat. Has an emulsifying and dispersing force, effectively removes dirt, decomposes proteins and fatty contaminations, free from perfume additives and colorants.

**Cleaning agent Penta<sup>®</sup>-445 (Type A)** - concentrate for preparation of cleaning agents for food industry.

**Cleaning agent Penta<sup>®</sup>-445 (Type B)** - cleaning agent for toilet bowls and urinals.

**Cleaning agent Penta<sup>®</sup>-445 (Type V)** - cleaning of wash-bowls, bath-tubs and bidet.

**Cleaning agent Penta<sup>®</sup>-445 (Type G)** - cleaning agent for glazed tile and chrome-plated surfaces.