KORONA GROUP

SILICONES FOR PAINTS AND COATINGS

Creating a platform of reliability

www.korona.group

Korona Group Corporation is an expert in silicone organic products, epoxy materials and other protective coatings. Company's activities are production and sales of chemicals for industrial and civil construction, chemical industry.

Established in 1999 we started protective coatings and hydrophobic agents manufacturing. By 2004 "Korona Chim" has become a leader at CIS market of protective coatings and first export supplies of own products at European and Asian markets were made.

Trading companies and representative offices opened during years in CIS, Turkey, USA.
In 2012 production company "Unisil Hungary Kft." and the trade mark "UNISIL" were established in Hungary.

In 2015 the group of companies was reorganized into Korona Group Corporation.

Korona Group Corporation in numbers:

> 12 000 tons of annual production
> 25 000 m2 of production and warehouses area
> 300 products
> 80 M Euro turnover
5 laboratories and a team of highly qualified specialists.

> 500 regular customers
> 20 companies in Europe, Asia, the USA, the CIS countries
> 450 employees
Reach registration
Production is certified and operates in accordance with ISO 9001, ISO 14001, OHSAS 18001.

The corporation product list can be divided into 3 main groups: silicone organic materials, epoxy materials, alkyd, and water-dispersion coatings. Our products are made with the best formulations, matching the same quality level as of competitors' production and even exceeding it. The chemicals we supply have a wide range of applications.

For the construction sector and manufacturers of building materials, we offer a whole range of hydrophobic liquids and emulsions for surface and volumetric treatment, epoxy materials, varnishes, and paints. Our release agents are indispensable in metallurgy, mechanical engineering and machine tool industry, the manufacturing of tires and rubber products. For instrumentations, electronics, chemical and petroleum industries we supply silicone oil and antifoam agents.

Being environmentally friendly and safety, our products are the result of the interaction between nature and achievements in the field of chemistry.

Korona Group and Unisil systematic approach to management of our business and quality, ensuring the confidence that your needs as a consumer are clearly understood, agreed and satisfied, and the products consistently meet the requirements.

Our advantages are attractive prices and high quality of products, guaranteed by quality certificates. Our intelligent logistics policy enables delivery by various transports, in suitable packaging, and most importantly, on time. All this will help to strengthen your position in the market and lead to business success.

The basis for successful cooperation with our partners are stable, long-term relationship as a result of mutually beneficial cooperation.

Every supply is accompanied by a full package of obligatorily technical documentation and approvals.

The company's technical department works closely with customers to meet their needs and solve issues. We are ready to provide services the competent technical advices on the application and features of all our products, and recommend how to find the most appropriate, as well as to inform about the products, upcoming to enter the market.

Upon customer requirements, we can arrange a visit of technologist to your facilities, and provide test samples of products and carry out the delivery of the goods to any destination of the world.

Today we are working to improve and explicate existing products, as well as develop new products to meet the needs of each individual production.

We managed to create the image of the reliable partner during our work, to gain high trust of consumers of products Korona Group offers.

ABOUT HUNGARIAN SILICONES

Hungarian Silicones Kft is part of the international production corporation Korona Group.

Hungarian Silicones Kft is established in 2013 in Hungary, Szolnok, to be closer to the EU customers and provide excellent services to the partners.

As a domestic EU company with exclusive rights to the Korona Group's chemical production company Unisil Hungary Kft, we are pleased to offer our more than 25 years of glabal experience in hydrophobization and protection solutions for building materials and structures.

UNISIL PRODUCTS IMPROVE IMPORTANT PROPERTIES OF COATINGS

Water vapor permeability - the ability of coating to retain passing of water vapor, to keep the house «breathing».
This may be achieved by the micro porosity of the polymer film, which depends on the type of binder, the solvent used and the mechanism of the coating film formation.
UNISIL products promote high vapor permeability.

Water penetration level - the ability of coating to demonstrate the properties of a sponge, namely to absorb water.
As a consequence of high water permeability painted surfaces will be overly moisturized during rains, snow or fog. This will subsequently lead to active growth of mold, fungi, accumulation of dirt and accelerated destruction.
UNISIL products reduce water permeability in several times.

Weather resistance - the ability of coating to resist the negative effects of UV rays, sudden changes in temperatures, humidity levels and other harmful atmospheric effects.
In result of poor weather resistant all kind of coatings - exterior and interior can be damaged by different weather conditions.
UNISIL products significantly improve weather resistance.

Resistance to mechanical stress factors - chipping, scratching and other impacts.
Mainly determined by both the adhesive properties of coating and the strength of the coating itself.
UNISIL products do not impair the adhesion and strength of the coating.

The materials of industrial and construction chemistry are well known to professional and private consumers and fulfill a growing demand all over the world.

Silicone organic products have especially valuable features. Its high protective and decorative properties are due to low water absorption, high water vapor permeability, stability in wide temperature ranges and resistance to negative natural influences. Silicone organic materials best provide heat-, frost-, weather-resistant, resistance to corrosive environments.

Thanks to silicone additives - coatings obtain excellent weather resistance and mechanical properties – protected from scratches and cracking.

Additives improve:

- **Flowability** - the ability to form a smooth flat surface after application. No matter how we apply the paint, it is still applied in grooves or blobs. After application, a good paint must flow and the resulting film must stretch.
- **Spreading capacity** is the opacity, the ability to hide coloured patches on the substrate and to form a uniform surface.
- **Strength** - ability to resist cracking and abrasion.

The main property of silicone binders besides binding paint components is increasing vapor permeability without affecting other important properties of coatings. Application of a silicone binders allow to increase the quality class of coatings.

Silicone binders may impart slight hydrophobic effect to coatings.

Silicone binders may impart slight hydrophobic effect to coatings.

Silicone additives are used to improve binder properties. The concentration of a single additive in paints and coatings can vary from 0.1% to 2%.

Silicone additives used as a leveling agent in coatings to avoid uneven coloration of surfaces.

Silicone additives greatly improve hydrophobic properties of coatings and also gives a slight increase of a vapor permeability level.

Silicone pH adjuster is odorless and VOC-free, which allows the development of odorless and low VOC coatings now, which is one of the major task for manufacturers of coatings. Due to their silicone nature, these products also assist in the coating film formation

ETHYLSILICATE-28

FEATURES

Ethyl silicate-28 is a monomeric tetraethoxysilane with a content of a mass fraction of silicon dioxide (SiO2) in the range of 28.8 - 29.5%.
It is well soluble in toluene, benzene, ethyl alcohol and other solvents.
Ethylsilicate-28 is obtained from the reaction of silicon tetrachloride and ethyl alcohol.
Synonyms: Ethylsilicate 28, TEOS, ethyl silicate, Tetraethyl orthosilicate, tetraethyl silicate, Orthosilicic acid tetraethyl ester, Tetraethoxysilane, silicic acid (H4SIO4), tetraethyl ester, tetraethyl silicate.

APPLICATIONS

Foundry

- For precision casting
- As a component of parting paints
- As a binder for the production of rods exposed to high temperatures

Construction

- For the water proof building materials manufacturing
- Protective and preservation treatment of painted surfaces
- Modifying additive for plaster, putty and whitewash solutions
- Modifier of epoxy and bituminous materials
- For the acid-resistant cement production

Paints and coatings

- As additives used in forming of fast-drying, thermo- and waterproof film with resistant gloss
- As a binder component
- As a modifying additive to lacquers and varnishes

Chemichals

- Crooss linking agent
- As additives used in forming of fast-drying, thermo- and waterproof film with resistant gloss
- As a binder component
- As a modifying additive to lacquers and varnishes

Glass & ceramic

- Ingredient for glass, mirrors, crystal cleaning agents
- Imparts the glass hydrophobic effects, mechanical and chemical resistance, light scattering
- As a binding agent for the manufacture of ceramic materials, that are resistant to the highly corrosive environments and have the mechanical strength, heat resistance and high dielectric properties

PHYSICAL AND MECHANICAL PROPERTIES

NAME OF PARAMETER AND MEASURING UNIT	STANDARD
Appearance	Colorless clear liquid with a specific odor
Chemical formula	$Si(OC_2H_5)_4$
Mass fraction of silicon dioxide, %	28,8 – 29,5
Mass fraction of tetraethoxysilane, %	99,9
Mass fraction of ethyl alcohol, %, max	0,1
Density, at +25°C, g/см³	0,930 – 0,934
Viscosity, at +25°C, mPa*s	0,70 – 0,72
Flash point (closed cup), °C	49,1
Refractive index at +20°C	1,383

SAFETY INFORMATION Ethyl silicate-28 is a low toxic, explosive, fire hazardous product. When carrying out work observe fire safety techniques.
SHELF LIFE 12 MONTHS

ETHYLSILICATE-32

FEATURES

Ethylsilicate-32 is a mixture of tetraethoxysilane and polyethoxysiloxanes.

APPLICATIONS

Foundry

- For precision casting
- As a component of release paints
- As a binder for the production of rods exposed to high temperatures

Construction

- For the water proof building materials manufacturing
- Protective and preservation treatment of painted surfaces
- Modifying additive for plaster, putty and whitewash solutions
- Modifier of epoxy and bituminous materials
- For the acid-resistant cement production

Paints and coatings

- As additives used in forming of fast-drying, thermo- and waterproof film with resistant gloss
- As a binder component
- As a modifying additive to lacquers and varnishes
- A component of nonstick (antiburning) paints

Chemichals

- As additives used in forming of fast-drying, thermo- and waterproof film with resistant gloss
- As a binder component
- As a modifying additive to lacquers and varnishes

Glass & ceramic

- Ingredient for glass, mirrors, crystal cleaning agents
- Imparts the glass hydrophobic effects, mechanical and chemical resistance, light scattering
- As a binding agent for the manufacture of ceramic materials, that are resistant to the highly corrosive environments and have the mechanical strength, heat resistance and high dielectric properties

PHYSICAL AND MECHANICAL PROPERTIES

NAME OF PARAMETER AND MEASURING UNIT	STANDARD
Optical density at a wavelength of 400 nm, max.	2.5
Optical density at a wavelength of 670 nm, max.	0.4
Mass content of hydrogen chloride, %, max.	0.1
Mass content of ethyl alcohol, %, max.	1.5
Mass content of tetra ethoxy silane, %	50.0
Mass content of silicon dioxide, %	31.0 - 34.0
Density at +20°C, g/cm³	0.955 - 0.99
Auto-ignition temperature, °C	240
Flash point in a closed cup, °C, min.	38.0

SAFETY INFORMATION Ethyl silicate 32 is a low toxic, explosive, fire hazardous product. When carrying out work observe fire safety techniques.

SHELF LIFE 12 MONTHS

ETHYLSILICATE-40

FEATURES

Ethylsilicate-40 is a mixture of tetraethoxysilane and polyethoxysiloxanes.

APPLICATIONS

Foundry

- For precision casting
- As a component of parting paints
- As a binder for the production of rods exposed to high temperatures

Construction

- For the water proof building materials manufacturing
- Protective and preservation treatment of painted surfaces
- Modifying additive for plaster, putty and whitewash solutions
- Modifier of epoxy and bituminous materials
- For the acid-resistant cement production

Paints and coatings

- As additives used in forming of fast-drying, thermo- and waterproof film with resistant gloss
- As a binder component
- As a modifying additive to lacquers and varnishes

Chemichals

- As additives used in forming of fast-drying, thermo- and waterproof film with resistant gloss
- As a binder component
- As a modifying additive to lacquers and varnishes

Glass & ceramic

- Ingredient for glass, mirrors, crystal cleaning agents
- Imparts the glass hydrophobic effects, mechanical and chemical resistance, light scattering
- As a binding agent for the manufacture of ceramic materials, that are resistant to the highly corrosive environments and have the mechanical strength, heat resistance and high dielectric properties

PHYSICAL AND MECHANICAL PROPERTIES

NAME OF PARAMETER AND MEASURING UNIT	STANDARD
Optical density at a wavelength of 400 nm, max.	1.4
Optical density at a wavelength of 670 nm, max.	0.1
Mass content of hydrogen chloride, %, max.	0.3
Mass content of ethyl alcohol, %, max.	1.5
Mass content of tetra ethoxy silane, %	10 - 15
Mass content of silicon dioxide, %	38 - 42
Density at +20°C, g/cm³	1.04 - 1.07
Duration of gelation, minutes	180 - 280
Freezing point temperature, °C, min	-60

SAFETY INFORMATION Ethyl silicate 40 is a low toxic, explosive, fire hazardous product. When carrying out work observe fire safety techniques.

SHELF LIFE 12 MONTHS

PDMS LIQUIDS 5-1000 CST

FEATURES

Polydimethylsiloxane liquids (PDMS) are blend of polymers with linear and branched structure. PDMS is known as silicone oils – the most effective substitute of mineral and synthetic oils in many industries.

TECHNICAL PROPERTIES

FLUID GRADE	FLASH POINT, °C	KINEMATIC VISCOSITY, CST
PDMS-5	min. 116	4,5-5,6
PDMS-10	min. 172	9,2-10,8
PDMS-20	min. 200	18-22
PDMS-40	min. 200	36-44
PDMS-50	min. 220	45-55
PDMS-100	min. 305	95-105
PDMS-200	min. 316	192-208
PDMS-300	min. 310	290-310
PDMS-400	min. 315	385-415
PDMS-500	min. 316	480-520
PDMS-1000	min. 310	950-1050

APPLICATIONS

PDMS 5-10

- Damping liquids
- Thermal liquids (both low- and high- temperature) for instrumentation

PDMS 20-40

- Damping, hydraulic, release liquids for instrumentation
- A grease base

PDMS 50-200

- Damping, hydraulic, release liquids
- Additives in polishing liquids and a variety of household chemical goods

PDMS 300-400

- A base of petrolatum paste
- Water-based emulsions of these fluids are used as release agents in production of general mechanical rubber goods, plastic goods, and rubbers
- Production of dielectric pastes and petroleum jellies
- For the treatment of glass tare
- As damping liquid

PDMS 500-1000

Damping liquid

PDMS 200-350

- Defoamer for petroleum oils and printing inks in printing industry as well
- Release agent in tire industry

PDMS 100

- As a base constituent of low-temperature greases, refrigerant, and low-temperature liquids for a variety of instrumentation

PHYSICAL AND CHEMICAL PROPERTIES

NAME OF PARAMETER AND UNIT OF MEASURE	STANDARD
Kinematic viscosity (depending upon grade of fluid) at +20°C, cSt	4,5 - 1050
Open flash point (depending upon grade of fluid), °C	116 - 316
Freezing temperature (depending upon grade of fluid), °C	- 100 - 60
Boiling point 0,13-0,5 kPa residual pressure, °C:	
PDMS 5-10	170 - 250
PDMS 10-40	<250
PDMS 50-1000	<300
Content of silicon (depending upon grade of fluid), %	35,5 - 38,5
Self-ignition temperature (depending upon grade of fluid),°C	330 - 400
Lower inflammation limits of vapor in air (depending upon grade of fluid), °C	128 - 214
Upper inflammation limits of vapor in air (depending upon grade of fluid), °C	256 - 297
Density at +20°C, g/cm^3	0,91 - 0,98
Density for liquids with viscosities > 200 cSt at minus 60°C, g/cm^3	1,03 - 1,04
Solubility in water, %, max.	0,2
Solubility in aromatic and chlorinated hydrocarbons,%	100
Solubility in spirit, acetone,%	full by PMS 5-10
Heat conductivity at 20°C, W /m*K	0,167

SAFETY INFORMATION

Polymethylsilicone fluids are inert, explosion-proof, produces no poisonous action to skin and conjunctiva.

GUARANTEED SHELF LIFE 60 MONTHS

SILICONE WATER-REPELLENT FLUIDS UNISIL SL 90/10, UNISIL SL 90/80, UNISIL SL 90/99

FEATURES

UNISIL SL 90/10 – The solution of octyltriethoxysilane diluted in an organic solvent with the catalyst, ready for use.

UNISIL SL 90/80 – Concentrated solution of octyltriethoxysilane diluted in an organic solvent with the catalyst.

UNISIL SL 90/99 – Concentrated octyltriethoxysilane free of solvent with the catalyst.

APPLICATIONS

Advantages

- Reduces the treated surfaces capillary water absorption
- Increases the resistance to frost
- Retains the materials thermal insulation properties
- Prevents the development of mold and moss
- Penetrates deeply into the pores and does not clog them
- The materials retain their natural properties – porosity and water vapor permeability, meaning they can “breathe”
- Possible to apply on damp surfaces
- Does not change the appearance of the treated material
- Prevents the efflorescence on brick masonry
- Enhances paint adhesion to the surface

CONSUMPTION 0,1-2,0 l/m2 - depends on the porosity of the material to be treated and the application method.

SAFETY INFORMATION The product is flammable; please follow fire safety instructions during work.
GUARANTEED SHELF LIFE 12 MONTHS

STORAGE Keep in cool, dry, well ventilated place away from areas with a risk of fire, from oxidizing agents, acids, alkalis, and other substances having acidic or alkaline reaction. Protect from direct sunlight and moisture.

SILICONE WATER-REPELLENT LIQUIDS UNISIL SL-11K AND UNISIL SL 11N

FEATURES

Water solution of sodium methylsiliconate UNISIL SL 11N or potassium methylsiliconate UNISIL SL 11K.

APPLICATIONS AND ADVANTAGES

Construction and buildig materials

- Surface and volumetric treatment
- For the treatment of brick, marble, travertine, concrete, asbestos cement, tile, concrete and gypsum products, and the other similar materials
- Increases the lifespan of the buildings and constructions
- Increases plasticity and final strength of concrete, plaster and screed
- Increases frost resistance, crack resistance and lightfastness
- Improves the overall insulating properties of the buildings
- Preserves the appearance the material, its permeability
- Protects against efflorescence occurrence
- Protects against the destructive action of mosses and lichens
- Maintains its original properties for at least 4-5 years and up to 15 years

Paints & coatings

- pH adjuster for water-borne paints and plasters
- Enhances the properties of the paint
- Improves water resistance and scratch resistance
- NO emission of harmful substances like amine or ammonia
- Low odour

Oil and gas extraction

- Modifier of the clay drilling agent
- Increases lubricity
- Reduces the water flow in the drilling fluid
- Reduces and stabilizes the viscosity of the drilling agent
- Increases drilling speed
- Increases the wells resource
- Reduces the water content in the crude oil

UNISIL SL 11N PHYSICAL AND MECHANICAL PROPERTIES

NAME OF PARAMETER AND UNIT OF MEASURE	STANDARD
Appearance and color	Liquid from colorless to light brown color. May be turbid.
Density at temperature (+20±0,5)°C, g/cm³	1,14-1,30
Mass fraction of solids, %	23-35
Alkalinity in terms of NaOH, %	13-17
Water-repellent ability	Passed the test

UNISIL SL 11K PHYSICAL AND MECHANICAL PROPERTIES

NAME OF PARAMETER AND UNIT OF MEASURE	STANDARD
Appearance and color	Transparent or slightly turbid liquid
Density at temperature (+20±0,5)°C, g/cm³	1,380-1,405
Mass fraction of solids, %	min 54,0
Alkalinity in terms of KOH, %	19,5 – 20,8
Water-repellent ability	Passed the test

Using UNISIL SL 11K is more economical as it is more concentrated compared to the UNISIL SL 11N. UNISIL SL 11K consumption is 50% less.

SAFETY INFORMATION

Water-repellent liquids are non-toxic, fireproof, but it has alkaline properties. Work in rubber gloves, glasses, spray upwind, use the respirator.

GUARANTEED SHELF LIFE 12 MONTHS

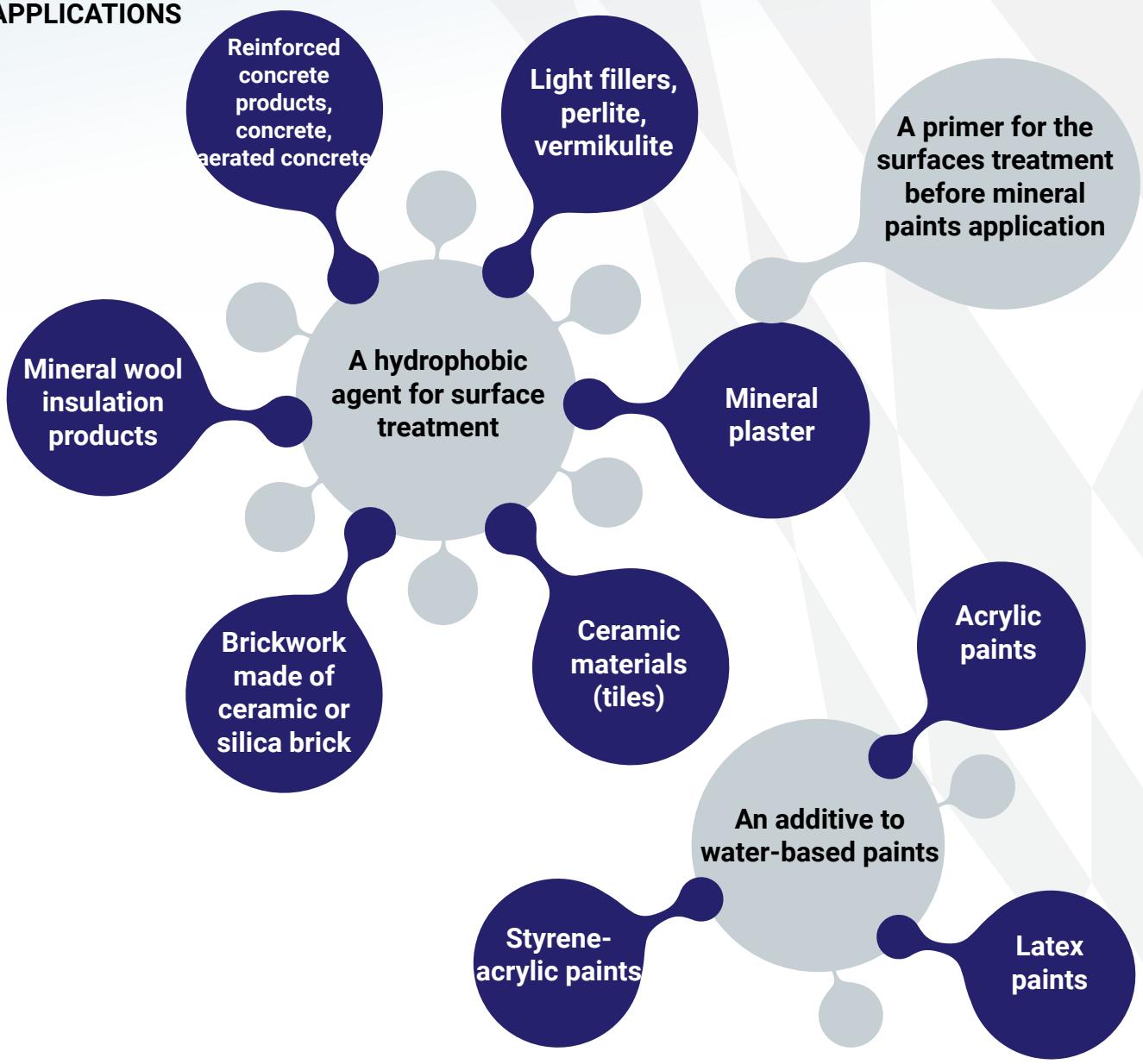
SILICONE EMULSION UNISIL SE-55

FEATURES

UNISIL SE-55 is a solvent-free aqueous emulsion of polydimethylsiloxane with a wide range of applications: from the waterproofing and priming of various mineral bases to the addition to paints and coatings. It is produced in 2 types: lower (SE-55L) and higher (SE-55H) viscosity levels

Hydrophobic silicone emulsion UNISIL SE-55 after application reacts chemically with the reaction groups of the treated material and forms a durable protective waterproof coating chemically bonded to the substrate.

APPLICATIONS



Advantages

- Water-repellent impregnation agent UNISIL SE-55 penetrates deeply into the pores of the processed material.
- No hazardous chemicals are released during application and during the entire service life of the protective coating.
- Possible to apply to a wet surface.
- Hydrophobic agent UNISIL SE-55 ensures a durable protective coating chemically bonded to the treated material.
- Retains gas permeability of materials after application and drying of the coating.
- UNISIL SE-55 silicone emulsion additive improves the spreadability of water-based paints, the appearance of the film, and adhesion to the material.
- Increases the weather resistance and durability of the protective coating.

PHYSICAL AND CHEMICAL PROPERTIES

NAME OF PARAMETER AND UNIT OF MEASURE	STANDARD for UNISIL SE-55L	STANDARD for UNISIL SE-55H
Appearance	White emulsion	
Mass content of solids, %, min.	55	
Funnel viscosity at temperature (+20±2,0)°C, s	10 - 50	70 min.
Stability on dilution, h min	24	
Reaction of medium (pH 25% of water solution)	6,0 – 7,0	

SAFETY INFORMATION

The information on safety you can find in safety data sheet, provided by our sales department upon request.

STORAGE

Store in original containers at temperature from +5°C to +30°C in a cool, dry, well-ventilated place, protect from moisture and direct sunlight, away from heaters.

GUARANTEED SHELF LIFE 6 MONTHS

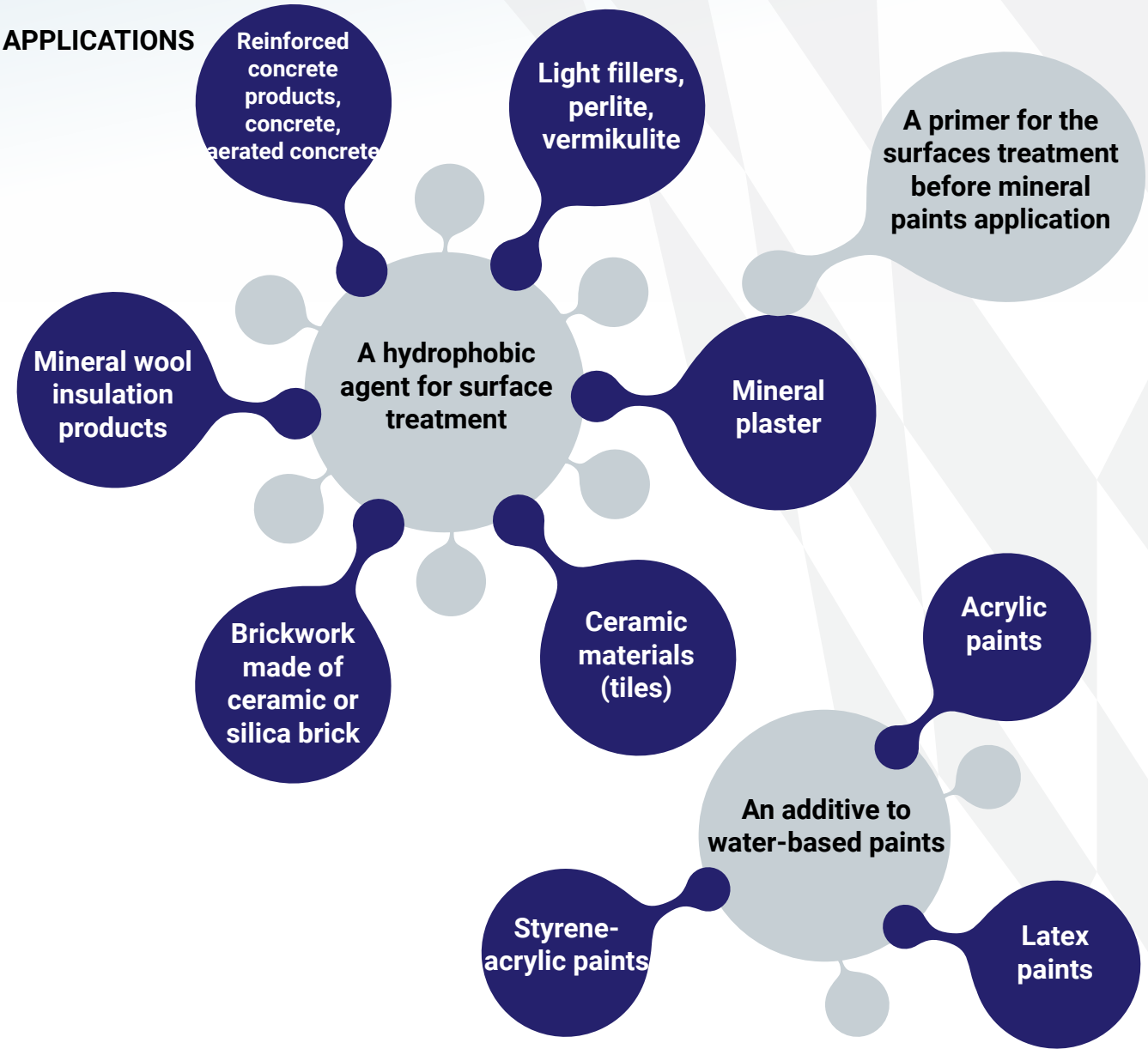
SILICONE EMULSION UNISIL SE 50-12

FEATURES

UNISIL SE 50-12 is a solvent-free aqueous emulsion of reactive polydimethylsiloxane. It has a wide range of applications: from the waterproofing and priming of various mineral bases to the addition to paints and coatings. It is produced in 2 types: lower (SE 50-12L) and higher (SE 50-12) viscosity levels.

Hydrophobic silicone emulsion UNISIL SE 50-12 after application reacts chemically with the reaction groups of the treated material and forms a durable protective waterproof coating chemically bonded to the substrate.

APPLICATIONS



Advantages

- Water-repellent impregnation agent UNISIL SE 50-12 penetrates deeply into the pores of the processed material.
- No hazardous chemicals are released during application and during the entire service life of the protective coating.
- Possible to apply to a wet surface.
- Hydrophobic agent UNISIL SE 50-12 ensures a durable protective coating chemically bonded to the treated material.
- Retains gas permeability of materials after application and drying of the coating.
- UNISIL SE 50-12 silicone emulsion additive improves the spreadability of water-based paints, the appearance of the film, and adhesion to the material.
- Increases the weather resistance and durability of the protective coating.

PHYSICAL AND CHEMICAL PROPERTIES

NAME OF PARAMETER AND UNIT OF MEASURE	STANDARD for UNISIL SE 50-12L	STANDARD for UNISIL SE 50-12
Appearance	White emulsion	
Mass fraction of non-volatile substances at (+105±2)°C, (180±5) minutes, (2.0±0.2) g, %, min.	48	
Funnel viscosity at temperature (+20±2,0)°C, s	10 - 30	30 - 150
Stability on dilution, h min	24	
Reaction of medium (pH 25% of aqueous solution)	6,0 – 7,0	
Mass content of silicon,%	18 - 22	

SAFETY INFORMATION

The information on safety you can find in safety data sheet, provided by our sales department upon request.

STORAGE

Store in original containers at temperature from +5°C to +30°C in a cool, dry, well-ventilated place, protect from moisture and direct sunlight, away from heaters.

GUARANTEED SHELF LIFE 6 MONTHS

SILICONE EMULSION UNISIL SE-50/53M

FEATURES

A water emulsion of silicone low molecular weight polymers with reactive end groups and functional groups of silicon atoms that does not contain solvents.

APPLICATIONS

Advantages of the hydrophobic properties

- After application, it reacts chemically with the reaction groups of the treated material and forms a durable protective water repellent coating chemically bonded to the treated surface
- The emulsion does not contain organic solvents and other environmentally harmful additives
- No hazardous chemicals are released during application
- Deep penetration into the pores of the treated material
- Application on a damp surface is possible
- Forms a durable protective coating chemically bonded to the treated material
- Retains the gas permeability of treated materials after application and drying of the coating

Advantages of the primer and paint additives properties

- When added to water based paint, the emulsion improves its spreadability, the appearance of the film and adhesion to the material
- Improves the paint properties
- Improves the technology of its application
- Improves the properties of the coating
- When used as an additive in paints, the emulsion SE-50/53M keeps the stability of the paint during storage
- Increases the weather resistance and durability of the protective coating

CONSUMPTION Using as a hydrophobic agent or a primer, the consumption rate depends on the porosity of the material to be treated and the application method, and can range from approximately 0,2 to 0,5 l/m² of the prepared working solution (dilute 1 liter of agent in 5-10 liters of water, depending on the absorbency and nature of the material to be treated).
Application as the additive to water based paints. The amount of emulsion to be added is determined by required properties of the end product, so no general advice can be given. To determine the required amount please provide tests for any particular case.
SAFETY INFORMATION The product is flammable; please follow fire safety instructions during the work.
GUARANTEED SHELF LIFE 12 MONTHS
STORAGE Store in tightly closed original container at temperature from +5°C to +30°C. Keep in dry, cool and well ventilated place. Prevent from direct sunlight and freezing. Store away from oxidizers, strong acids, alkalis and other chemicals having alkaline reaction.

SILICONE EMULSION UNISIL SE 10-01

FEATURES

Emulsion UNISIL SE 10-01 – water emulsion of polydimethylsiloxane liquid of various concentrations. Product for protective and anti-adhesion treatment of metals, glass, rubber, plastic. Before use, blend it with water 1:10.

APPLICATIONS

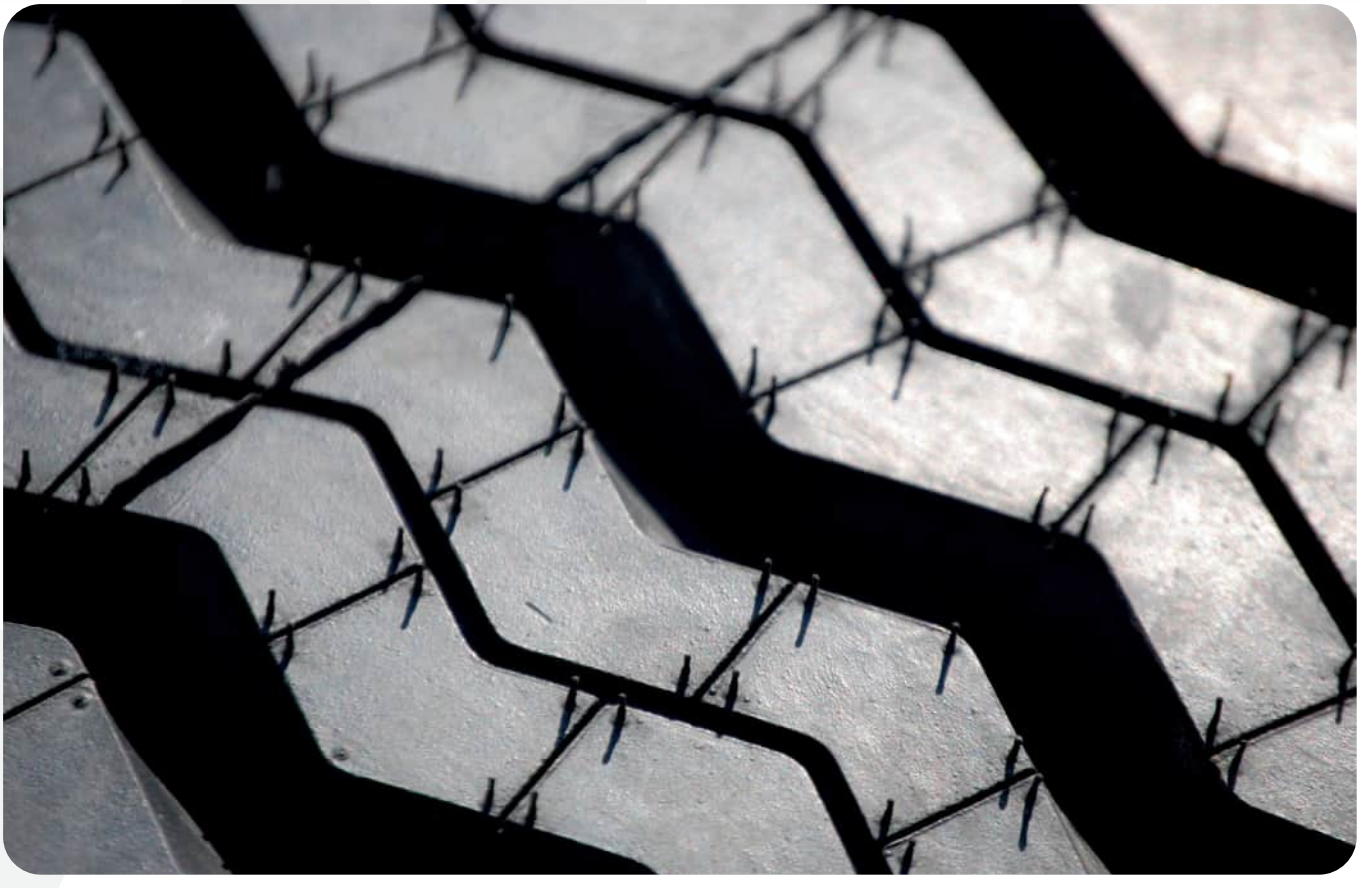
Advantages

- Emulsion UNISIL SE 10-01 is non-toxic, not flammable. It does not cause adverse psychological reactions. Application of the emulsion does not require special safety measures.
- Emulsion UNISIL SE 10-01 is heat-resistant, it is applicable to a temperature of +200°C.
- It has a low fluidity and chemical inertness to construction materials.
- Emulsion UNISIL SE 10-01 is economical, convenient and safe to handle

PHYSICAL AND CHEMICAL PROPERTIES

NAME OF PARAMETER AND UNIT OF MEASURE	STANDARD
Appearence	Homogeneous white liquid without mechanical impurities
Mass content of silicon, %	25-28
pH of water extract	6,0-7,5
Stability on dilution, h, min	24

GUARANTEED SHELF LIFE 12 MONTHS



RESIN UNISIL MSO-M

FEATURES

UNISIL MSO-M – Low molecular weight polymethylalkoxysiloxane with functional reactive groups.

APPLICATIONS

For the production of heat-resistant silicone enamels with heat resistance more than 500°C

To obtain aqueous emulsions with their further use for the production of high-quality water based

Independently in solvents for hydrophobic weather-resistant protection of various materials

For the production of weather-resistant facade paints

Can be used as a binder from mica and other materials for the production of electrical insulating and heat-resistant sealants or plates

Advantages

- Insoluble in water, but easily soluble in almost all organic solvents, including alcohols.
- Does not contain phenyl groups.
- Combined with other organic binders for the production of paints.
- The presence of reactive groups ensures, after the application of the protective coating, the formation of a strong chemical bond with the processed material, while ethanol is released and evaporated.

PHYSICAL AND CHEMICAL PROPERTIES

NAME OF PARAMETER AND UNIT OF MEASURE	STANDARD
Appearance	Colorless or slightly yellowish liquid with slight opalescence
Density at temperature (+25,0±0,5)°C, g/cm³, min.	1,055
Kinematic viscosity at temperature (+25±0,5)°C, cSt, , min.	12,0
The reaction of the medium (pH of non-aqueous solution)	(6,5 – 8,0)*
* UNISIL MSO-M can be produced with pH values agreed with the customer	

SAFETY INFORMATION

Detailed instructions are given in the relevant product safety data sheet. It can be provided upon request.

GUARANTEED SHELF LIFE 12 MONTHS

STORAGE Store in original tightly closed container at temperatures from 0°C up to +30°C. Store in a cool, dry, well-ventilated place. Protect from moisture and direct sunlight.

RESIN UNISIL MSO-M1

FEATURES
UNISIL MSO-M1 – polymethylalkoxysiloxane with functional reactive alkoxy groups.
APPLICATIONS

For the production of heat-resistant silicone enamels with heat resistance more than 650°C

For production of water emulsions for water-dispersion paints

For the production of transparent and pigmented formulations, as a single binder or in combination with other silicone binders for the protection of metal, wood and glass

For production of weather-resistant hydrophobizers paints

Impregnations and varnishes for wood

Advantages

• Insoluble in water, but easily soluble in almost all organic solvents, including alcohols.	• High reactivity
• Polymerizes at room temperature.	• Improves mechanical properties of coatings.
• Coating resistance to high temperatures.	• Can be used in formulations with a low amount of solvent
• Good wetting properties, also on wood surfaces.	

PHYSICAL AND CHEMICAL PROPERTIES

NAME OF PARAMETER AND UNIT OF MEASURE	STANDARD
Appearance	Colorless or slightly yellowish liquid with slight opalescence
Density at temperature (+25,0±0,5)°C, g/cm³, min.	1,050
Kinematic viscosity at temperature (+25±0,5)°C, cSt	15,0 - 40,0
The reaction of the medium (pH of non-aqueous solution)	(6,0 – 7,0)*
Drying time of coating to degree 3 at temperature (20±0.5) °C h, not more than **	1
* UNISIL MSO-M1 can be produced with pH values agreed with the customer ** On addition of tetrabutoxytitanium catalyst.	

SAFETY INFORMATION
Detailed instructions are given in the relevant product safety data sheet. It can be provided upon request.
GUARANTEED SHELF LIFE 12 MONTHS
STORAGE Store in original tightly closed container at temperatures from 0°C up to +30°C.

RESIN UNISIL MSO-DM

FEATURES

UNISIL MSO-DM – Low molecular weight polymethylalkoxysiloxane with functional reactive groups.

APPLICATIONS

For the production of heat-resistant silicone enamels with heat resistance more than 500°C

To obtain aqueous emulsions with their further use for the production of high-quality water based

Independently in solvents for hydrophobic weather-resistant protection of various materials

For the production of weather-resistant facade paints

Can be used as a binder from mica and other materials for the production of electrical insulating and heat-resistant sealants or plates

Advantages

- Insoluble in water, but easily soluble in almost all organic solvents, including alcohols.
- Does not contain phenyl groups.
- Combined with other organic binders for the production of paints.
- The presence of reactive groups ensures, after the application of the protective coating, the formation of a strong chemical bond with the processed material, while ethanol is released and evaporated.

PHYSICAL AND CHEMICAL PROPERTIES

NAME OF PARAMETER AND UNIT OF MEASURE	STANDARD
Appearance	Colorless or slightly yellowish liquid with slight opalescence
Density at temperature (+25,0±0,5)°C, g/cm³, min.	1,035
Kinematic viscosity at temperature (+25±0,5)°C, cSt, , min.	30,0
The reaction of the medium (pH of non-aqueous solution)	(6,5 – 8,0)*
* UNISIL MSO-DM can be produced with pH values agreed with the customer	

SAFETY INFORMATION

Detailed instructions are given in the relevant product safety data sheet. It can be provided upon request.

GUARANTEED SHELF LIFE 12 MONTHS

STORAGE Store in original tightly closed container at temperatures from 0°C up to +30°C. Store in a cool, dry, well-ventilated place. Protect from moisture and direct sunlight.

RESIN UNISIL MSO-RM

FEATURES

UNISIL MSO-RM is a solution of polymethylsiloxane with functional reactive groups in an organic solvent.

APPLICATIONS

A standard binder for the production of rigid silicone resin bonded mica insulators and the pressing of compositions for electrical engineering

An excellent binder for heat-resistant and electrical insulating composite materials

A binder for the production of heat-resistant and dielectric enamels

Advantages

- Polymethylsiloxane resin has a very high concentration of silicon dioxide (after complete oxidation ~ 80%, expressed in solid resin units), therefore it is an ideal binder for applications at temperatures above 300°C.
- Outperforms phenyl-silicon organic resins, because produces less smoke and provides more binding strength.
- Has excellent thermal stability.

PHYSICAL AND CHEMICAL PROPERTIES

NAME OF PARAMETER AND UNIT OF MEASURE	STANDARD
Appearance	Colorless or slightly yellowish liquid with slight opalescence
Mass content of solids, %, min.	50,0
Density at temperature (+25,0±0,5)°C, g/cm³	0,950 – 1,050
Kinematic viscosity at temperature (+25±0,5)°C, cSt	5,0 – 12,0

SAFETY INFORMATION

Detailed instructions are given in the relevant product safety data sheet. It can be provided upon request.

GUARANTEED SHELF LIFE 12 MONTHS

STORAGE Store in original tightly closed container at temperatures from 0°C up to +30°C. Store in a cool, dry, well-ventilated place. Protect from moisture and direct sunlight.

RESIN UNISIL MSO-RM T

FEATURES
UNISIL MSO-RM T is a solution of polymethylsiloxane with functional reactive groups in a toluene.

APPLICATIONS

A standard binder for the production of rigid silicone resin bonded mica insulators and the pressing of compositions for electrical engineering

An excellent binder for heat-resistant and electrical insulating composite materials

A binder for the production of heat-resistant and dielectric enamels

Advantages

- Polymethylsiloxane resin has a very high concentration of silicon dioxide (after complete oxidation ~ 80%, expressed in solid resin units), therefore it is an ideal binder for applications at temperatures above 300°C.
- Outperforms phenyl-silicon organic resins, because produces less smoke and provides more binding strength.
- Has excellent thermal stability.

PHYSICAL AND CHEMICAL PROPERTIES

NAME OF PARAMETER AND UNIT OF MEASURE	STANDARD
Appearance	Colorless or slightly yellowish liquid with slight opalescence
Mass content of solids, %, min.	50,0
Density at temperature (+25,0±0,5)°C, g/cm³	0,950 – 1,050
Kinematic viscosity at temperature (+25±0,5)°C, cSt	5,0 – 12,0

SAFETY INFORMATION
Detailed instructions are given in the relevant product safety data sheet. It can be provided upon request.
GUARANTEED SHELF LIFE 12 MONTHS
STORAGE Store in original tightly closed container at temperatures from 0°C up to +30°C. Store in a cool, dry, well-ventilated place. Protect from moisture and direct sunlight.

RESIN UNISIL MSO-RM T1

FEATURES

UNISIL MSO-RM T1 is solution of high molecular weight polymethylsiloxane in toluene.

APPLICATIONS

As a binder for: heat-resistant enamels and paints (for corrosion protection of external surfaces of heating devices, including fireplaces and chimneys, gas and steam pipelines, waste incinerators, as well as for painting car exhaust systems, engine parts, etc.)

As a binder for high-temperature resistant coatings

As a binder for anticorrosive weatherproof coatings

Advantages

In combination with high heat and weather resistance, it has:

- corrosion protection;
- fast drying at room temperature;
- high hydrophobicity of the coating;
- heat resistance of anticorrosion coatings made of Unisil MSO-RM T1 - up to 600 °C (when using thermostable pigments and fillers).
- Unisil MSO-RM T1 based coatings dry at room temperature and form an anti-corrosion film.

PHYSICAL AND CHEMICAL PROPERTIES

NAME OF PARAMETER AND UNIT OF MEASURE	STANDARD
Appearance	Colorless or slightly yellowish liquid with slight opalescence
Mass content of solids, %, min.	50,0
Density at temperature (+25,0±0,5)°C, g/cm³	0,950 – 1,050
Kinematic viscosity at temperature (+25±0,5)°C, cSt	35,0 – 80,0

SAFETY INFORMATION

Detailed instructions are given in the relevant product safety data sheet. It can be provided upon request.

GUARANTEED SHELF LIFE 12 MONTHS

STORAGE Store in original tightly closed container at temperatures from 0°C up to +30°C. Store

RESIN UNISIL MSO-RM X

FEATURES
UNISIL MSO-RM X is a solution of polymethylsiloxane with functional reactive groups in xylene.

APPLICATIONS

A standard binder for the production of rigid silicone resin bonded mica insulators and the pressing of compositions for electrical engineering

An excellent binder for heat-resistant and electrical insulating composite materials

A binder for the production of heat-resistant and dielectric enamels

Advantages

- Polymethylsiloxane resin has a very high concentration of silicon dioxide (after complete oxidation ~ 80%, expressed in solid resin units), therefore it is an ideal binder for applications at temperatures above 300°C.
- Outperforms phenyl-silicon organic resins, because produces less smoke and provides more binding strength.
- Has excellent thermal stability.

PHYSICAL AND CHEMICAL PROPERTIES

NAME OF PARAMETER AND UNIT OF MEASURE	STANDARD
Appearance	Colorless or slightly yellowish liquid with slight opalescence
Mass content of solids, %, min.	50,0
Density at temperature (+25,0±0,5)°C, g/cm³	0,950 – 1,050
Kinematic viscosity at temperature (+25±0,5)°C, cSt	5,0 – 12,0

SAFETY INFORMATION
Detailed instructions are given in the relevant product safety data sheet. It can be provided upon request.
GUARANTEED SHELF LIFE 12 MONTHS
STORAGE Store in original tightly closed container at temperatures from 0°C up to +30°C. Store in a cool, dry, well-ventilated place. Protect from moisture and direct sunlight.

RESIN UNISIL MSO-RDM

FEATURES

UNISIL MSO-RDM is a solution of a functional polymethylsiloxane oligomer with residual alkoxy groups in toluene or xylene.

APPLICATIONS

- Suitable for all types of heat-resistant paints: for (anti-corrosion) coatings for mufflers, exhaust systems, engine parts, boilers, stoves, ovens, chimneys, barbecues, electric and gas heaters;
- Can be used as a binder alone or in combination with other organic resins for high quality weather resistant paints;
- In diluted form it can be used for impregnation of mineral building materials, İn particular, for water-repellent treatment of natural stone, especially limestone;
- Can be used as a binder for the production of electrical insulating and heat-resistant sealants or plates;
- Due to its excellent release properties, MSO-RDM can be used as a mechanically resistant release coat for molds for casting and pressing of resins, plastics and rubbers. For this, the coating must be thermally cured.

Advantages

- Good balance of plasticity, hardness, heat resistance, weather resistance and hydrophobicity of the coating.
- Relatively low viscosity of the solution.
- Impregnation with MSO-RDM reduces the degree of damage to the surface of natural stone, increases resistance to frost and salt fog, reduces energy losses due to protection from getting wet.
- Surfaces of building materials impregnated with MSO-RDM demonstrate a significantly lower tendency to contamination.

PHYSICAL AND CHEMICAL PROPERTIES

NAME OF PARAMETER AND UNIT OF MEASURE	STANDARD
Appearance	Colorless or slightly yellowish liquid with slight opalescence
Mass content of solids, %, min.	50,0
Density at temperature (+25,0±0,5)°C, g/cm³	0,950 – 1,050
Kinematic viscosity at temperature (+25±0,5)°C, cSt	3,0 – 50,0

SAFETY INFORMATION

Detailed instructions are given in the relevant product safety data sheet. It can be provided upon request.

GUARANTEED SHELF LIFE 12 MONTHS

STORAGE Store in original tightly closed container at temperatures from 0°C up to +30°C. Store in a cool, dry, well-ventilated place. Protect from moisture and direct sunlight.

EMULSION UNISIL EMSO-M

FEATURES
UNISIL EMSO-M - emulsion of polymethyl alkoxysiloxane in water.

APPLICATIONS

As a binder for the production of heat-resistant coatings

In combination with other binders for the production of high-quality facade and interior paints

Independently for hydrophobic protection of silicate surfaces

Advantages

- Based on polymethyl alkoxysiloxane resin with high functionality and a minimum content of organic radicals associated with silicon atoms.
- The presence of reactive groups ensures, after the application of the protective coating, the formation of a strong chemical bond with the processed material, while ethanol is released and evaporated.
- Protected surfaces have low water absorption, resistance to pollution, good appearance and durability, resistance to solar radiation.

PHYSICAL AND CHEMICAL PROPERTIES

NAME OF PARAMETER AND UNIT OF MEASURE	STANDARD
Appearance	From milky to light beige color emulsion
Mass content of solids, %	42 - 56
Density at temperature (+25,0±0,5)°C, g/cm³	about 1,000
Dynamic viscosity at temperature (+25±0,5)°C, mPa·s, min.	600
The reaction of the medium (pH of the aqueous extract)	~ 5,0
* UNISIL EMSO-M can be produced with pH values agreed with the customer.	

SAFETY INFORMATION
Detailed instructions are given in the relevant product safety data sheet. It can be provided upon request.
GUARANTEED SHELF LIFE 12 MONTHS
STORAGE Store in original tightly closed container at temperature from 0°C to +30°C. Store in a cool, dry, well-ventilated place. Protect from moisture and direct sunlight.

EMULSION UNISIL EMSO-DM

FEATURES
UNISIL EMSO-DM - emulsion of polymethyl alkoxysiloxane in water.

APPLICATIONS

As a binder for the production of heat-resistant coatings

In combination with other binders for the production of high-quality facade and interior paints

Independently for hydrophobic protection of silicate surfaces

Advantages

- Based on polymethylalkoxysiloxane resin with functional groups.
- The presence of reactive groups ensures, after the application of the protective coating, the formation of a strong chemical bond with the processed material, while ethanol is released and evaporated.
- Easily combined with other binders.
- Improves the elasticity of the coating.
- Protected surfaces have low water absorption, resistance to pollution, good appearance and durability, resistance to solar radiation.

PHYSICAL AND CHEMICAL PROPERTIES

NAME OF PARAMETER AND UNIT OF MEASURE	STANDARD
Appearance	From milky to light beige color emulsion
Mass content of solids, %	50 - 56
Density at temperature (+25,0±0,5)°C, g/cm³	about 1,055
Dynamic viscosity at temperature (+25±0,5)°C, mPa·s, min.	800
The reaction of the medium (pH of the aqueous extract)	(6,0 – 8,0)*
* UNISIL EMSO-DM can be produced with pH values agreed with the customer.	

SAFETY INFORMATION
Detailed instructions are given in the relevant product safety data sheet. It can be provided upon request.
GUARANTEED SHELF LIFE 12 MONTHS
STORAGE Store in original tightly closed container at temperature from 0°C to +30°C. Store in a cool, dry, well-ventilated place. Protect from moisture and direct sunlight.

EMULSION UNISIL EMSO-MA

FEATURES

UNISIL EMSO-MA - Emulsion of polymethylalkoxysiloxane and solution of amino-functionalized polysiloxane oligomer in water.

APPLICATIONS

In combination with other binders for the production of high-quality facade and interior paints.

Independently for hydrophobic protection of silicate surfaces.

Advantages

- The presence of reactive groups ensures, after the protective coating is applied, the formation of a strong chemical bond with the treated material, while the ethyl alcohol is released and evaporates.
- Amino-functional polysiloxane oligomer increases adhesion to the treated surface.
- Protected surfaces are characterized by low water absorption, resistance to contamination, good appearance and durability, resistance to solar radiation.

PHYSICAL AND CHEMICAL PROPERTIES

NAME OF PARAMETER AND UNIT OF MEASURE	STANDARD
Appearance	Milky to light beige emulsion
Mass fraction of non-volatile substances at (+105,0±2)°C, (120±5) m, (2,0±0,2) g, %, min.	50
Density at temperature (+25,0±0,5)°C, g/cm³	about 1,000
Dynamic Brookfield viscosity at (+25±1)°C, spindle L, mPa·s, min.	500
The reaction of the medium (pH of the 25% solution)	(6,0 – 7,0)*
* UNISIL EMSO-MAcan be produced with pH values agreed with the customer.	

SAFETY INFORMATION

Detailed instructions are given in the relevant product safety data sheet. It can be provided upon request.

GUARANTEED SHELF LIFE 12 MONTHS

STORAGE Store in original tightly closed container at temperature from 0°C to +30°C. Store in a cool, dry, well-ventilated place. Protect from moisture and direct sunlight.

EMULSION UNISIL EMSO-DMA

FEATURES

UNISIL EMSO-DMA - Emulsion of polymethylalkoxysiloxane and solution of amino-functionalized polysiloxane oligomer in water.

APPLICATIONS

In combination with other binders for the production of high-quality facade and interior paints.

Independently for hydrophobic protection of silicate surfaces.

Advantages

- The presence of reactive groups ensures, after the protective coating is applied, the formation of a strong chemical bond with the treated material, while the ethyl alcohol is released and evaporates.
- Amino-functional polysiloxane oligomer increases adhesion to the treated surface.
- Protected surfaces are characterized by low water absorption, resistance to contamination, good appearance and durability, resistance to solar radiation.
- Gives elasticity to waterborne paints.

PHYSICAL AND CHEMICAL PROPERTIES

NAME OF PARAMETER AND UNIT OF MEASURE	STANDARD
Appearance	Milky to light beige emulsion
Mass fraction of non-volatile substances at (+105,0±2)°C, (120±5) m, (2,0±0,2) g, %, min.	50
Density at temperature (+25,0±0,5)°C, g/cm³	about 1,000
Dynamic Brookfield viscosity at (+25±1)°C, spindle L, mPa·s, min.	600
The reaction of the medium (pH of the aqueous extract)	(6,0 – 7,0)*
* UNISIL EMSO-DMA can be produced with pH values agreed with the customer.	

SAFETY INFORMATION

Detailed instructions are given in the relevant product safety data sheet. It can be provided upon request.

GUARANTEED SHELF LIFE 12 MONTHS

STORAGE Store in original tightly closed container at temperature from 0°C to +30°C. Store in a cool, dry, well-ventilated place. Protect from moisture and direct sunlight.

UNISIL MSO-AW

FEATURES

Unisil MSO-AW is a solution of amino-functional polysiloxane oligomer in water.

UNISIL MSO-AWN

FEATURES

Unisil MSO-AWN is a solution of amino-functional polysiloxane oligomer in water.

UNISIL MSO-AE

FEATURES

Unisil MSO-AE is a solution of amino-functional polysiloxane oligomer in ethanol.

APPLICATIONS

Advantages

- Bifunctional organic substance, functional silanol groups of which can chemically combine with an inorganic substrate.
- Organophilic amino group can react with the reactive groups of the substrate.
- Dissolves in water in any proportions.
- Stable for a long time after dilution with water.
- Not flammable.
- Does not emit volatile organic substances.
- Does not require special equipment and special safety measures for its use.
- Freezing once will not affect the quality of the product.
- The use of Unisil MSO-AW / MSO-AWN / MSO-AE improves the following properties of the resulting materials:
    - mechanical properties such as impact strength, flexural and tensile strength
    - moisture resistance
    - anti-corrosion properties
    - technological properties: adhesion, better filler dispersion

PHYSICAL AND CHEMICAL PROPERTIES

NAME OF PARAMETER AND UNIT OF MEASURE	STANDARD for UNISIL MSO-AW	STANDARD for UNISIL MSO-AWN	STANDARD for UNISIL MSO-AE
Appearance	Colorless or slightly yellowish liquid with an amine odor		
Content of active substance, %, min	48	48	40
Density at temperature (+20,0±0,5)°C, g/cm³		1.06 - 1.20	
Kinematic viscosity, at temperature (+25,0±0,5)°C, cSt, max	250	300	250
pH (100 g of water + 2 g of product), min	11.0	5.7 - 6.5	11.0

SAFETY INFORMATION

Detailed instructions are given in the relevant product safety data sheet. It can be provided upon request.

GUARANTEED SHELF LIFE 12 MONTHS

STORAGE Store in original tightly closed container at temperature above 0°C. Store in a cool, dry, well-ventilated place. Protect from moisture and direct sunlight.

3-AMINOPROPYLTRIETHOXYSILANE

FEATURES

3-aminopropyltriethoxysilane is amino functional polyorganosilane.

APPLICATIONS

Fiberglass or glass fabric composites:

as a finish or size constituent

Mineral fiber insulating materials and abrasives

as an additive to phenolic resin binders adhesive promoter

Foundry resins

as an additive to phenolic, furan and melamine resins

Sealants and adhesives

as a primer or additive and for chemical modification

Paints and coatings

as an additive and primer for improving adhesion to the substrate
primer for glass and metal

Mineral-filled polymers or HFFR cablesand

for pretreatment of fillers and pigments

Advantages

- The silane reduces the filler's sedimentation tendency in the uncured polymer.
- Improves mechanical properties such as impact strength, flexural and tensile strength and modulus of the composites.
- Improves moisture resistance
- Improves anti-corrosion properties
- Improves technological properties: adhesion, better filler dispersion.

PHYSICAL AND CHEMICAL PROPERTIES

NAME OF PARAMETER AND UNIT OF MEASURE	STANDARD
Appearance	Colorless transparent liquid
Density at (+20±0,5)°C, g /cm³	0.94 - 0.95
Refractive Index (+20±0,5)°C	1,418 - 1,422

GUARANTEED SHELF LIFE 12 MONTHS

STORAGE Store in original tightly closed container at temperature from 0°C to +30°C. Store in a cool, dry, well-ventilated place. Protect from moisture and direct sunlight.

SILICONE EMULSION UNISIL SE 50-12HA

FEATURES

Unisil SE 50-12HA – emulsion of reactive polydimethylsiloxane and solution of amino-functionalized polysiloxane oligomer in water.

APPLICATIONS

In combination with other binders for the production of high-quality facade and interior paints.

Independently for hydrophobic protection of silicate surfaces.

Advantages

- The presence of reactive groups ensures, after the protective coating is applied, the formation of a strong chemical bond with the treated material.
- Amino-functional polysiloxane oligomer increases adhesion to the treated surface.
- Protected surfaces are characterized by low water absorption, resistance to contamination, good appearance and durability, resistance to solar radiation.
- Gives elasticity to waterborne paints.

PHYSICAL AND CHEMICAL PROPERTIES

NAME OF PARAMETER AND UNIT OF MEASURE	STANDARD
Appearance	Milky to light beige emulsion
Mass fraction of non-volatile substances at (+105,0±2)°C, (120±5) m, (2,0±0,2) g, %, min.	48
Dynamic Brookfield viscosity at (+25±1)°C, spindle L, mPa·s, min.	250
The reaction of the medium (pH of the aqueous extract)	5.5 – 7,0

SAFETY INFORMATION

Detailed instructions are given in the relevant product safety data sheet. It can be provided upon request.

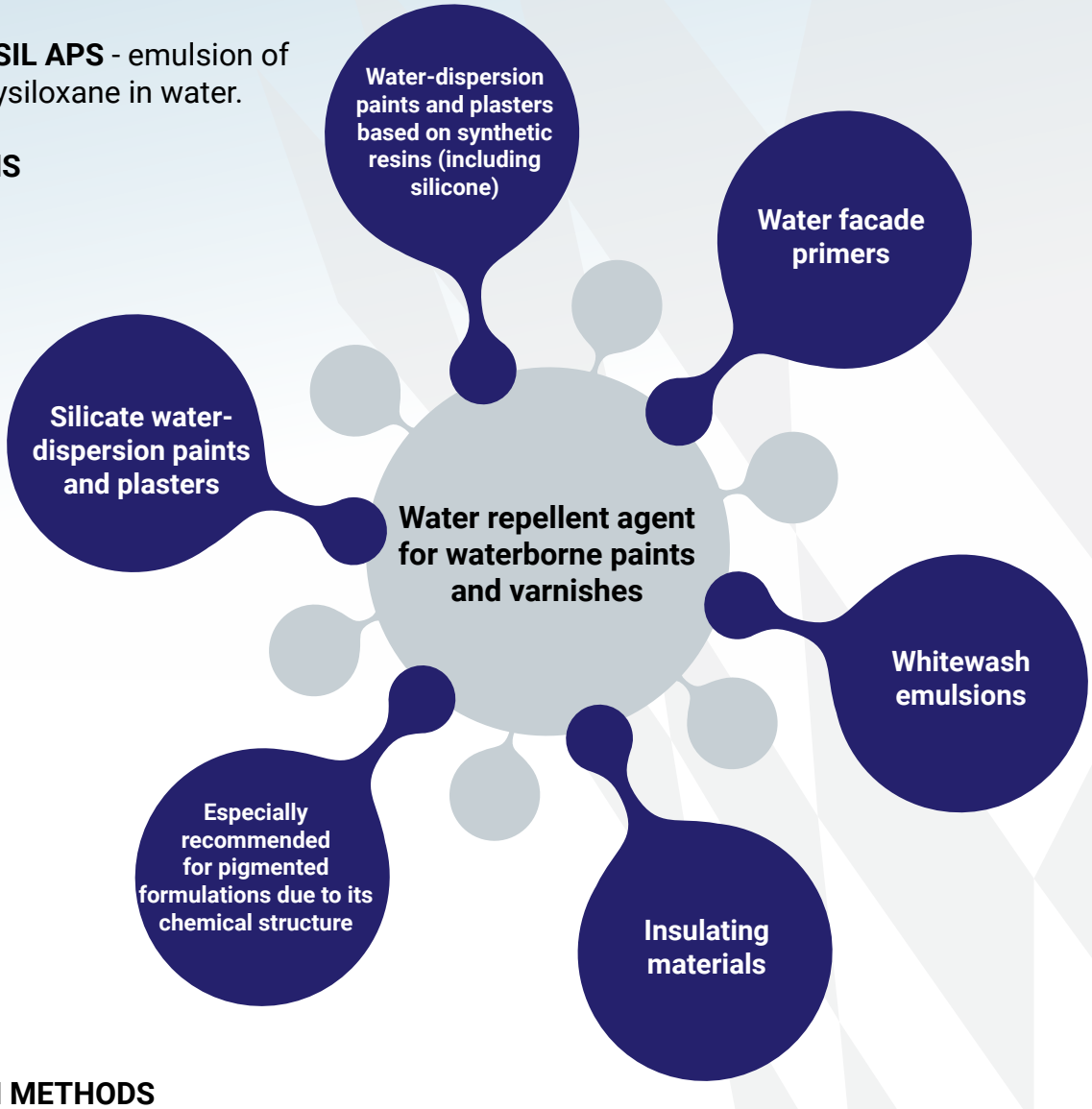
GUARANTEED SHELF LIFE 12 MONTHS

STORAGE Store in original tightly closed container at temperature from 0°C to +30°C. Store in a cool, dry, well-ventilated place. Protect from moisture and direct sunlight.

EMULSION UNISIL APS

FEATURES
Emulsion UNISIL APS - emulsion of functional polysiloxane in water.

APPLICATIONS



APPLICATION METHODS
It is generally recommended to add 1.0 - 3.0 % to aqueous coating systems, based on the total formulation:

- in masonry coatings - 1.0 %;
- in primers - 5.0 %;
- as an independent water-repellent primer - add 10 % emulsion to the water;
- for impregnation of insulating materials - in water 0.5 - 1.0% of the emulsion.

To determine the optimal concentration before use, it is recommended to conduct preliminary tests. In aqueous coating systems, the product is added during or at the end of the manufacturing process.
To improve vapor permeability, it is recommended to use a combination with EMSO-M or EMSO-DM.

Advantages

- Significantly reduces capillary water absorption.
- İncreases the hydrophobicity of the surface, which leads to a good “lotus effect”.
- Reduces the tendency to contamination of the coating.
- Improves early water resistance.
- Improves water resistance and vapor permeability of coatings and primers.
- Imparts hydrophobic properties to insulating materials.
- Does not contain alkyl phenol ethoxylates.
- Does not contain organic solvents.
- Highly effective with a small amount of application.
- Soluble in water, but solutions have limited storage stability.
- Does not contain cyclic silicones.

PHYSICAL AND CHEMICAL PROPERTIES

NAME OF PARAMETER AND UNIT OF MEASURE	STANDARD
Appearance	Milky to white liquid
Mass content of solids, %, min.	49
Density at temperature (+25,0±0,5)°C, g/cm³	about 1,000
Dynamic viscosity at temperature (+25±0,5)°C, mPa•s, min.	100
The reaction of the medium (pH of the aqueous extract)	6,0 – 7,5

SAFETY INFORMATION Detailed instructions are given in the relevant product safety data sheet. It can be provided upon request.

GUARANTEED SHELF LIFE 12 MONTHS

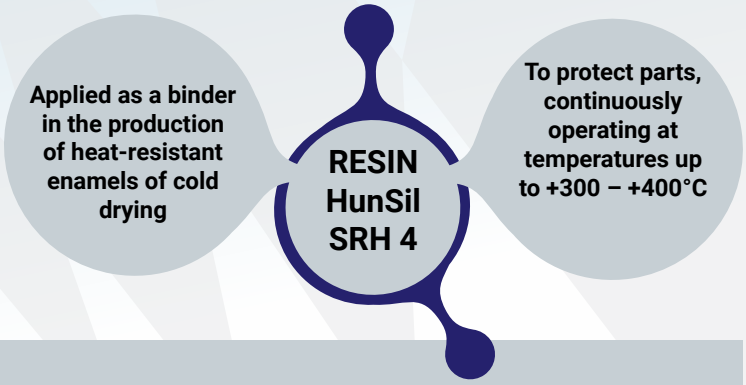
STORAGE Store in original tightly closed container at temperatures from 0°C to +30°C.

HEAT-RESISTANT RESIN HunSil SRH 4

FEATURES

HunSil SRH 4 is a solution of polymethylphenylsiloxane resin in xylol and toluene.

APPLICATIONS



Advantages

- It combines a good heat resistance and resistance to weather conditions.
- Good compatibility with organic resins and enamels components.
- Varnish film has a good benzine resistance.
- The polymerized varnish coat is nontoxic, fire-safe.

PHYSICAL AND CHEMICAL PROPERTIES

NAME OF PARAMETER AND UNIT OF MEASURE	STANDARD
Apperiance	Clear liquid
Color	from yellow to brown
Funnel viscosity at (+20±2)°C	13-24
Mass content of nonvolatile substances, %	53 ± 2
Acidity index, mg of KOH/g of varnish, max	1,0
Jellification at (+200±3)°C, minutes, max	60
Varnish compatibility with the ethylcellulose solution	full

SAFETY INFORMATION

The product is flammable. Follow to fire safety regulations.

STORAGE

Store in a cool, dry, well-ventilated place, away from heaters. Protect from moisture and direct sunlight. Store in airtight containers at a temperature from -30°C to +35°C.

GUARANTEED SHELF LIFE 6 MONTHS

HEAT-RESISTANT RESIN HunSil SRH 7

FEATURES

HunSil SRH 7 is a solution of polyester-modified polymethylphenylsiloxane resin in toluene. The varnish features good oil resistance.

APPLICATIONS AND ADVANTAGES

Oilfields

Protection of separators, gas traps with the fitting, cyclone settlers.

Mechanical engineering

- Painting car radiators
- Other elements and equipment operating at +350 – +400°C for a long time.

Corrosion prevention

- External surface of gas ducts, chlorinators.
- Surface of steam and gas turbines, ejectors.
- Different elements of agricultural machines.
- Air drying apparatus.
- Chemical catching equipment.
- Coke-chemical equipment.
- Internal surface of steam-water tanks operating at +150 – +160°C.

Paint and varnish materials manufacturing

- Preparation of the heat-resistant enamels (for parts operating at temperature of about +500°C).
- Combination of the resin SRH 7 with pentaphthalic (perchlorovinyl) nitrocellulose enamels provides improvement of the film strength, water-, heat- and light- resistance, water repellency, gloss and hardness.
- Component of antiburning paints

Light industry

- Sizing and dressing of artificial fur.
- Resistance improvement of protective clothing to attack by acids.
- Impregnation of filter fabrics to increase serviceability, heat and wear resistance.

Glass and glass-reinforced plastics manufacturing

Release coating

PHYSICAL AND CHEMICAL PROPERTIES

NAME OF PARAMETER AND UNIT OF MEASURE	STANDARD
Mass content of nonvolatile substances, %	37 ± 3
Acidity index, mg of KOH/g of varnish max	6,0

SAFETY INFORMATION

The polymerized lacquer coat is nontoxic, fire-safe.

GUARANTEED SHELF LIFE 12 MONTHS

HEAT-RESISTANT RESIN HunSil SRH 8

FEATURES

HunSil SRH 8 is a polyphenyldimethylsiloxane resin solution in toluene modified with solution of polybutenemeth-acrylic resin in a mixture of acetone, ethylacetate and butylacetate or xylol.

APPLICATIONS

Advantages

- Varnish has a high heat resistance (used for parts painting, continuously operating at +300°C – +350°C.
- Increases the life-time of the coating.
- Imparts gloss, shine, creates the “wet stone” effect.
- The treated surfaces acquire increased resistance to the aggressive medium, petrol-resistant.
- Provides monuments preservation.
- Penetrates deeply into porous bases.
- Resin HunSil SRH 8 has a powerful strengthening effect.
- Performs the function of a priming and coating, when applied in several layers.
- Additionally, it may be coated with acrylic solventborne paints and organosilicone enamels.
- Restores damaged paint coating.
- Lacquering provides a durability to the mechanical loads.
- Protects against water influence.
- Provides resistance to the effects of atmosphere and weather conditions.
- The treated surfaces demonstrate resistance to oils and lubricants.

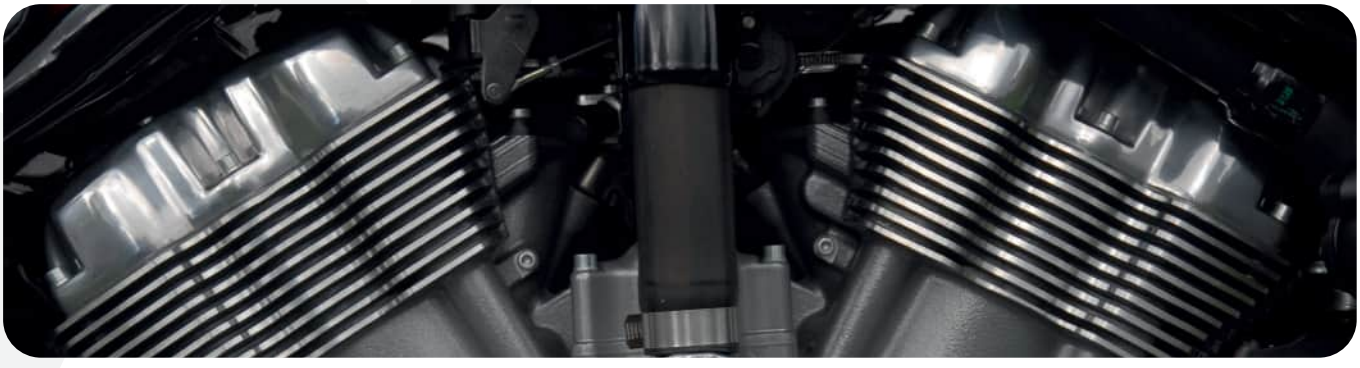
PHYSICAL AND CHEMICAL PROPERTIES

NAME OF PARAMETER AND UNIT OF MEASURE	STANDARD
Funnel viscosity, s	12-17
Mass content of nonvolatile substances, %	15-17
Acid index, mg of KOH/g of varnish max	3
Drying time of varnish film to degree 3 at temperature (+20±5)°C, h, max	max 3

SAFETY INFORMATION

The polymerized lacquer coat is nontoxic, fire-safe.

GUARANTEED SHELF LIFE 36 MONTHS



HEAT-RESISTANT RESIN HunSil SRH 9

FEATURES

HunSil SRH 9 is a solution of polyphenylsiloxane resin modified with glyptal varnish in toluene or xylene.

APPLICATIONS

Advantages

- Resin has a high heat resistance (used for parts painting, continuously operating at -40°C – +500°C).
- Increases the life-time of the coating.
- The treated surfaces acquire increased resistance to the aggressive medium, petrol-resistant.
- Provides monuments preservation.
- Penetrates deeply into porous bases..
- Resin HunSil SRH 9 has a powerful strengthening effect
- Performs the function of a priming and coating, when applied in several layers.
- Additionally, it may be coated with acrylic solventborne paints and organosilicone enamels.
- Restores damaged paint coating.
- Lacquering provides a durability to the mechanical loads.
- Protects against water influence.
- Provides resistance to the effects of atmosphere and weather conditions.
- The treated surfaces demonstrate resistance to oils and lubricants.
- As a modifying additive to the alkyd, acrylic and others painting and varnishes, reduces drying time and increases the weatherability.

PHYSICAL AND CHEMICAL PROPERTIES

NAME OF PARAMETER AND UNIT OF MEASURE	STANDARD
Funnel viscosity, s	10-13
Mass content of nonvolatile substances, %	33-37
Drying time of varnish film to degree 3 at temperature (+20±5)°C, h, max	1
Acid index, mg of KOH/g of varnish max	10

SAFETY INFORMATION

The polymerized lacquer coat is nontoxic, fire-safe.

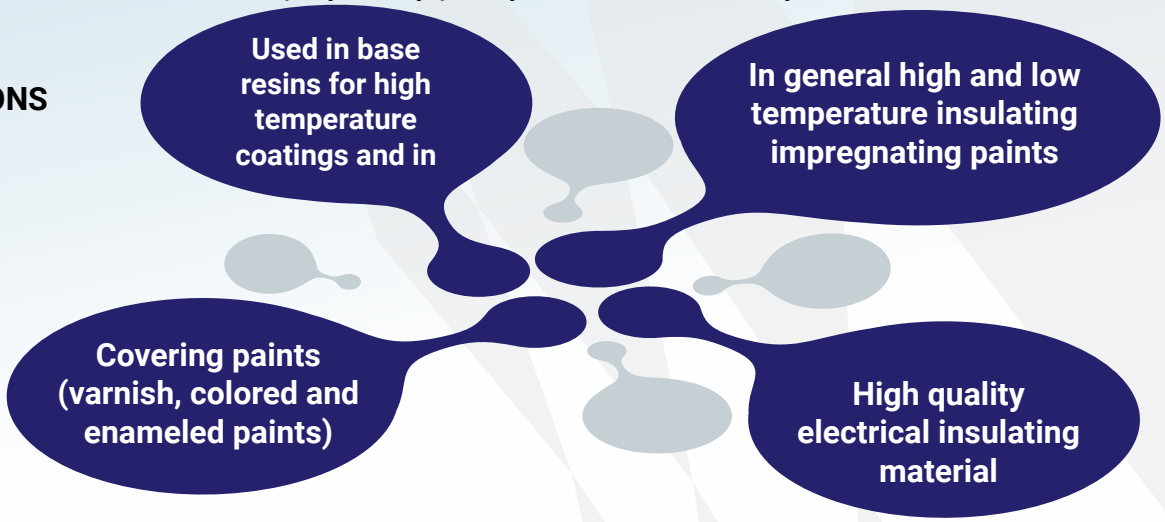
GUARANTEED SHELF LIFE 36 MONTHS

RESIN HunSil SRE 51 X

FEATURES

HunSil SRE 51 X is a solution of polymethylphenylsiloxane resin in xylene.

APPLICATIONS



Advantages

- Excellent high and low temperature stability, hydrophobicity and moisture resistance.
- Good electrical insulating ability, arc and corrosion resistance.

PHYSICAL AND CHEMICAL PROPERTIES

NAME OF PARAMETER AND UNIT OF MEASURE	STANDARD
Appearance	Transparent liquid. Slight opalescence and insignificant impurities due to the container are allowed
Color	Colorless to light yellow or a pink shade
Relative viscosity at a temperature (+20±5)°C by viscometer B3-246 (or B3-4), nozzle diameter 4 mm, s	25 - 50
Mass fraction of non-volatile substances, %	49 - 51
Drying time of the resin film to degree 3 on a copper plate at (+200±5)°C, min, no more	120
Thermoelasticity of the resin film on a copper plate at (+200±5)°C, h, not less	50
Specific volumetric electrical resistance of the resin film, Ohm*m: M (15-35)°C 45-75% M (180±2)°C, <20 % 24 h (20±1)°C, 93%	 no less $1*10^{12}$ no less $1*10^{11}$ no less $1*10^{11}$
Electric strength of the resin film, MV/m: M (15-35) oC 45-75 % M (180±2) oC, <20 % 24 h (20±1) oC, 93%	 no less 70 no less 35 no less 35

SAFETY INFORMATION The polymerized lacquer coat is nontoxic, fire-safe.

GUARANTEED SHELF LIFE 12 MONTHS

RESIN HunSil SRE 52 XT

FEATURES

HunSil SRE 52 XT is a solution of polymethylphenylsiloxane resin in xylene **and toluene.**

APPLICATIONS

It is widely used for high temperature high quality insulating coatings

Recommended for use at temperatures over +600°C

Advantages

- Excellent high and low temperature stability, hydrophobicity and moisture resistance.
- Good electrical insulating, arc and corrosion resistance.
- High strength after full cure.
- Good filling capacity.
- High temperature resistance.
- Dries quickly at normal temperatures and does not turn yellow at high temperatures.

PHYSICAL AND CHEMICAL PROPERTIES

NAME OF PARAMETER AND UNIT OF MEASURE	STANDARD
Appearance	Transparent liquid. Slight opalescence and insignificant impurities due to the container are allowed
Color	Colorless to light yellow
Relative viscosity at a temperature (+20±5)°C by viscometer B3-246 (or B3-4), nozzle diameter 4 mm, s	25 - 60
Mass fraction of non-volatile substances, %	54 - 56
Drying time of the resin film to degree 3 on a copper plate at (+200±5)°C, min, no more	15
Thermoelasticity of the resin film on a copper plate at (+200±5)°C, h, not less	50
Specific volumetric electrical resistance of the resin film, Ohm*m: M (15-35)°C 45-75% M (180±2)°C, <20 % 24 h (20±1)°C, 93%	 no less $1*10^{12}$ no less $1*10^{10}$ no less $1*10^{11}$
Electric strength of the resin film, MV/m: M (15-35) oC 45-75 % M (180±2) oC, <20 % 24 h (20±1) oC, 93%	 no less 70 no less 35 no less 35

SAFETY INFORMATION The polymerized lacquer coat is nontoxic, fire-safe.

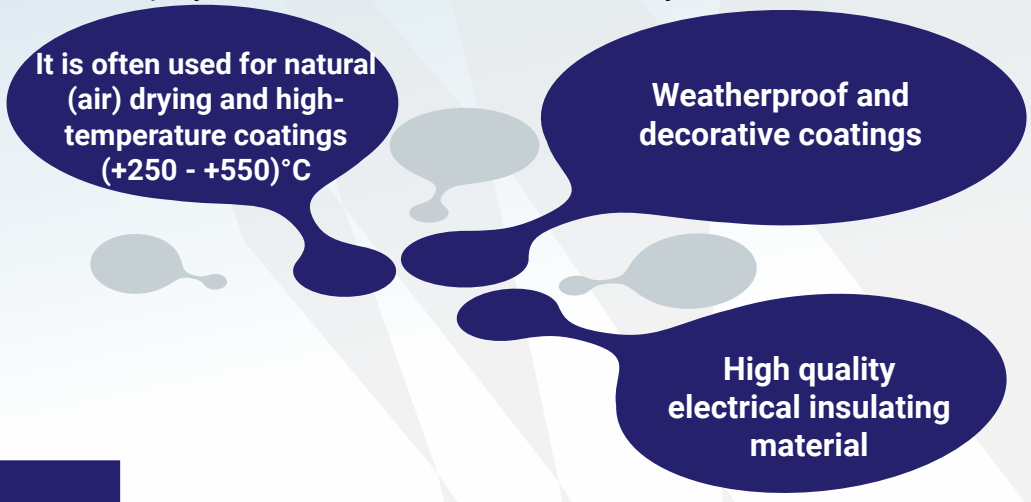
GUARANTEED SHELF LIFE 12 MONTHS

RESIN HunSil SRE 54 X

FEATURES

HunSil SRE 54 X is a solution of polyester modified silicone resin in xylene.

APPLICATIONS



Advantages

- Excellent high and low temperature stability, hydrophobicity and moisture resistance.
- High strength after complete drying, glossiness and filling capacity.
- Resistance to yellowing at high temperatures.
- Good electrical insulation capability, arc and corrosion resistance.

PHYSICAL AND CHEMICAL PROPERTIES

NAME OF PARAMETER AND UNIT OF MEASURE	STANDARD
Appearance	Transparent liquid. Slight opalescence and insignificant impurities due to the container are allowed
Color	Colorless to light yellow or a pink shade
Relative viscosity at a temperature (+20±5)°C by viscometer B3-246 (or B3-4), nozzle diameter 4 mm, s	40 - 80
Mass fraction of non-volatile substances, %	49 - 51
Drying time of the resin film to degree 3 on a copper plate at (+200±5)°C, min, no more	30
Thermoelasticity of the resin film on a copper plate at (+200±5)°C, h, not less	50
Cementing ability of the resin film at (+20±5)°C, kgf	250
Specific volumetric electrical resistance of the resin film, Ohm*m: M (15-35)°C 45-75% M (180±2)°C, <20 % 24 h (20±1)°C, 93%	 no less $1*10^{13}$ no less $1*10^{10}$ no less $1*10^{11}$
Electric strength of the resin film, MV/m: M (15-35)°C 45-75 % M (180±2)°C, <20 % 24 h (20±1)°C, 93%	 no less 75 no less 50 no less 40

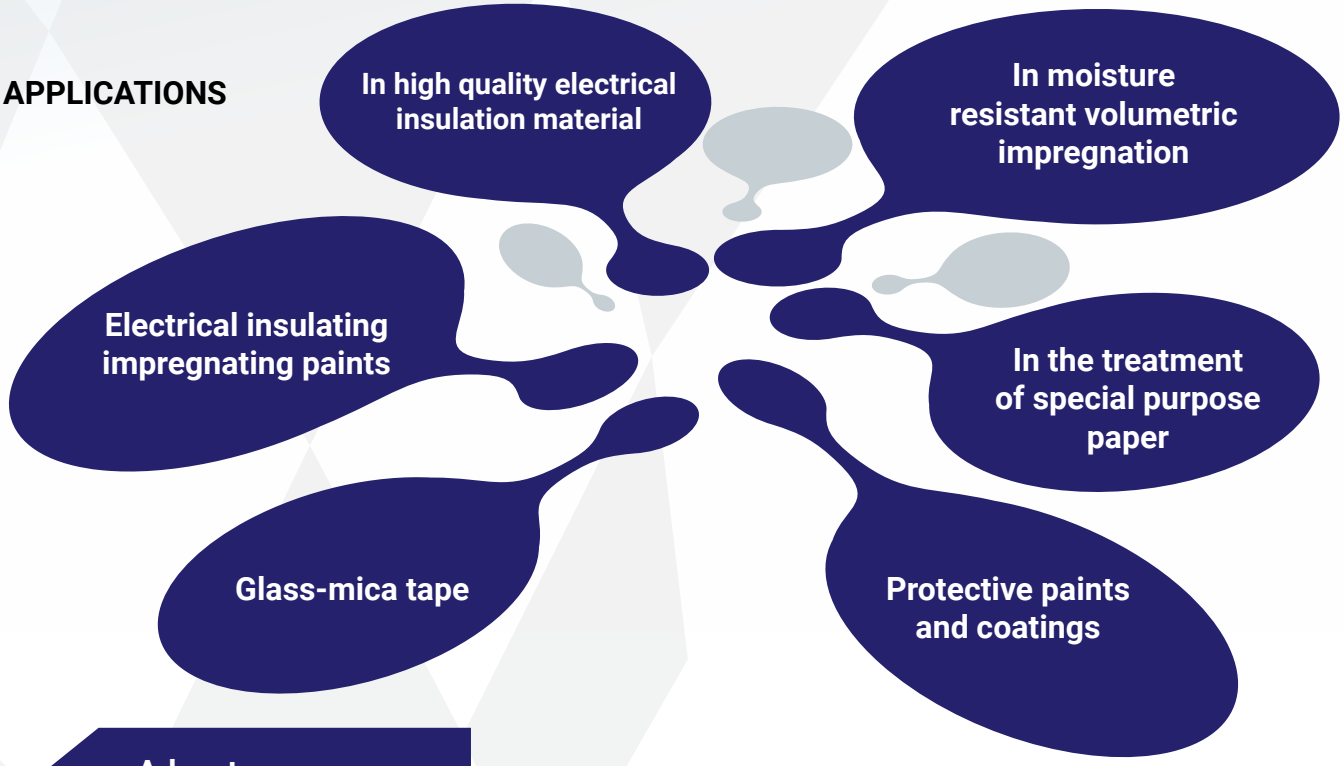
SAFETY INFORMATION The polymerized lacquer coat is nontoxic, fire-safe.

GUARANTEED SHELF LIFE 12 MONTHS

RESIN HunSil SRE 55 X

FEATURES
HunSil SRE 55 X is a solution of polymethylphenylsiloxane resin in xylene.

APPLICATIONS



Advantages

- Excellent high and low temperature stability, hydrophobicity and moisture resistance.
- High strength after complete drying, glossiness and filling capacity.
- Resistance to yellowing at high temperatures.
- Good electrical insulation capability, arc and corrosion resistance.

PHYSICAL AND CHEMICAL PROPERTIES

NAME OF PARAMETER AND UNIT OF MEASURE	STANDARD
Appearance	Transparent liquid. Slight opalescence and insignificant impurities due to the container are allowed
Color	Colorless to light yellow
Relative viscosity at a temperature (+20±5)°C by viscometer B3-246 (or B3-4), nozzle diameter 4 mm, s	20 - 50
Mass fraction of non-volatile substances, %	49 - 51
Drying time of the resin film to degree 3 on a copper plate at (+200±5)°C, min, no more	60
Thermoelasticity of the resin film on a copper plate at (+200±5)°C, h, not less	50

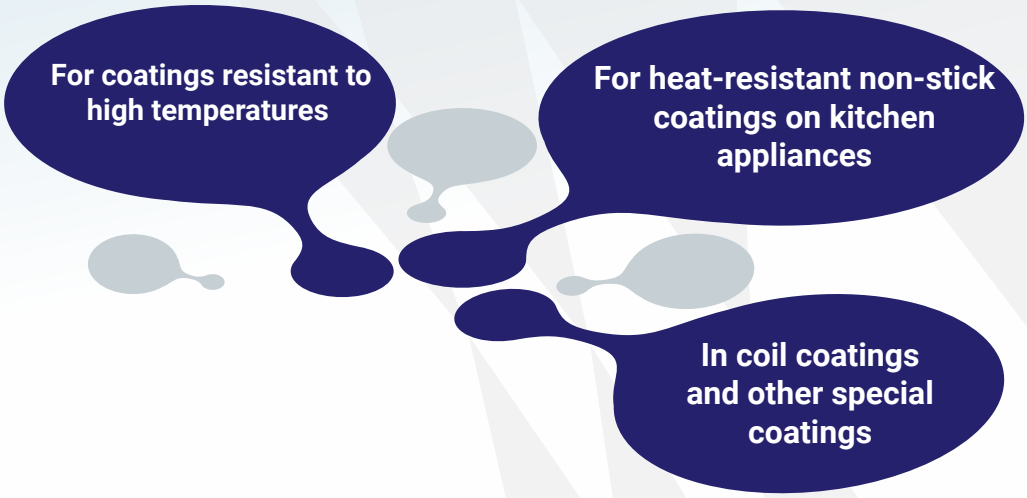
SAFETY INFORMATION The polymerized lacquer coat is nontoxic, fire-safe.
GUARANTEED SHELF LIFE 12 MONTHS

RESIN HunSil SRH 56

FEATURES

HunSil SRH 56 is a thermosetting silicone resin - solution of polymethylphenylsiloxane resin modified with polyester in organic solvents.

APPLICATIONS



Advantages

- Excellent high-temperature and low-temperature resistance, hydrophobicity and moisture resistance, excellent weatherability and chemical resistance.
- High coating hardness and gloss.
- Resistance to yellowing at high temperature.

PHYSICAL AND CHEMICAL PROPERTIES

NAME OF PARAMETER AND UNIT OF MEASURE	STANDARD
Appearance	Colorless transparent liquid.
Time of outflow at (+25.0±0.5)°C, s, measuring cup with a leakage hole diameter of 4 mm	270-600
Mass fraction of non-volatile substances at (+150±2)°C, (60±2) min, (2,0±0,2) g, %	56 - 60
Mass fraction of silicon, %, not less	30
Acid number, mg KOH/g	3 - 6
Hardness of the resin film, not less	5H

SAFETY INFORMATION The polymerized lacquer coat is nontoxic, fire-safe.
GUARANTEED SHELF LIFE 12 MONTHS

KORONA GROUP GEOGRAPHY

Production plants

Trading companies

Representatives

UNISIL™

unisil.eu

HUNGARIAN SILICONES

hungarian-silicones.com

SILKOR chemistry solutions

silkor.com.ua

US Silicon Trading

ussilicontrading.com

KORONA GROUP

koronagroup.com.tr