



COATING RESIN SPECIAL PRODUCTS



VaraCoat; Shellac resin solution

Type	Solid Content [%]	Supply Form [%]	pH value	Viscosity [mPa.s]/20°C	Main uses and characteristics
Yellow-orange coloured solution	3700 SW	approx. 25% white bleached shellac in aqueous potassium hydroxide solution	7.5-8.5	1.000	For wood and paper finishing, french polish, coatings and adhesives, excellent binder for packing material printing inks and overprint varnish with good adhesion on plastic.
	3700 SL	approx. 49% white bleached shellac (dewaxed) in ethanol.		390	
	6421 SW	approx. 30% shellac (dewaxed) dissolved in aqueous potassium hydroxide solution	7.0-7.5	200	
	6421 SL	approx. 50% shellac (dewaxed) in ethanol.		1.000	
Dark solution	6424 SW	approx. 25% shellac DL in aqueous potassium hydroxide solution	7.5-8.0	500	
	6425 SW	approx. 25% shellac DO (dewaxed) in aqueous potassium hydroxide solution	7.5-8.0	500	
	6425 SL	approx. 50% shellac DO (dewaxed) in ethanol		1.000	
	5505 SW	approx. 30% shellac (wax containing) dissolved in aqueous potassium hydroxide solution	7.5-8.0	200	
	5505 SL	approx. 45% shellac (wax containing) in ethanol		2.000	



VaraTac; Rosin-based maleic resins and rosin esters

Product	Melting point Capillary method [°C]	Acid value [mgKOH/g]	Flow time 20°C [s]	Color Gardner	Main uses and characteristics
TAC GM 201	95 – 120	20 – 25	25 – 50 (50% in ws 145-195)	max. 8 (50% in ws 145-195)	General purpose resin for modification of oil, alkyds and paints based up on them, as a cold cut or to be polymerized with oils and alkyds.
TAC GM 203	100 – 125	20 – 25	25 – 50 (50% in ws 145-195)	max. 8 (50% in ws 145-195)	General purpose resin for modification of oil, alkyds and paints based up on them, as a cold cut or to be polymerized with oils and alkyds.
TACK PM 200	95 – 115	15 – 25	25 – 40 (50% in ws 145-195)	max. 8 (50% in ws 145-195)	Low viscosity penta esterified resin for gloss improvement for house and industrial paints and dispersing media for pigment pastes and preparations.
TAC PM 202	100 – 125	15 – 20	30 – 60 (50% in ws 145-195)	max. 8 (50% in ws 145-195)	Penta estrified general purpose resin for decorative, do-it-yourself and industrial paints, also used for furniture adhesives.
TAC MK 223	90 – 110	40 – 50	80 – 120 (60% in ethanol)	max. 8 (60% in ethanol)	With castor oil plastized, for NC-laquers with very good solvent release and sandability.
TAC MS 235	125 – 155	180 – 200	10 – 20 (50% in ethanol)	max. 15 (60% in ethanol)	For alcohol and water-based paints and laquers, flexo and gravure inks, overprint varnishes, compatible with acrylic polymers and NC, soluble in water after neutralization, FDA 175. 105, 175.300.
TAC MS 265	155 – 190	190 – 220	15 – 25 (50% in ethanol)	max. 8	For alcohol and water-based paints and laquers, flexo and gravure inks, overprint varnishes, compatible with acrylic polymers and NC, soluble in water after neutralization, FDA 175. 105, 175.300.

VaraTac for industrial paints, also used for furniture adhesives



VaraSin; Rosin-based hard resins, phenol-modified

Product	Melting point Capillary method [°C]	Acid value [mgKOH/g]	Flow time 20°C [s]	Color Gardner	Main uses and characteristics
VaraSin F 105	90 – 110	15 – 25	20 – 30 (50% in ws 145-195)	max. 10 (50% in ws 145-195)	General purpose type for alkyd-based paints and primers, low viscos resin, giving excellent gloss and rub resistance on cold set inks.
VaraSin F 120	110 – 130	10 – 25	80 – 120 (50% in ws 145-195)	max. 10 (50% in ws 145-195)	General purpose type for alkyd-based paints and primers and for cooking with alkyds, fast setting, high gloss resin for sheetfed inks, compatible with alkyds and natural inks.
VaraSin F 130	120 – 140	15 – 25	120 – 170 (60% in xylene)	max. 10 (50% in ws 145-195)	Cold out modifying resin for paints with good drying properties and high gloss.



Properties of silane-functional polyurethane-urea binders compared to classic two-component polyurethane coatings



Solvent based silane functional polyurethanes for various applications

They allow long processing- and fast drying-times with exceptional resistance properties. Binder for high quality paints as e. g. acrylates, polyester or alkyd resins crosslink with isocyanates or oxidatively.

VaraPur SI; Achieving excellent resistances and fast drying

With the VaraPur SI product family, we offer silane-functional polyurethanes for optimal properties.



Although classical systems for high quality lacquers as for example 2K polyurethane systems which crosslink with isocyanates and oxidatively drying alkyd resins show generally good properties, there are some disadvantages which have to be accepted when using these systems.

Conventional 2K-PUR systems have a relatively short processing time and - depending on the used polyol and amount of isocyanate - a relatively long drying time. Besides, these 2K systems need a second component - an isocyanate - which is affected by labeling issues and needs specific handling.

In comparison, alkyd resins do not need a crosslinker but metal based siccatives for acceptable drying times. Furthermore, the addition of an anti-skinning agent is necessary to get a good storage stability.

The crosslinking process works with air humidity and is accelerated by a specific alkyl phosphate based catalyst. Another particular feature of this system is that ethanol is released during the crosslinking process and not toxic methanol as in comparable systems. In general, these silane functional polyurethanes provide long processing time in combination with fast drying and outstanding resistance properties. In addition, silane functional systems with alkyds as polyols do not need any metal based siccativ or anti-skinning agent and do not show any yellowing tendency. In addition, silane functional systems with alkyds as polyols do not need any metal based siccativ or anti-skinning agent and do not show any yellowing tendency.

Solvent based silane functional polyurethanes for various applications

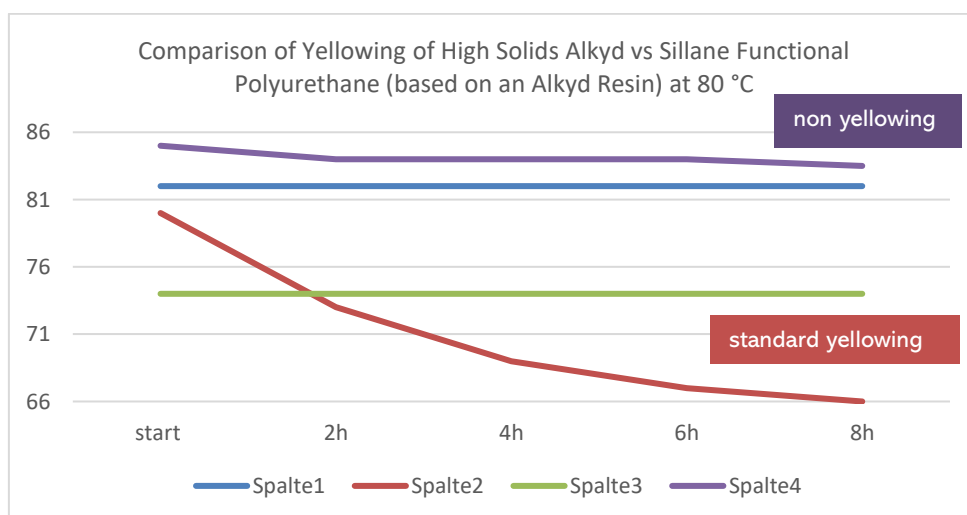
Silane functional polyurethanes based on various polyols allow an optimization of the properties of the previous systems.

Binder for high quality paints as e. g. acrylates, polyester or alkyd resins crosslink with isocyanates or oxidatively.

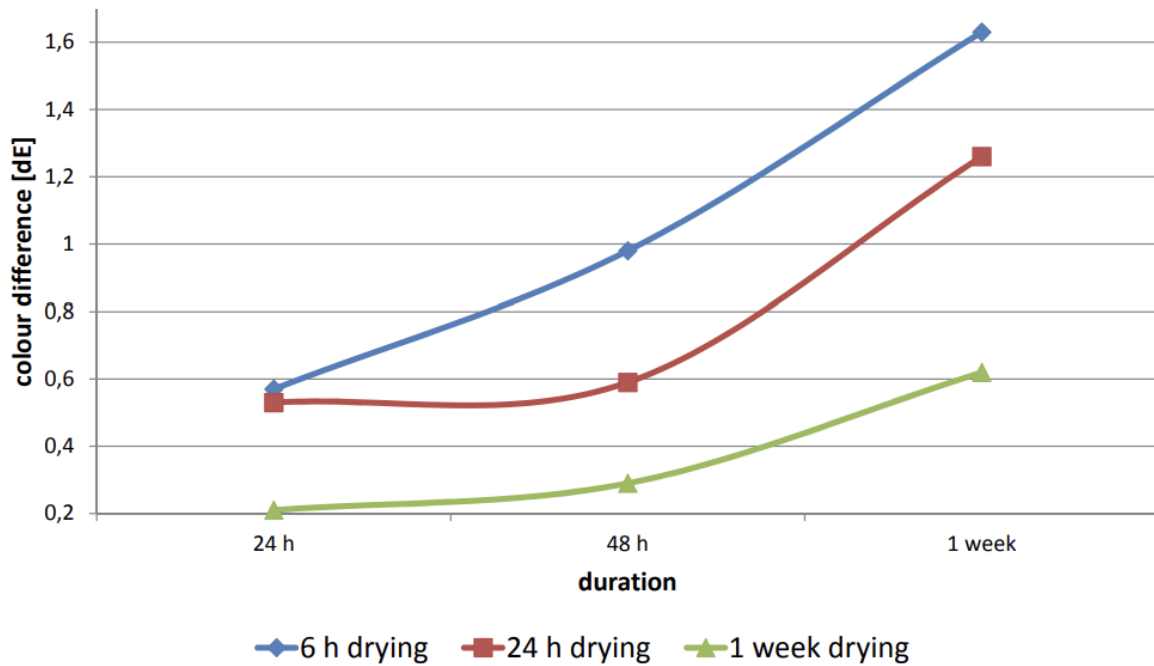


VaraPur SI; Silane functional, aliphatic polyurethane resin

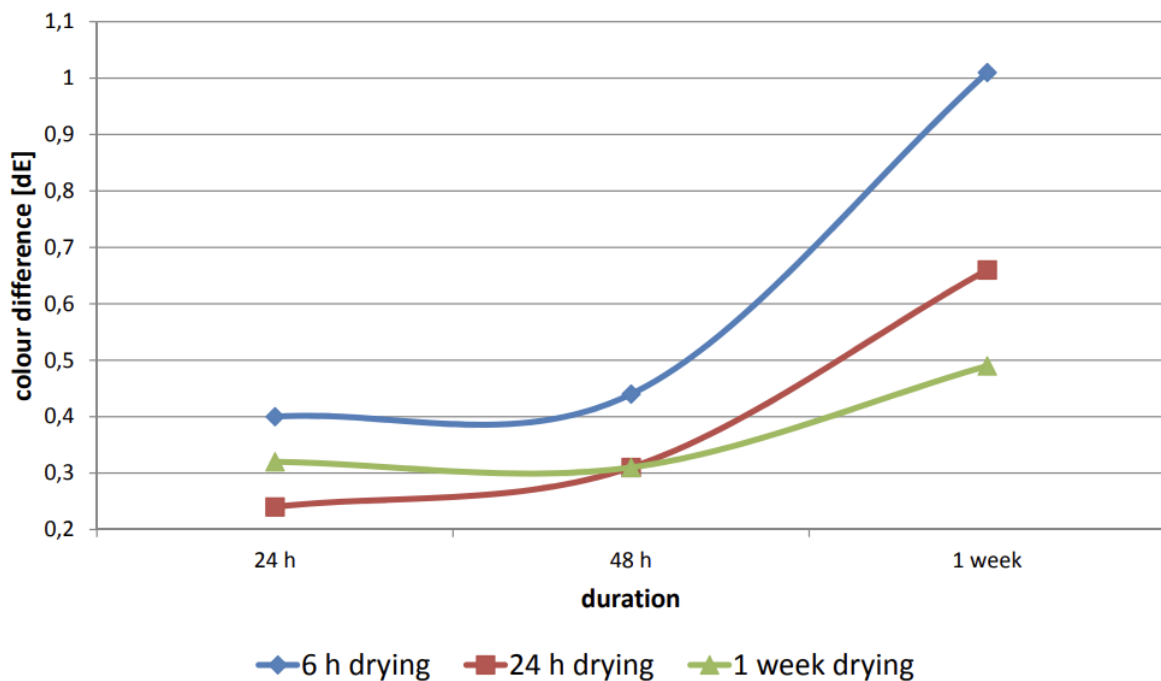
Product	Solvent	Solid [%]	Viscosity [mPa.s]/20°C	Main uses and characteristics
VaraPur SI 101	D60 / Dowanol	75	max. 10.000	A high solid, moisture-curing, silane-modified, aliphatic polyurethane based on a cotton oil fatty acid-based alkyd resin for the formulation of quick-drying primers, pre-, clear- and topcoats in the field of painter and building paints. It is also suitable for formulation of glazes, fast drying and early water resistance, even in difficult climatic conditions.
VaraPur SI 202	BuAC / n-propanol	75	max. 25.000	A high solid, moisture-curing, silane-modified, aliphatic polyurethane based on an aliphatically branched polyester to the formulation of primers for wood, clear and topcoats, which at room temperature or forced to dry, in any case, lacquers based on VaraPur SI 202 dry very quickly and reach within a short time a high hardness and very good resistance properties.
VaraPur SI 203	BuAC / n-propanol	75	max. 20.000	High solid, moisture-curing, silane-modified, aliphatic polyurethane based on an aliphatically branched polyester to the formulation of clear and topcoats, which dry at room temperature or forced.,also the formulation of stoving enamels is possible. In any case, paint based on VaraPur SI 203 very fast and achieve very good in no time resistance properties.
VaraPur SI 204	BuAC / n-propanol	75	max. 25.000	A high solid, moisture-curing, silane-modified, aliphatic polyurethane based on an aliphatic branched polyester suitable for the formulation of base coats for wood-, clear- and topcoats, forced drying or at room temperature. In any case, paints based on SI 202 dry very quickly and achieve a high hardness and very good resistance properties within shortest time.
VaraPur SI 206	BuAC / n-propanol	60	max. 15.000	A high molecular, moisture-curing, silane-modified, aliphatic polyurethane, based on an aliphatic branched polyester, suitable for the formulation of clear- and topcoats, at room temperature or forced drying. Due to the higher molecular weight it is characterized by a very good physical drying. The equally fast chemical crosslinking leads to high resistances, which are achieved after short times.
VaraPur SI 249	BuAC / Ethanol	70	max.5.000	One-component, moisture-curing, silane-modified, aliphatic polyurethane based on a linear polyester, for quick-drying and resistant clear and topcoats. Especially good adhesion is achieved on ceramic substrates and glass.
VaraPur SI 401	BuAC / n-propanol	80	max. 25.000	Moisture-curing, silane-modified, aliphatic polyurethane based on a linear carbonate diol, to the formulation of base, clear and topcoats, which dry at room temperature or forced. Also the formulation of baked enamels is possible. In any case, paint based paints from US 401 very fast and achieve very good in no time resistance properties. Varnishes based on VaraPur SI 401 dry to viscoplastic films with good scratch resistance, good adhesion to various substrates can be achieved, this could be e.g. glass, ceramics, concrete, but also iron and non-ferrous metals.
VaraPur SI 402	KW 180-220 / DPM	75	max. 75.000	Moisture-curing, silane-modified, aliphatic polyurethane based on a linear carbonate diol, for the formulation of primer, clear and topcoats, which dry at room temperature. In any case, dry varnishes based on SI 402 are very fast and reach within a very short time very good resistance properties.
VaraPur SI 501	BuAC / n-propanol	75	max. 10.000	Moisture-curing, silane-modified, aliphatic polyurethane based on a linear polyether polyol, formulation of base, clear and topcoats, which dry at room temperature or forced. In any case, lacquers based on VaraPur SI 501 dry very quickly and reach within very short time very good resistance properties. Varnishes based on SI 501 dry to very elastic, rubber-like films good scratch resistance, good adhesion to glass, ceramics and concrete.
VaraPur SI 584	BuAC / n-propanol	78	max. 10.000	Silane-modified, aliphatic polyurethane based on linear polyetherpolyol, good adhesion to various substrates can be achieved, this could be e.g. glass, ceramics, concrete, but also iron and non-ferrous metals.



VaraPur SI 401
Water resistance / water immersion test



Salt water resistance / salt water immersion test 0.5%



Adhesion: • tested and good adhesion on steel, aluminium, galvanized steel, ceramic tiles, concrete

VaraTect; Inorganic-organic hybrid systems

Product	Appearance	Supply Form [%]	Application	Viscosity [mPa.s]/20°C	Main uses and characteristics
VaraTect 1107	Clear, slightly yellowing liquid	42 in ethanol	Spraying, dipping, flooding, wiping	max. 100	Thin layer clear coat with excellent anti graffiti-/easy-to-clean-effect on glass, metals, old paint layers (grind by using an abrasive pad), drying at room temperature, forced or by stoving.
VaraTect 1119	Clear, slightly yellowing liquid	42 in n-propanol	Spraying, dipping, flooding, wiping	max. 30	Thin layer clear coat with excellent anti graffiti-/easy-to-clean-effect on glass, metals, old paint layers (grind by using an abrasive pad), drying at room temperature, forced or by stoving.
VaraTect 1181	Clear liquid	30 in solvenon DPM/MPA	Spraying, dipping, flooding, wiping	max. 30	Two component thin layer clear coat with VaraTect 1119 / 1107, used with catalysts as a sole binder, high abrasion- and scratch resistance, good chemical resistance, excellent mar resistance and anti graffiti-/easy-to-clean-effect.
VaraTect 1126	Clear, slightly yellowing liquid	42 in ethanol	Spraying, dipping, flooding, wiping	max. 100	Thin layer clear coat with excellent anti graffiti-/easy-to-clean-effect on glass, metals, old paint layers (grind by using an abrasive pad), drying at room temperature, forced or by stoving, excellent scratch resistant.

A High Performance Thin Film Barrier



VaraTect PROTECT

against unwanted graffiti

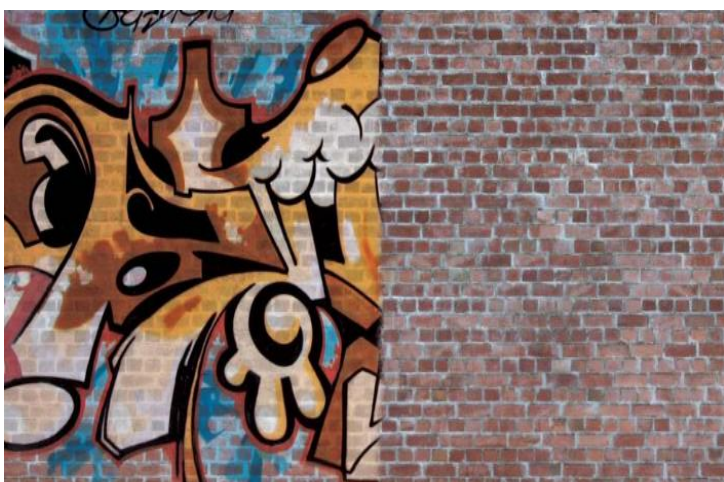
GraffitiProtection

VaraTect AG 440



VaraTect AG 440 is a facade sacrificial layer to protect against graffiti. It is applied to the facade to be protected and after a drying time of 8 hours it is sealed. After the masonry has been treated, AG 440 prevents the colors from combining with the masonry or plaster, for example. The dirt can easily be removed with a weakly alkaline cleaner. Penetration of the paint onto the substrate is reliably prevented.

AG 440 is used where a facade, monument or masonry is to be protected from property damage with paint.



Benefits

- Large-pored wall plaster, concrete surfaces and natural stone surfaces can be protected from graffiti paint contamination with this emulsion
- it is UV-stable and can be used both indoors and outdoors
- the product is free from harmful solvents

VaraTon; Styrene-butadien-copolymer

Product	Supply Form [%]	Viscosity [mPa.s]/23°C	Molecular weight	Main uses and characteristics
N4-100-MA	49-59	600 – 900	8200	Low odour binding agent in aqueous adhesion promoter in automotive sealants, soft, isocyanate free electrical encapsulants, rubber to metal bonding and formulation of slow release fragrance gels.
AL-150-MA	68-80	1.500 – 6.000	1000	Low odour binding agent in aqueous adhesion promoter in automotive sealants and semi structural adhesives, rubber to metal adhesion promoter and electrical encapsulants.
N4-500-MA	70-78	1.200 – 2.200	5750	Soft, isocyanate free electrical encapsulants, adhesion promoter in automotive sealants, rubber to metal adhesion promoter and impact modifier for polyester resins.



Electrical encapsulating resins

- High dielectric strength and electrical resistivity, thermally stable achieving class H performance
- Very hydrophobic polymers for excellent protection of electrical components
- Maleic anhydride functional **VaraTon** provides a non-hazardous alternative to isocyanate based polyurethane encapsulants.

VARENA CHEMICAL is a global company in the intermediates, coating, adhesives, inks and composite and solid surface resins, thermoset compounds, gelcoats and niche specialties and specialty additives for coatings and inks.

VARENA CHEMICAL is known for its superior quality and impressive range of products and with its excellent distribution network it can provide first-class service to customers whatever their market. Customer Service and Technical Service teams are renowned for their customer focus, offering the best service even after products have left manufacturing.

The group strives to keep customers satisfied, assisting them in producing premium quality products every time they use its products.



Product innovation is important for the group's business and it's the reason for which it constantly works with customers to find solutions to problems.

Introducing new or improved products ensures that VARENA CHEMICAL continue not only to deliver what the market wants and needs, but also when it is wanted and needed.



INNOVATIVE TECHNOLOGIES FOR RESINS & ADDITIVES
DR. IRANKHAHI CHEMICAL COMPANY