



The Science of Reliable Adhesion

ADHESIVE & SEALER TECHNOLOGIES

ALSYNOL UV-TAC & ALSYNOL UV-MELT

VaraMul & VaraDex Emulsions

ADHESIVE AND SEALER TECHNOLOGY

Solvent-based acrylate adhesives

This product range consists of solvent-based adhesives (PSAs) in organic solvents. Depending on the requirement and customer wishes, these are either in the form of pure acrylate adhesives or formulations modified with resins and/or crosslinking agents. This enables tailor-made property profiles, such as in relation to adhesive strength and shear strength, to be achieved. The table depicts the typical representatives of this product class in our portfolio.

PSAs



Solvent-free acrylate adhesives

Our hotmelts are solvent-free systems, which are melted by the administration of heat and then applied. Depending on the requirement, either pure acrylate-based hot melts or formulations modified using resins and/or plasticisers can preferentially be used. The performance of our hot melts can be individually varied to fulfil the requirements for the relevant operating range.

Label



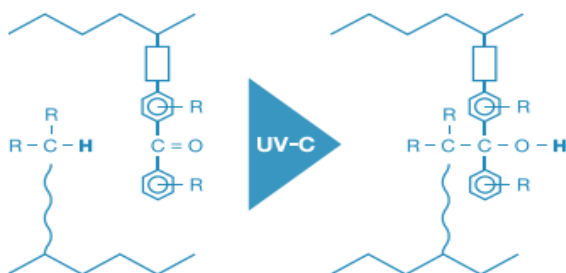
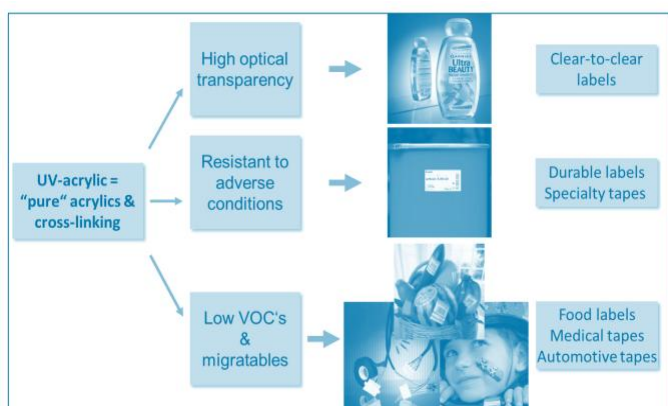
Acrylate-UV adhesives are resins which polymerize and therefore cure under UV light. These products are used mainly in industrial settings because they cure within seconds, allowing a high production output.

UV adhesives can be cured with both UV gas discharge lamps and UV LED lamps. Unlike LED light sources, which emit monochromatic light, gas discharge lamps have a broad light spectrum. For curing adhesives, the UV portion at different wavelengths within the light spectrum of gas discharge lamps is used at the same time, while the light spectrum of LEDs is limited to a specific wavelength. Some special acrylates also cure under visible light. These are used, for example, for bonding UV-impermeable plastics.



Significant sustainability benefits

Adhesive tapes and labels produced with **ALSYNOL ADHESIVES** are characterized by minimal VOCs and odor. As a more sustainable alternative to solvent-based raw materials, they are particularly suitable for sensitive applications and can even be used in the medical and food sectors.



Adhesive for durable labels:

ALSYNOL ADHESIVES versus solvent-based acrylics.

When it comes to durable labels, performance is everything. Typical requirements include resistance to chemicals, high temperatures and weathering.



Easy, cost-efficient curing

ALSYNOL ADHESIVES can be processed on hotmelt coaters equipped with UV lamps. No solvent or water needs to be removed because it is 100% acrylate. This increases the cost-efficiency of processing significantly.

Easy, cost-efficient curing

When irradiated with UV-C light, the potentially reactive groups attached to the chains from crosslinks with neighboring reaction is instantaneous, but remains easy to control it stops as soon as the UV-C radiation is removed.

Photoreactive crosslinking

The photoreactive groups in the **ALSYNOL** Resins attack the C-H bonds present in neighboring chains, resulting in the crosslink structure typical of pressure-sensitive adhesives. UV-C sensitive photoreactive groups are an integral part of the polymer and therefore non-volatile, which explains why no products of potential toxicological concern are released.

MEDICAL



ALSYNOL ADHESIVES

brand is the **BEST CHOICE** for engineered, high-performance adhesive, sealant and coating solutions.

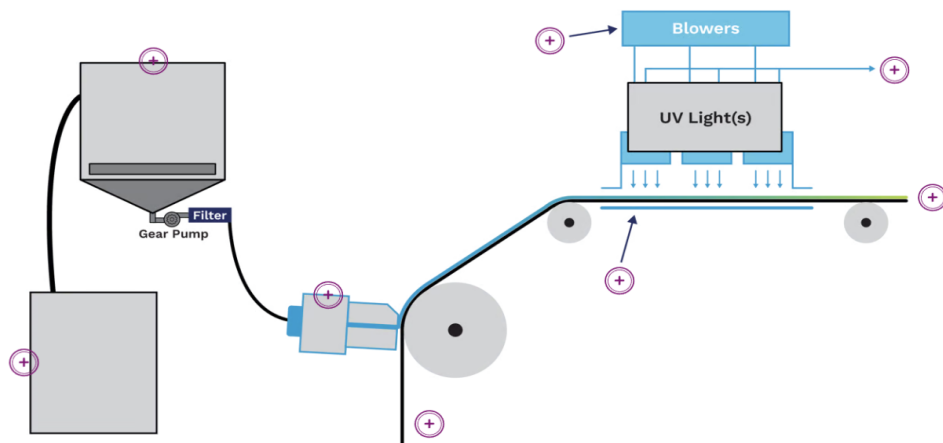
Performance Polymers produces a range of UV-curable (or “warm melt”) acrylic adhesives for a variety of specialized pressure-sensitive tape, label and graphics applications. This relatively new adhesive technology allows for solvent-free acrylic adhesives to be coated on equipment originally designed for hot melt adhesives. With the simple addition of a UV curing station, almost any existing hot melt coater can be retrofitted to coat these adhesives.

This is a selection of the main UV-crosslinkable Acrylic Hotmelts for the [pressure-sensitive adhesives](#) sector. UV curable hotmelt is the best alternative to solvent-borne Acrylic PSA.

The fields of application cover a wide variety of technical uses, including tapes, labels and medical industries. While keeping the same performance of solvent-based products, it eliminates the need to evaporate, burn or recover the solvents at the coating line. The solvent is recovered and reused several times directly at our production plant, thus greatly reducing environmental impact and increasing sustainability.

Moreover, UV hotmelt adhesives offer an outstanding combination of versatile properties thanks to the easier adhesion and cohesion balance controlling, while maintaining appreciated properties of the solvent based products, like transparency, resistance to ageing and to water and chemical agents.



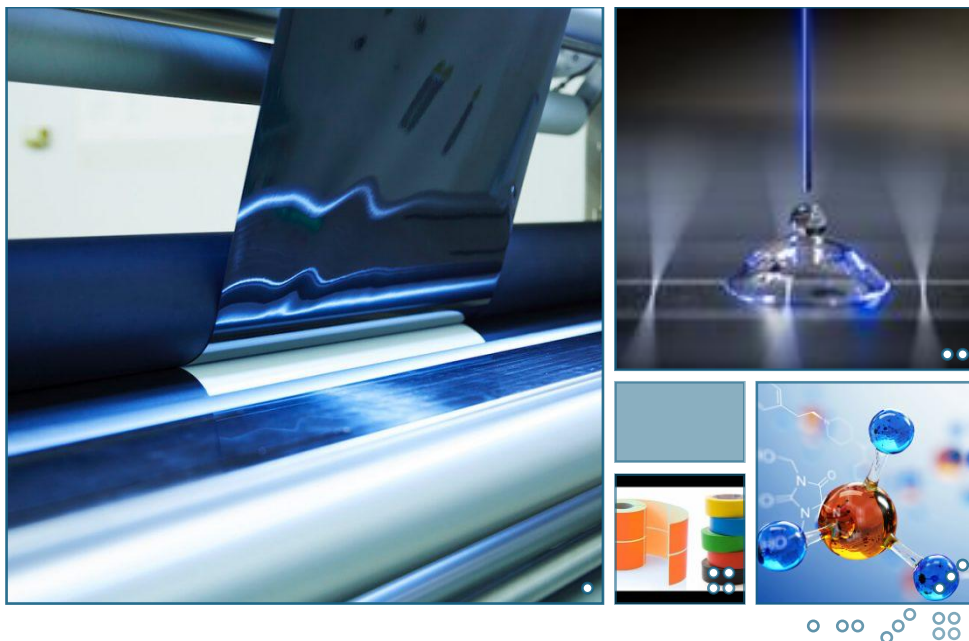


UV acrylic PSAs will require minimal capital investment.

While UV acrylic PSAs and rubber-based hot melt PSAs are based on different chemistries, they require similar equipment. This is because they are both hot melt technologies that are comprised of 100% solids.

Application benefits

- Wide range of adhesive properties covered by specially designed product grades
- Efficient upscaling on our pilot coater with the support of our technical experts



Polymers/Adhesives

As one of the biggest producers of acrylate-based, pressure-sensitive adhesives for the labelling and adhesive tape industries, as well as for sealing materials, we possess a great deal of experience in the manufacture of polymers. In particular, our product range includes solvent-based and solvent-free hotmelt adhesives. We also produce polyacrylates for the paint industry and polymer additives for all types of industrial applications, etc.

Additionally, we are environmentally conscious: Our hotmelt adhesives work without any solvent at all. They are free of any volatile components right during the manufacturing process, making them exceptionally environmentally friendly. As a result, we spare the customer complex drying processes and contact with flammable solvents. Furthermore, the characteristics of our hotmelt adhesives are in no way inferior to those of solvent-based systems.

Whether you require a product that is highly shear resistant, highly adhesive, permanent or repositionable - we will be happy to develop a customised adhesive solution to meet your needs. If a new development results in a unique product for a niche application: Even better for you.

In addition to producing bulk goods, we happily accommodate custom product specifications. Our products can be delivered in barrels, as well as in heatable stainless steel containers. Our ideally situated location in Bitterfeld-Wolfen Chemical Park means that production capacity is guaranteed.

Well-known manufacturers of self-adhesive products throughout Europe have learned to appreciate our vast experience and high standards of product quality. They count on us. And soon you will, too!

Choose zero VOC for future – with ALSYNOL UV-MELT !

Acrylic adhesives are of moderate costs and show the particularity to have good adhesion to many substrates (glass, metals, paper, textiles, metallic foils, and plastics).





UV-hotmelt for medical skin applications

With the acrylic pressure-sensitive adhesive [ALSYNOL UV-TAC](#) and [UV-MELT](#), the VARENA CHEMICAL has integrated a product for medical applications (e.g. patches, electrodes, measuring probes, wearables, etc.) that has been tested for skin contact. The UV hotmelt was tested for cytotoxicity at a renowned testing institute and certified as non-cytotoxic (ISO 10993-5: 2009). By the way, the products [ALSYNOL UV-MELT 204](#), [ALSYNOL UV-MELT 250](#) and [ALSYNOL UV-MELT 260](#) were also examined and declared as non-cytotoxic.

Acrylic soft resin ALSYNOL UV-MELT 125

The VARENA CHEMICAL has expanded its product portfolio with an acrylate-based soft resin. [ALSYNOL UV-MELT 125](#) is a solvent-free, highly viscous, transparent and sticky liquid. It can be used as an adhesion-improving additive in solvent-based, solvent-free and dispersion adhesives. The excellent dispersibility can be attributed to the composition of the acrylate copolymer. Due to the comparatively low molecular weight of this polyacrylate, it is very well suited for setting tack and low-temperature flexibility. In addition, [ALSYNOL UV-MELT 125](#) is suitable for modifying lacquers and plastics. It can be used as a plasticizer (alone or in combination), e.g. in sealants. Migration of the plasticizer is not to be expected due to the macromolecular structure. As a pure acrylate, it is characterized by excellent resistance to external environmental influences and excellent aging stability. Thus, in addition to [ALSYNOL UV-MELT 105](#) and [ALSYNOL UV-MELT 135](#), a new acrylic soft resin is now available by VARENA CHEMICAL.

Food Contact Suitability

Four ALSYNOL UV-MELT & UV-TAC products ([ALSYNOL UV-MELT 204](#) , [250](#), [260](#) and [3532](#)) are covered under the European Framework-Regulation (EC) No 1935/2004, the European GMP-Regulation (EC No. 2023/2006, the European Biocides-Regulation (EU) No. 528/2012 and §§ 30 and 31 of the German Food and Feed Ordinance (BGBI No. 55 of 06.09.2005), including all respective amendments valid at the date of issue and as such, are intended for use as a component of UV-cured pressure-sensitive adhesives used at the food-contact surface of labels and/or tapes.

UV-MELT hotmelt for high-performance applications

The large variety of hotmelts available on the market offers the user the opportunity to find a suitable adhesive solution for almost any desired requirement profile. Nevertheless, there are always application areas in which, in particular, UV hotmelts are distinguished by limitations such as insufficient peel strength on conventional substrates (e.g. glass, steel) or a loss of shear strength at higher temperatures. Especially the latter is a decisive criterion in the performance of the hotmelts, as a permanent bond should be guaranteed not only at moderate temperatures, but also especially at application temperatures in the range of 30 - 70 °C.

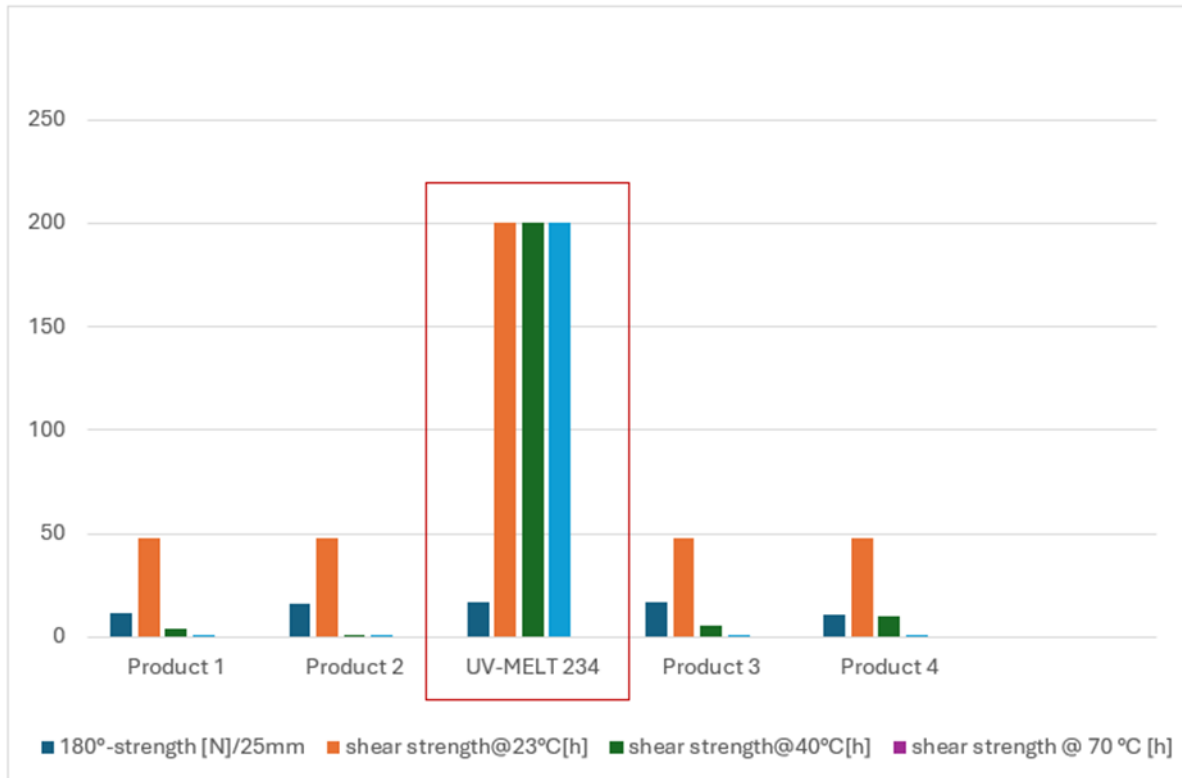
VARENA CHEMICAL has managed the task to create a permanent acrylic-base adhesive whose performance is equal to a solvent-based adhesive. Our new product [ALSYNOL UV-MELT 234](#) is an environmentally friendly UV-curable Polyacrylate, working completely without any solvent.

To convince the user of the outstanding performance of the new VARENA CHEMICAL [ALSYNOL UV-MELT 234](#) we compared the peel (adhesion) and shear (cohesion) of [ALSYNOL UV-MELT 234](#) with typical representatives of UV hotmelts (*Product 1 – 4*) available on the market.

Product	180°-Peel adhesion stainless steel N/25mm	Shear strength @ 23 °C, 1 kg	Shear strength @ 40 °C, 1 kg	Shear strength @ 70 °C, 1 kg
Product 1	11,7 (AF)	>48,0 h	3,5 h	< 1 h
Product 2	16,1 (AF)	>48,0 h	1,0 h	< 1 h
UV-MELT 234	17,0 h	>200,0 h	>200,0 h	>200,0 h
Product 3	17,0 (AF)	>24,0 h	6,0 h	< 1 h
Product 4	10,9 (AF)	>48,0 h	10,1 h	< 1 h

The already existing VARENA CHEMICAL hotmelt *Product 1* exhibits a high shear strength at room temperature comparable to the values of competitive adhesives.

Indeed, the shear values of the PSAs *Product 1 – 4* decrease gradually with increasing temperature and finally, at 70 °C the remaining cohesion they have at this temperature is much lower than necessary anyway. The peel values of the tested competitive products are in a typical range.



Our new product [ALSYNOL UV-MELT 234](#) exhibits an excellent peel adhesion in the range of 17 to 19 N/25mm. At this, the PSA shows an entire adhesion failure on stainless steel as well as on glass, even after the prepared test specimen were stored for several days at room temperature.

Characteristic for this pressure sensitive adhesive is beside the excellent peel adhesion the outstanding shear strength – and this not just at room temperature but also especially at higher temperatures (see graphic). Reproducible static shear strength values of more than 200 hours at 40 °C and even at 70 °C are beyond impressive.

To compare: typical products on the market with a shear strength of more than 48 hours at room temperature exhibit low peel values and a significantly lower cohesion at higher temperatures – and especially the latter one is the aspect that definitely highlights our new [ALSYNOL UV-MELT 234](#).

A sophisticated balance of conspicuous peel adhesion and extremely high shear resistance opens up the way to use the new [ALSYNOL UV-MELT 234](#) for applications in areas where existing classic hotmelt formulations fail due their limits in peel and shear.

ALSYNOL UV ACRYLIC ADHESIVE; PU DISPERSION

Product	Characteristics	Solid Content [%]	Viscosity [mPa.s]	Application
ALSYNOL UV 1000	Acrylic polymer	100	8.000 – 12.000 / 140°C	Removable adhesives
ALSYNOL UV 1001	Acrylic modified polymer	100	1.500 – 2.500 / 140°C	UV-adhesives, adhesive for the tapes, labels and graphics industry.
ALSYNOL UV 1002	Acrylic modified polymer	100	3.000 – 4.000 / 140°C	UV-adhesives, adhesive for the tapes, labels and graphics industry.
ALSYNOL UV 4605	Acrylic copolymer	100	-	UV acrylic range comprises high-resistance adhesives for numerous label applications, including clear labels, general purpose permanent labels, removable & reclosable labels and specialty labels.
ALSYNOL UV 2117	Ester of hydrogenated rosin	100	1.500 / 120°C	Adhesives / sealants- b&c, bookbinding, caps & lids-food content, carpet construction.
ALSYNOL UV 4305	Cyanacrylate	100	-	For plastic, metal, paper, very rapid fixturing, UV light cure properties.
ALSYNOL UV 9533	Acrylic modified copolymer	100	18.000 – 22.000 / 20°C	Automotive, building construction, adhesives for numerous label applications,
ALSYNOL UV 2677	Acrylic copolymer	100	1.000 – 2.000 / 20°C	UV-adhesives, for adhesives medical applications, adhesive tapes and labels.
ALSYNOL U 165	Anionic, hochmolecular polyurethane dispersion	50 in water	50 – 900	For the formulation of thermally activated adhesives for use in, for example, the automotive, furniture, shoe and construction industries.
ALSYNOL K 2525	Acrylic modified	42 in iso-propanol	3.000 – 6.000 / 20°C	For general applications.
ALSYNOL 2115	Acrylic copolymer	100	17.000 – 27.000 / 130°C spindel 27, 4 UpM	UV-curable, acrylic pressure sensitive hotmelt for labels and transparent film labels (no label look). Recommended working temperature: 120 to 130 °C.

Tapes, Labels, Graphics

Sustainability and security are key elements of tape and label applications.

ALSYNOL UV

The UV-curable 100 percent acrylic hotmelt features significant sustainability benefits, while providing excellent adhesive performance.



ALSYNOL TAC ACRYLIC ADHESIVES; PSA's & LABEL

Product	Characteristics	Solid Content [%]	Viscosity [mPa.s]	Application
TAC 4185	Acrylic polymer	52.5	2.000 – 5.000 / 20°C	Pressure-sensitive adhesive, (PSAs).
TAC 235	Acrylic modified polymer	30	1.500 – 3.500 / 20°C	Pressure-sensitive adhesive, (PSAs).
TAC 303	Acrylic modified polymer	39.5	2.000 – 5.000 / 20°C	Adhesive for the tapes, labels and graphics industry.
TAC 380	Acrylic copolymer	42	3.000 – 6.000	Industrial pressure-sensitive adhesive, (PSAs).
TAC 204	Acrylate polymer	solvent free	20.000 – 30.000 / 150°C	Solvent-free, UV-hotmelt adhesive, Automotive.
TAC 234	Acrylate polymer	solvent free	30.000 – 40.500 / 150°C	Solvent-free, UV-hotmelt adhesive. Automotive.
TAC 250	Acrylate polymer	solvent free	20.000 – 30.000 / 150°C	Solvent-free, UV-hotmelt adhesive, Automotive.
TAC 260	Acrylate polymer	solvent free	20.000 – 30.000 / 23°C	Solvent-free, UV-hotmelt adhesive, PSAs, Automotive.
TAC 105	Acrylate polymer	solvent free	20.000 – 30.000 / 23°C	Solvent-free, hotmelt adhesive, PSAs, it is very well suited for setting tack and low-temperature flexibility.
TAC 3532	Acrylate polymer	solvent free	20.500 – 50.500 / 23°C	Solvent-free, hotmelt adhesive, PSAs.
TAC 9500	Acrylate polymer	solvent free	10.500 – 20.500 / 100°C	Solvent-free, UV-hotmelt adhesive, PSAs.
TAC 500	Acrylic modified polymer	78	5.000 – 10.000 / 20°C	Hotmelt, Automotive.

UV Adhesives and Sealants/ Light Cure Adhesives and Sealants

ALSYNOL ultra-violet light cure adhesive products are used in the production of glassware, glass furniture, acrylic glass, and for the optical industry and medical technology fields.



ALSYNOL Adhesives Meet Every Challenge

UV Curing of Adhesives

UV curable adhesives are used for bonding parts and for pressure sensitive adhesives offering an environmentally friendly, high production rate curing process for manufacturers making tapes, labels, medical devices, electronic components and more.

ALSYNOL UV is highly durable and resistant to aging. This makes it the ideal solution for developing labels and tapes for **automotive applications**.

Benefits:

- ✓ High durability
- ✓ High resistance to aging
- ✓ Low VOC and low fogging
- ✓ Minimal migrating ingredients

ALSYNOL UV is food safe and offers excellent clarity. This makes acResin® the number one choice for the production of paper and filmic **labels for food, beverage and cosmetics applications**.

Benefits:

- ✓ Excellent clarity of adhesive film
- ✓ Resistance to humidity
- ✓ Resistance to water whitening
- ✓ Food safe

ALSYNOL UV products offer substantial sustainability benefits, and are therefore the ideal choice for the production of **medical tapes**.

Benefits:

- ✓ Latex-free
- ✓ No organic solvents
- ✓ Minimal migrating ingredients
- ✓ Compliant with ISO 10993-5/-10 (biological evaluation of medical devices)
- ✓ Not cytotoxic
- ✓ No skin irritation
- ✓ Anti-allergenic

ALSYNOL UV is long-lasting and resistant to humidity, making it the perfect choice for developing pressure-sensitive adhesives for **construction applications** such as single-sided and double-sided tapes.

Benefits:

- ✓ High durability
- ✓ Resistance to humidity
- ✓ High resistance to aging
- ✓ Resistance to water whitening



UV Bonding

UV curable (light-curing) bonding acrylic adhesive formulations require no heat and shorten customer lead times, improving competitiveness and profitability. UV bonding acrylic adhesives are available in a range of viscosities and chemical systems.

They are an ideal choice for a variety of substrates and joining dissimilar materials such as plastics, metals and glass. UV bonding adhesives exhibit excellent thermal stability, low shrinkage, optical clarity, resistance to thermal cycling, chemicals, moisture, and solvents while meeting safety, health and ecological concerns. Some are even biocompatible for medical use. For parts with shadow areas, a secondary heat cure ensures complete bonding.

Typically precision dispensing equipment and UV curing enables manufacturers to automate their component and part assembly processes which significantly increases production rates and quality. UV bonding finds wide use in the automotive industry, medical devices, electronics, aerospace, and many others that require fast, reliable and consistent curing.

VARENA offers a broad range of adhesive polymers for various self-adhesive applications. Perfectly tailored to the individual requirements and working conditions. In addition to the substrates to be bonded, many other things have to be considered such as temperatures, influence of chemicals, solar radiation and much more.

Innovative solutions for water-based adhesive raw materials

VaraMul; ACRYLIC RESINS; WATER-BASED DISPERSIONS

Product	Monomer	Supply Form [%]	pH value	MFFT [C°]	Viscosity [mPa.s]/20°C	Main uses and characteristics
VaraMul AE 1104	Copolymer dispersion	60 in water	2.5 - 5.0	0	max. 2.000	A soft copolymer dispersion with a high solids content, for pressure-sensitive adhesives (labels, adhesive tapes) or as co-binders in other aqueous adhesive, good adhesion on difficult surfaces, flexible and self-adhesive film.
VaraMul AE 1189	Methacrylic copolymer emulsion	49 in water	7.0 – 8.0	16	Max. 200	For flagstone- and building adhesives. The product features a high initial adhesion and a very fast setting. VaraMul AE 1189 can also be used for the production of sealing compounds.
VaraMul AE 1126	HS acrylate dispersion	62 in water	5.5 - 6.5	0	max. 1000	AE 1126 is designed for waterborne adhesive for the lamination of flexible structures that come in contact with food. , with outstanding characteristics: high-elastic and transparent.
VaraMul AE 1273	Methacrylat copolymer dispersion	52 in water	7.0 - 8.0	13	max. 300	A binder for the production of cementitious coatings as well as tile adhesives and building adhesives. It is characterized by high initial adhesion and fast setting. Excellent alkali and cement compatibility and high flexibility.
VaraDex 5545	Acrylic dispersion	50 in water	4.0 – 6.0	3	50 – 300	APEO-free polymer emulsion, as sole component of the formulation at 80 °C a sealing is achieved.



VaraMul for pressure sensitive specialty tape and graphic arts



Adhesive Performance

UV cured PSAs share many common characteristics with solvent-based adhesives. With the exception of a lower shear level, the adhesive performance tends to be similar to traditional solvent-based adhesives. In addition, these adhesives also offer a good resistance to heat, moisture and chemicals, although not to the level of a solvent-based adhesive.

The main benefit of these UV adhesives over solvent-based adhesives is extremely low levels of VOCs and odors. Since they are made without solvents or other potentially hazardous process aids, they are a particularly good fit for applications in strict regulatory environments like medical or automotive applications.

In addition to standard adhesives, the challenging nature of UV cured PSA applications often requires specifically formulated, customized adhesive solutions. Working closely with our customers, our scientists and engineers can quickly adjust existing adhesive platforms or develop new polymer systems to address the most complex challenges.

VaraDex PI 5545

APEO-free polymer emulsion, for blister lacquers and heat sealing.

VaraDex heatseal Dispersions - individual and reliable

The number of water-based adhesives for flexible packaging systems is steadily increasing worldwide. Heatseal dispersions from VaraDex PI 5545 do **not contain any solvents** or **phthalates**. They offer excellent processing properties and a **maximum of product safety**. VaraDex PI 5545 heatseal dispersions can be applied by pump in circulation or feed on demand. They can be processed in gravure, flexo or offset printing as well as on laminating machines. The excellent moistening ensures an **optimum print result**, even with the smallest contact points.

VaraDex heatseal dispersions are characterized by a high solid content. This enables drying temperatures of **less than 60°C**— ideal for shrink sleeve finishing. Activation temperatures $\geq 75^{\circ}\text{C}$ provide reliable adhesion on many plastics, glass, metal and even wood. Furthermore most of our heatseal dispersions are **completely block-free** – even against themselves. Suitable substrates are PP, PET, PS and PVC. Also sealable paper can be produced.

Heat seal coatings for reliable and user-friendly packaging



VaraMol PU; Flexible Polyurethane Adhesive

Like epoxy, polyurethane is a thermosetting polymer and considered a high performance adhesive. It is commonly known as urethane for short, though that it is technically incorrect.



VaraMol PU; SOLVENT-FREE PU -ADHESIVES

Product	Supply Form [%]	Viscosity [mPa.s]/23°C	Acid Value [mgKOH/g]	OH-Value [mg KOH/g]	Main uses and characteristics
PU 450	Solvent-free	3.000 – 4.000	≤ 2	150-170	PU 450 is a solvent-free, branched polyol with ester and ether groups. It can be combined with DESMODUR L to formulate highly resistant sealing compounds.
PU 400	Solvent-free	2.500 – 3.500	≤ 2	220-240	A low viscous and solvent-free branched polyol with ester and ether groups and is mainly used for the formulation of solvent-free coatings, sealings and adhesives in combination with modified polyisocyanates.
PU 1180	Solvent-free	18.000 – 23.000	≤ 3	72	In combination with Desmodur for the production of highly flexible 2-K adhesives for glossy foil lamination and for softfeel coatings, high flexibility.



ALSYNOL U 165

Aqueous, low viscous, anionic high-molecular-weight solvent-free polyurethane dispersion.

Technical Data:

	Value	Unit	Test Method
Non-volatile content, 1h/125 °C	50 ± 1	%	DIN EN ISO 3251
Viscosity, Rheometer, 20 °C	max. 900	mPa.s	DIN EN ISO 2555
pH-value	6.0 – 9.0	-	DIN ISO 976
Delivery form	50% in water		

Application and Properties:

ALSYNOL U 165 is a raw material for the formulation of thermally activated adhesives for use in, for example, the automotive, furniture, shoe and construction industries. ALSYNOL U 165 is particularly well suited for applications with low thermal activation temperatures and is therefore particularly well suited for use on temperature-sensitive substrates.

For heat activation bonding applications with ALSYNOL U 165, a bond line temperature in the range of approx. 55 – 65 °C or even higher is recommended to allow the dried adhesive layer to be fully activated for bonding. The actual temperature needed for a specific application will depend on the time in the press, the pressure applied and the substrates being bonded.



ALSYNOL VAE 1602

Vinyl acetate-ethylene (VAE) technology offers outstanding benefits in terms of performance, safety and versatility. ALSYNOL VAE 1602 dispersions are waterbased co- and terpolymers mainly based on vinyl acetate and ethylene as comonomers.

ALSYNOL VAE 1602 is an aqueous emulsion of a non-plasticized homopolymer vinyl acetate.

Technical Data:

	Value	Unit	Test Method
Non-volatile content, 1h/125 °C	60 ± 1	%	DIN EN ISO 3251
Viscosity, Rheometer, 20 °C	< 2000	mPa.s	DIN EN ISO 2555
pH-value	2.5 – 6.0	-	DIN ISO 976
Delivery form	60% in water		

Application and Properties:

ALSYNOL VAE 1602 is used to formulate wood, paper, carton & construction adhesives. It makes a thermoplastic shiny and remoistenable film that allows formulation of remoistenable and thermosealable coatings for paper & carton. Thanks to the good properties of adhesion and elasticity of the film, it could be used in peelable paints.



Protectapeel Peelable Coating Products

VaraPeel PPC 2820

Water-based removable coating resin

A fast drying water-based acrylic for removable coating for protection in harsh, outdoor, unsheltered applications.

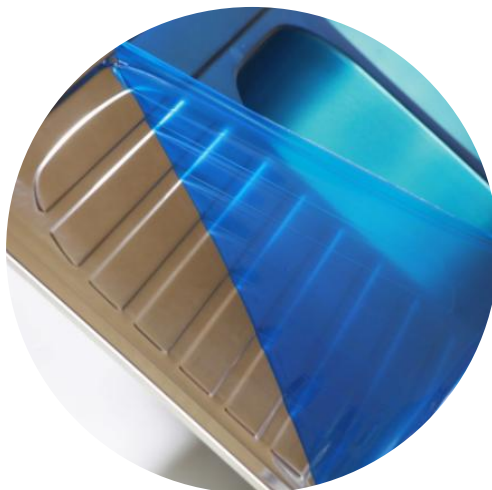
Provides multimetal protection. Excellent UV resistance.

Applications:

- Automotive
- Mining machinery
- Marine
- Aviation
- Filming & studio use
- Construction industry
- Fibre glass industry
- Metal works and fabrication
- Brass, copper & aluminium protection
- Spray booths
- Signage and advertising
- Protection of pre-painted surfaces
- Stop-off coating in electroplating
- Glass and glazing industry
- Casting moulds



ACRYLIC EMULSION



TECHNOLOGIES FOR A SECURE FUTURE



VARAPEEL

Water-based removable coating resin

Is applying VaraPeel PPC 2820 worth it? Let's explore this together.

Advantages:

Outstanding Protection: VaraPeel PPC 2820 effectively prevents damage from stones, insects, tree branches, and other external factors, especially vulnerable areas like the front of the car during high-speed driving.

Self-healing Properties: VaraPeel PPC 2820 boasts excellent self-healing capabilities, where minor scratches can automatically repair themselves in sunlight, maintaining the pristine condition of the car paint.

Enhanced Gloss and Appearance: High-quality VaraPeel PPC 2820 enhances the gloss of the vehicle, giving it a newer and shinier look, adding considerable aesthetic value to your beloved car.

UV Resistance: VaraPeel PPC 2820 provides effective UV protection, reducing the risk of paint fading, which is particularly beneficial in regions with intense sunlight.

Disadvantages:

Higher Initial Cost: High-quality VaraPeel PPC 2820 and professional installation services do require a significant investment initially. However, in the long run, this investment proves worthwhile.

Regular Maintenance Required: Despite the excellent self-healing properties of our VaraPeel AE 2820, regular cleaning and maintenance are necessary to ensure optimal performance.

Dependence on Professional Installation: The effectiveness of VaraPeel PPC 2820 largely depends on the quality of installation. We strongly recommend choosing certified professionals for installation to ensure the best results.

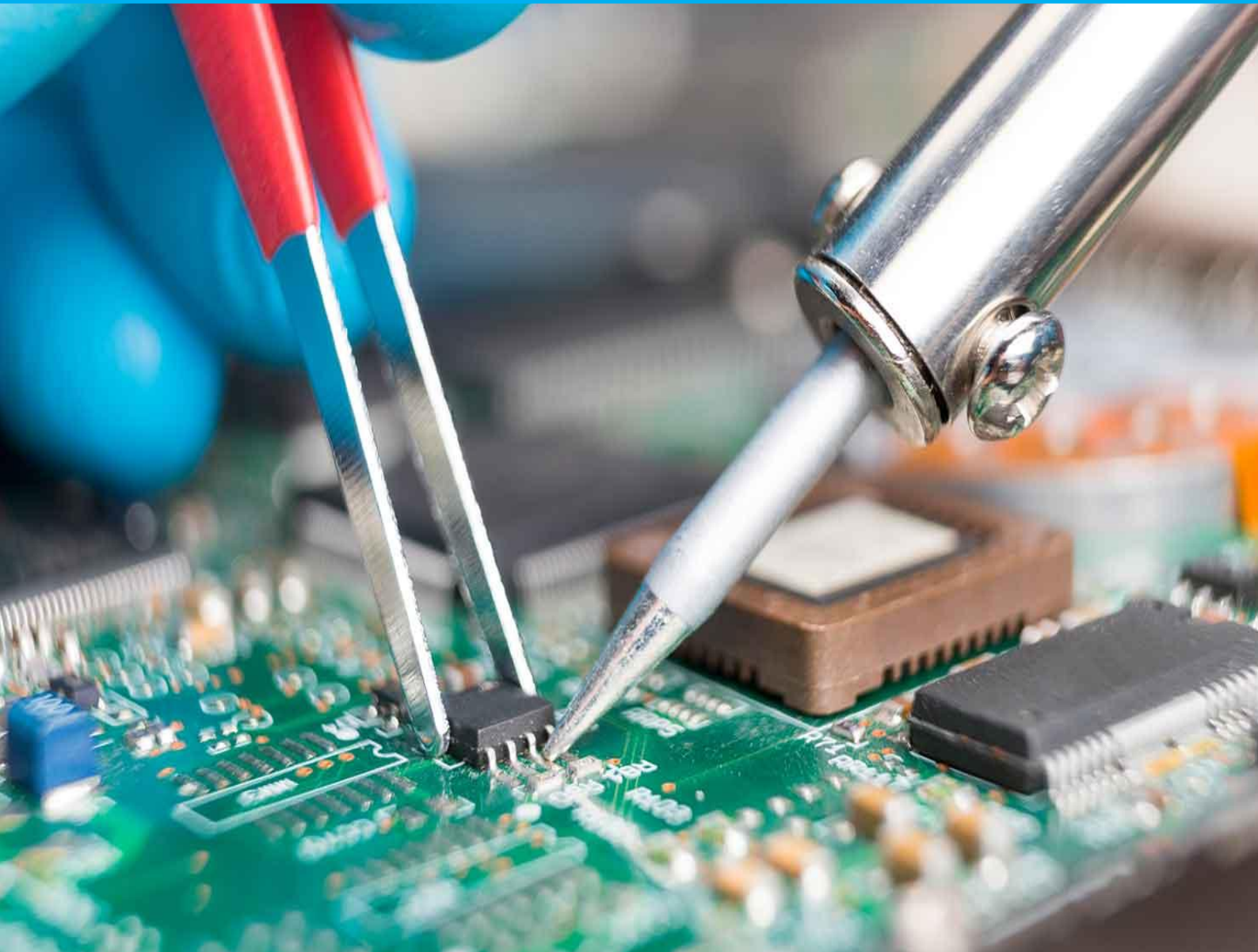
Conclusion:

Applying VaraPeel PPC 2820 is undoubtedly a wise choice for protecting your car's paint and enhancing its appearance. While the initial costs may be higher, in the long term, it provides long-lasting protection and reduces future repair expenses. Choose us for professional protection!



Protectapeel Peelable Coating Products
Durable spray on peelable surface protection coatings

ELECTRONIC PROTECTION SYSTEMS





VaraTron; HIGH MOLECULAR ACRYLIC; ELECTRONIC-PROTECTION-SYSTEM

Product	Characteristics	Nonvolatile Content [%]	Viscosity [mPa.s]	Application
VaraTron EPS 1102	High molecular, acrylic modified polymer	20.5	50 ± 10/ 23°C	Acrylic, thin film build, electronic protection coating. Air drying, ready to use in spray or dip application, UV tracer, excellent air release & substrate wetting. Non-fogging per DIN 75201
VaraTron EPS 1104	Acrylic modified polymer	20.5	50 ± 10/ 23°C	Electronic protection coating. VaraTron PL 1104 passes tests according to IPC CC-830-B, MIL I 46058 C and IEC 61086.

VaraTron EPS 1104 is a transparent conformal coating based on acrylic chemistry. The development of VaraTron EPS 1104 meets the latest requirements of electronics, low pin corrosion, excellent edge coverage and fast curing at low temperature. The varnish provides superior performance in dielectric properties and moisture protection under environmental stress. VaraTron EPS 1104 is lead free and satisfies requirements of the ROHS Directive. VaraTron EPS 1104 passes tests according to IPC CC-830-B, MIL I 46058 C and IEC 61086.

Application:

Coating of electronics:

- PCB's used in automotive and marine navigation
- Hybrids
- SMD devices
- discrete components

Main Properties of VaraTron EPS 1104:

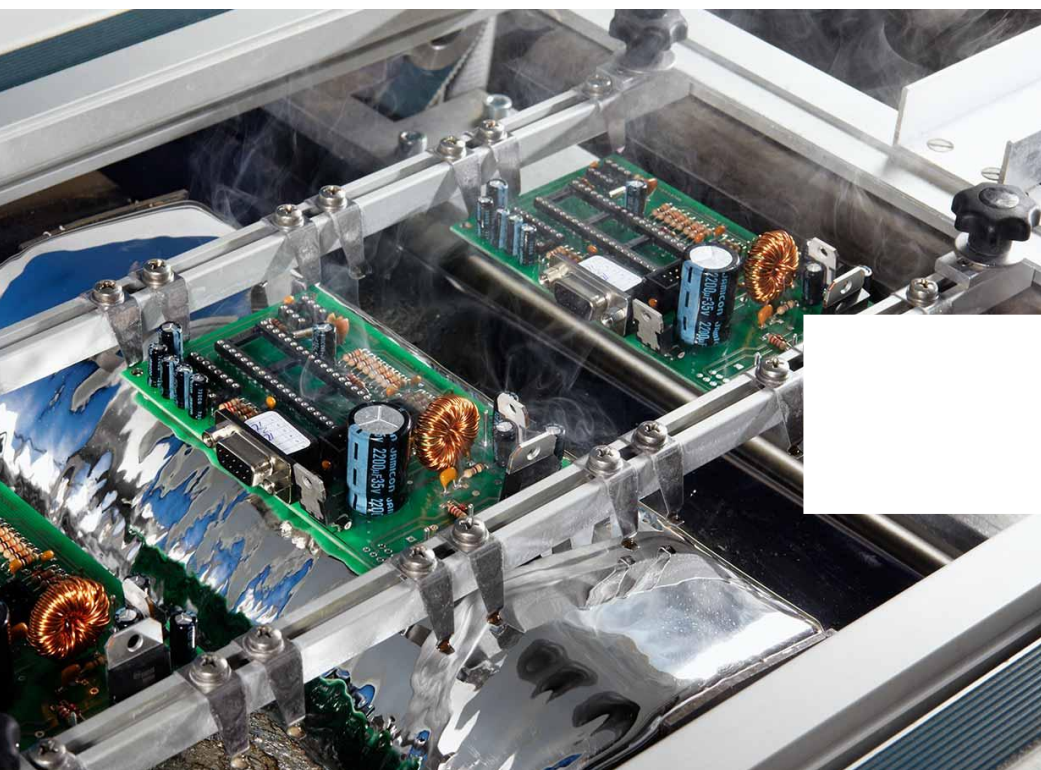
- Rapid curing at RT & heat accelerated
- High volume resistivity including humid conditions
- Good dielectric properties in thin films
- Resistant to moisture and dust contamination
- Withstands weak acids & alkalis
- Good adhesion under thermal cycling
- Temperature resistance 130°C
- Easy rework for repair
- Inspection of coated area is possible under UV light
- Self-Extinguishing according to UL 94 V0

Processing:

The coating varnish [VaraTron EPS 1104](#) was developed for automatic selective coating equipment. It can be applied by dipping, spraying (atomisation with air or cross cut nozzle) or brushing. The recommended viscosity for selective coating correlates to 40 seconds in 4-mm-cup (DIN/EN/ISO 2431) at ambient temperatures. [VaraTron EPS 1104](#) could be used at temperatures above room temperature in circulating Systems. For dipping, thinner Vactron 217 can be added to obtain the recommended viscosity. A single coating ensures good dielectric insulation and complete protection against humidity. The surface of the dip tank should be as small as possible. If the tank is not in use it should be kept closed to prevent evaporation of solvents of the varnish surface. In order to achieve satisfactory wetting and fault-free adhesion of the coating varnish it is important to ensure compatibility with the solder resist, paste and flux.

Curing:

- Air curing 23°C Cured 90 minutes
- dust dry 25 minutes
- Oven curing up to 80°C within 25pprox.. 15 minutes
- Time depends on oven air flow & ventilation



Thin Film Coating:

- lead free, no aromatics
- fast curing
- good temperature cycling
- UL-listing 94 V0

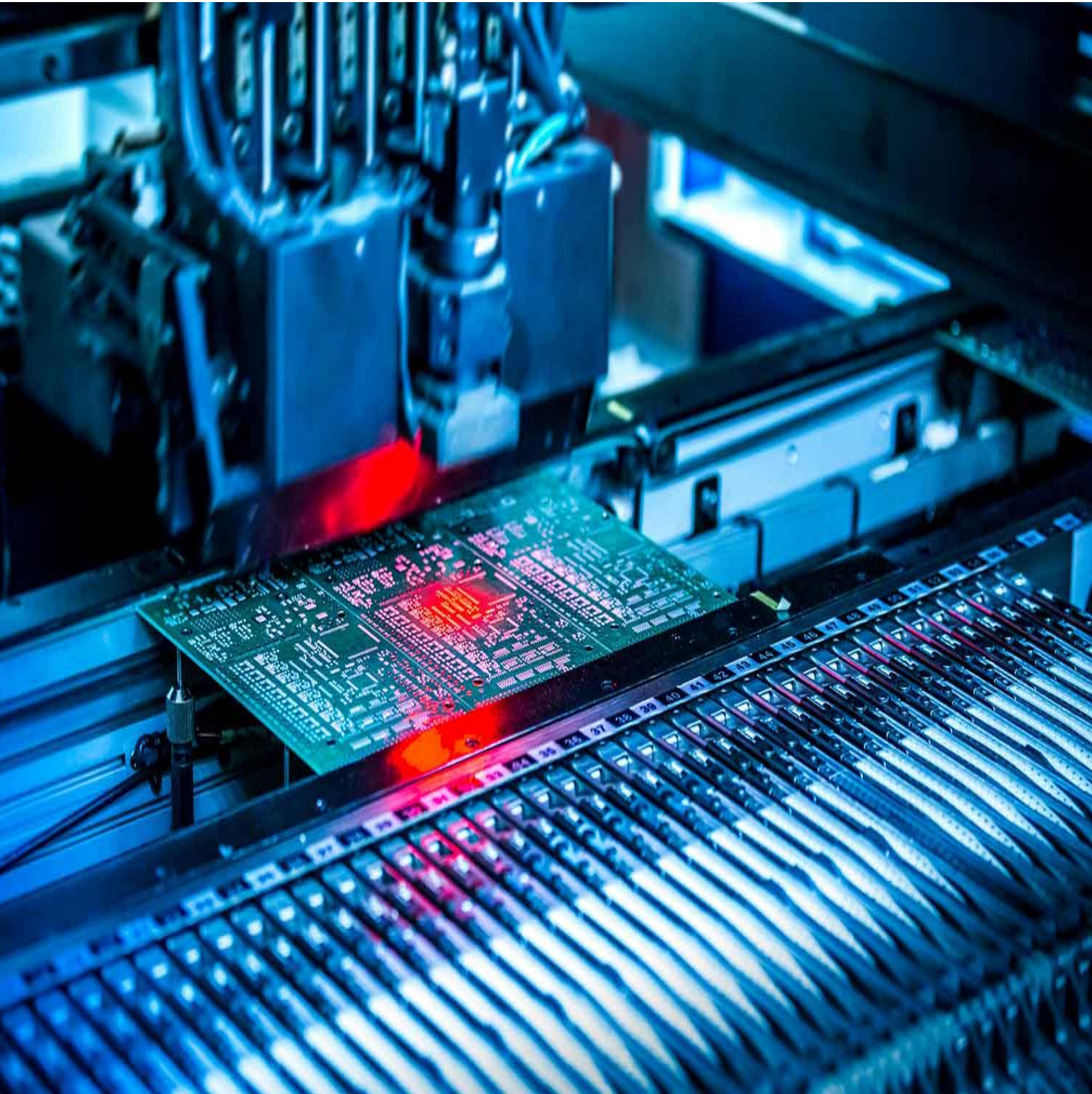


Table 1: Typical properties of coating varnish

PROPERTY	CONDITION	VALUE	UNITS
Non volatile content, ISO 3251 (Solid Content)	1,5 g, 1 h, 110 °C	20,5 ± 1	%
Viscosity – Flow Time, DIN EN ISO 2431 cup	4 mm-Cup, 23 °C	40 ± 15 (=50)	Seconds (mPa.s)
Density, DIN 51757	23 °C	0.90 ± 0.01	g/cm ³
Minimum shelf life	23 °C	12	months
Curing Time	23 °C, dust dry	0,42	h
	23 °C, touch dry	1,00	h
	23 °C, cured	2,00	h
	80 °C, cured	0,25	h

Table 2 - Mechanical properties of cured coating

PROPERTY	CONDITION	VALUE	UNITS
Mandrel Bend Test, IEC 60464-2/IPC TM650 2.4.5.1	3 mm, 0,06 mm film	> 180	°
Cross Hatch Test, DIN 53151/IPC TM650 2.4.1.6	-	GT 0	-
Thermal Shock, 50 cycles MIL-I-46058C	-65 to 125 °C	pass	-

Table 3 – Dielectric properties of cured coating

PROPERTY	CONDITION	VALUE	UNITS
Permittivity, IEC 60250	23 °C 10 KHZ	2.7	
Dielectric Dissipation Factor	23 °C 10 KHZ	0.013	
Dielectric Strength, IEC 60464 part 2/IPC TM 650 2.5.6.1B – after 23 hours water immersion.	23 °C	>156	
		>120	
Volume Resistivity, IEC 60464 part 2/IPC TM 650 2.5.17 – after 23 hours water immersion.	23 °C	1 x 10 ¹⁶	Ω . cm
		1 x 10 ¹⁶	Ω . cm
Tracking Resistance, IEC 60112		600	CTI

Table 4 - Chemical properties of cured coating

PROPERTY	CONDITION	VALUE	UNITS
Water Absorption, ISO 62	23°, 24 hours	4.5	mg
Self-Extinguishing according to UL 94	On 1,5 mm FR4	V 0	-





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