acResin®
The acrylic hotmelt
acResin® – The acrylic hotmelt

Holding our daily lives together would be nearly impossible without the mostly invisible power of adhesives. acResin® offers a unique adhesive raw material perfectly suited for pressure-sensitive adhesives in the tape and labelling industries. The UV-curable 100 percent acrylic hotmelt features significant sustainability benefits, while providing excellent adhesive performance. This makes acResin® the number one choice for numerous premium applications.

Adhesive high-performer

The special requirements which adhesive tapes and labels have to meet, whether it is high durability, resistance to humidity, skin tolerability or transparent no-label look, vary from application to application. No matter which aspect is important to you, acResin® offers an excellent solution to produce high-quality, self-adhesive specialties for automotive, construction, medical, cosmetics, food or beverage applications.

Sustainability accelerator

Today, consumers are increasingly aware of sustainability – a trend that is increasingly reflected in purchase decisions. With acResin® you can go beyond merely satisfying legal regulations and set your products apart from the competition. Adhesive tapes and labels produced with our hotmelt are characterized by minimal VOC emissions (volatile organic compounds) and low odor. As a more sustainable alternative to solvent-based raw materials, they are particularly suitable for sensitive applications in the medical and food areas. That is why acResin® was classified by BASF’s “Sustainable Solution Steering Method” as an accelerator product, as it contributes significantly to sustainability in the value chain.
Committed application support
At BASF, long-standing adhesive expertise and dedicated coating know-how is continually enhanced by ongoing R&D activities. Take advantage of our Coating Center, where we can help you in the processing of acResin® to optimize your tailor-made products.

acResin® – Your number one choice:
- The UV-curable, 100 percent acrylic hotmelt
- Broad product range with wide-ranging adhesive properties
- Minimal VOC emissions and low odor (no added solvents)
- Low allergenic (no latex added)
- Ideally suited for extremely transparent films (clear-to-clear applications)
- Outstanding resistance to aging and heat
- No need for drying equipment
- Dedicated technical service by our experts
UV-curable technology

Conventional polyacrylates for pressure-sensitive-adhesives are supplied as solutions or dispersions in water. Once the organic solvent or water fulfilled its function as a vehicle, it has to be removed at considerable cost.

This is precisely where acResin® comes in: acResin® products contain only pure solids and can be processed immediately on standard hotmelt coaters equipped with commercial UV lamps. No extra drying equipment is required.

Easy, cost efficient curing

acResin® can be processed on hotmelt coaters equipped with UV lamps. Its polyacrylate chains are made from the same acrylic monomers used for other pressure-sensitive adhesive systems – polymers usually supplied as solutions in organic solvents or aqueous dispersions, which entail that the solvent or water needs to be removed at considerable cost. This is not necessary when acResin® is used.

Fast, controllable reaction

When irradiated with UV-C light, the potentially reactive groups attached to the chains form crosslinks with neighboring polyacrylate chains. The crosslinking reaction happens instantaneously, but is still easy to control accurately – it stops immediately when UV-C radiation ceases.

Photoreactive crosslinking

The photoreactive groups in the acResin® 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, thus explaining why no products of potential toxicological concern are released.
Variable adhesive power

acResin® develops its full adhesive power with the right UV curing. This involves a consideration of both the photoreactive curing mechanism of the acResin® product and the factors affecting the mechanism. The amount of radiation in the UV-C spectrum depends on the properties needed from the pressure-sensitive adhesive after processing. The degree of crosslinking increases with an increased dose of radiation. The adhesive gains in cohesion while adhesion and tack decrease.

Resistant to sunlight

The film of UV-sensitive polyacrylate adhesives is only partially cross-linked in most applications. This means that the effect of sunlight on the remaining photoreactive groups needs to be examined. Our planet has a protective layer of ozone in the upper atmosphere that prevents radiation with wavelengths of less than 290 nm from reaching the Earth’s surface. UV radiation in the wavelength range of 250-260 nm – the range that activates the photoreactive groups in acResin® – cannot get through. Noticeable crosslinking due to sunlight is not expected. This has been confirmed by outdoor weathering tests over several months and sunlight tests on adhesive films.
Automotive

acResin® is highly durable and resistant to aging. This makes it an ideal solution for developing labels and tapes for automotive applications.

Your benefits at a glance:

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

acResin® A 204 UV
- Excellent cohesion
- Coating weights up to 100 g/m²
- Modification with other solid acrylic resins

acResin® A 250 UV
- Resistance to water whitening
- Coating weights up to 100 g/m²
- Minimal post-curing on subsequent UV printing

acResin® A 260 UV
- High heat resistance
- Coating weights up to 100 g/m²
- Excellent balance between adhesion and cohesion
Construction

acResin® is long-lasting and resistant to humidity. That is why these products are perfectly suitable for developing pressure-sensitive adhesives for construction applications such as single-sided and double-sided tapes.

Your benefits at a glance:

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

acResin® A 204 UV
- Excellent cohesion
- Coating weights up to 100 g/m²
- Modification with other solid acrylic resins

acResin® A 250 UV
- Resistance to water whitening
- Coating weights up to 100 g/m²
- Self-adhesive coating for bitumen insulation felts

acResin® A 260 UV
- High heat resistance
- Coating weights up to 100 g/m²
- Excellent balance between adhesion and cohesion
Medical

acResin® products feature substantial sustainability benefits – your ideal choice for the production of medical tapes.

Your benefits at a glance:

- Latex-free
- No organic solvents
- Minimal migrating ingredients
- Complies with ISO 10993-5 and 10993-10 (biological evaluation of medical devices)
  - not cytotoxic
  - no skin irritation
  - anti-allergenic

<table>
<thead>
<tr>
<th>acResin® A 250 UV</th>
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<tbody>
<tr>
<td>Resistance to humidity and water</td>
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<td>Coating weights up to 100 g/m²</td>
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Food, Beverage and Cosmetics

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

Your benefits at a glance:

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

**acResin® A 204 UV**

- For paper labels
- Excellent cohesion
- Coating weights up to 100 g/m²
- Modification with other solid acrylic resins

**acResin® A 250 UV**

- For clear-to-clear film labels
- Coating weights up to 100 g/m²
- Minimal post-curing on subsequent UV printing

**acResin® UV 3532**

- For removable and wash-off labels
- Coating weights up to 30 g/m²
- Modification with hydrocarbon resins
acResin® product portfolio

We offer a broad range of acResin® products, tailored to customer and industry needs. Discover our product portfolio, and let’s discuss how we can enhance the performance of your products.

Modifying acResin® products

Blending acResin® products with other resins before curing increases the tack of the finished product. It is essential, however, that the resins chosen do not absorb significant UV radiation between 250 nm and 260 nm, so that there is enough radiation for curing. Modifiers added to acResin® that do not contain photoreactive groups effectively dilute it to some extent. The dose of UV-C given to the blend as a whole must be increased accordingly in order to achieve the required density of crosslinks.
<table>
<thead>
<tr>
<th>acResin® A 204 UV</th>
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<tr>
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<td>Can be modified by resin-based tackifiers, plasticizers, poly(vinyl ethers) and other solid acrylic resins</td>
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<td>Applications / notes</td>
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<tr>
<td>Applications / notes</td>
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* Please find further information in the product-specific "Information Sheet Product Safety".  
Given values are approximate values, binding values are found in the specification data sheets.
The information in this leaflet is based on our current knowledge and experience. It does not constitute the agreed contractual quality of the product and, in view of the many factors that may affect processing and application of our products, does not relieve processors from carrying out their own investigations and tests. The agreed contractual quality of the product at the time of transfer of risk is based solely on the data in the specification data sheet. Any descriptions, drawings, photographs, data, proportions, weights, etc., given in this publication are subject to change without prior notice. It is the responsibility of the recipient of our product to ensure that any proprietary rights and existing laws and legislation are observed (10/2015).