

# acResin<sup>®</sup>

## The acrylic hotmelt

 **BASF**  
We create chemistry


 **acResin<sup>®</sup>**  
The acrylic hotmelt



**acResin<sup>®</sup>** – The acrylic hotmelt  
**your number one choice**

# acResin<sup>®</sup> – Benefits at a glance

- Solvent-free UV acrylic hotmelt
- Variable adhesive power enabled by adjustable UV-crosslinking
- Outstanding resistance to aging and heat
- Excellent clarity for transparent films (no-label look)
- Low fogging, VOC and odor
- Safe for contact with food and good skin compatibility
- Higher eco-efficiency than solvent-based alternatives
- Wide range of adhesive properties covered by specially designed product grades
- Efficient upscaling on our pilot coater with the support of our technical experts



Holding our daily lives together would be nearly impossible without the invisible power of adhesives. **The unique properties of acResin® are perfectly suited to pressure-sensitive adhesives.**

## Adhesive high-performer

Depending upon the application, adhesives have to meet specific requirements such as high durability, resistance to humidity, skin tolerability or a transparent no-label look.

**acResin® has been specially designed for the manufacture of high-quality self-adhesive specialty products for automotive, construction, medical, cosmetics, food or beverage applications.**

# Significant sustainability benefits

Adhesive tapes and labels produced with **acResin®** 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.

**acResin® helps you do more than just comply with legal regulations, differentiates your product from the competition and makes a significant contribution to sustainability in the value chain.**

## Eco-Efficiency Analysis of adhesive production for durable labels

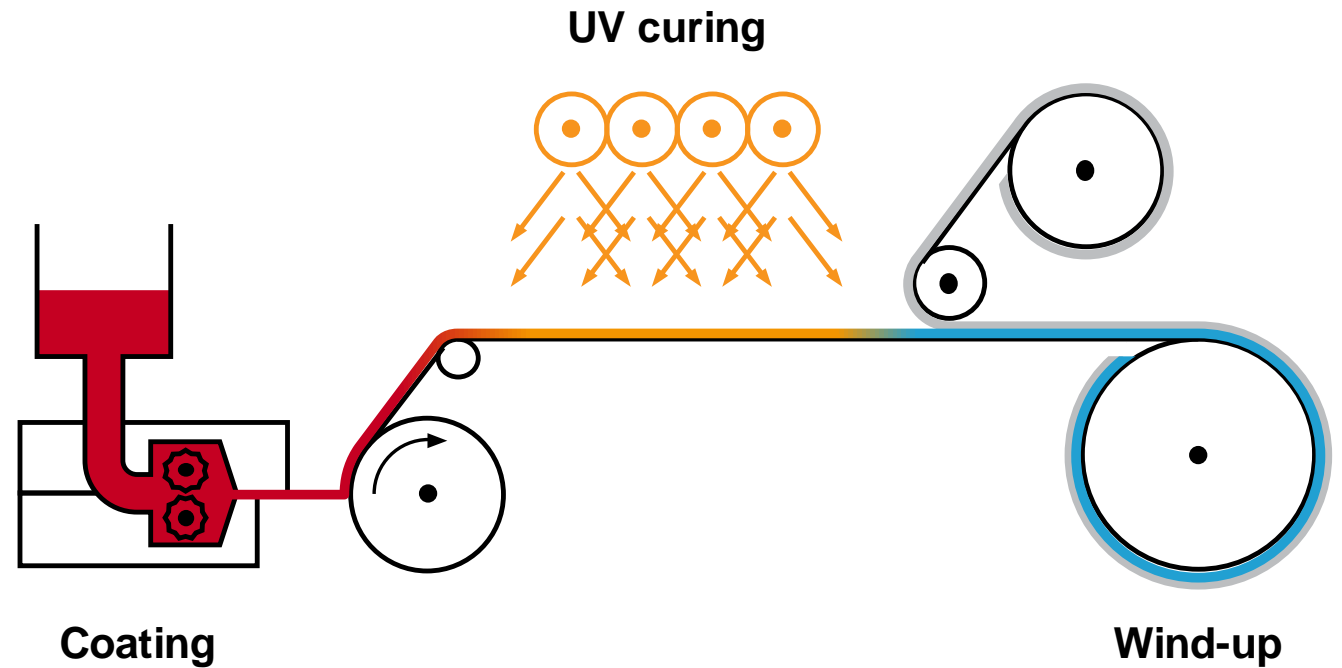
An independently reviewed analysis found that, in comparison with solvent-based adhesives, **acResin®**-based adhesives are both the less expensive and the more sustainable solution for durable labels.

# UV-curable technology

**acResin<sup>®</sup>** products contain only pure solids and can be processed immediately on standard hotmelt coaters equipped with commercial UV lamps. No extra drying equipment or flash-off zones are required.

# Processing of acResin®

- Easy, cost-efficient curing
- Fast, controllable reaction
- Photoreactive crosslinking



# Variable adhesive power

acResin<sup>®</sup> develops its full adhesive power with the right UV curing.

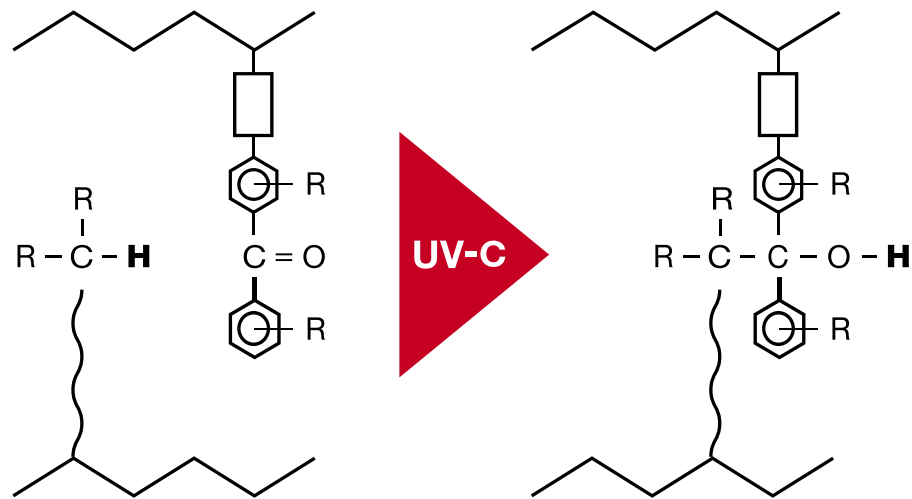


## Easy, cost-efficient curing

**acResin**<sup>®</sup> can be processed on hotmelt coaters equipped with UV lamps. No solvent or water needs to be removed because **acResin**<sup>®</sup> is 100% acrylate. This increases the cost-efficiency of processing significantly.

## 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 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 **acResin<sup>®</sup>** 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.

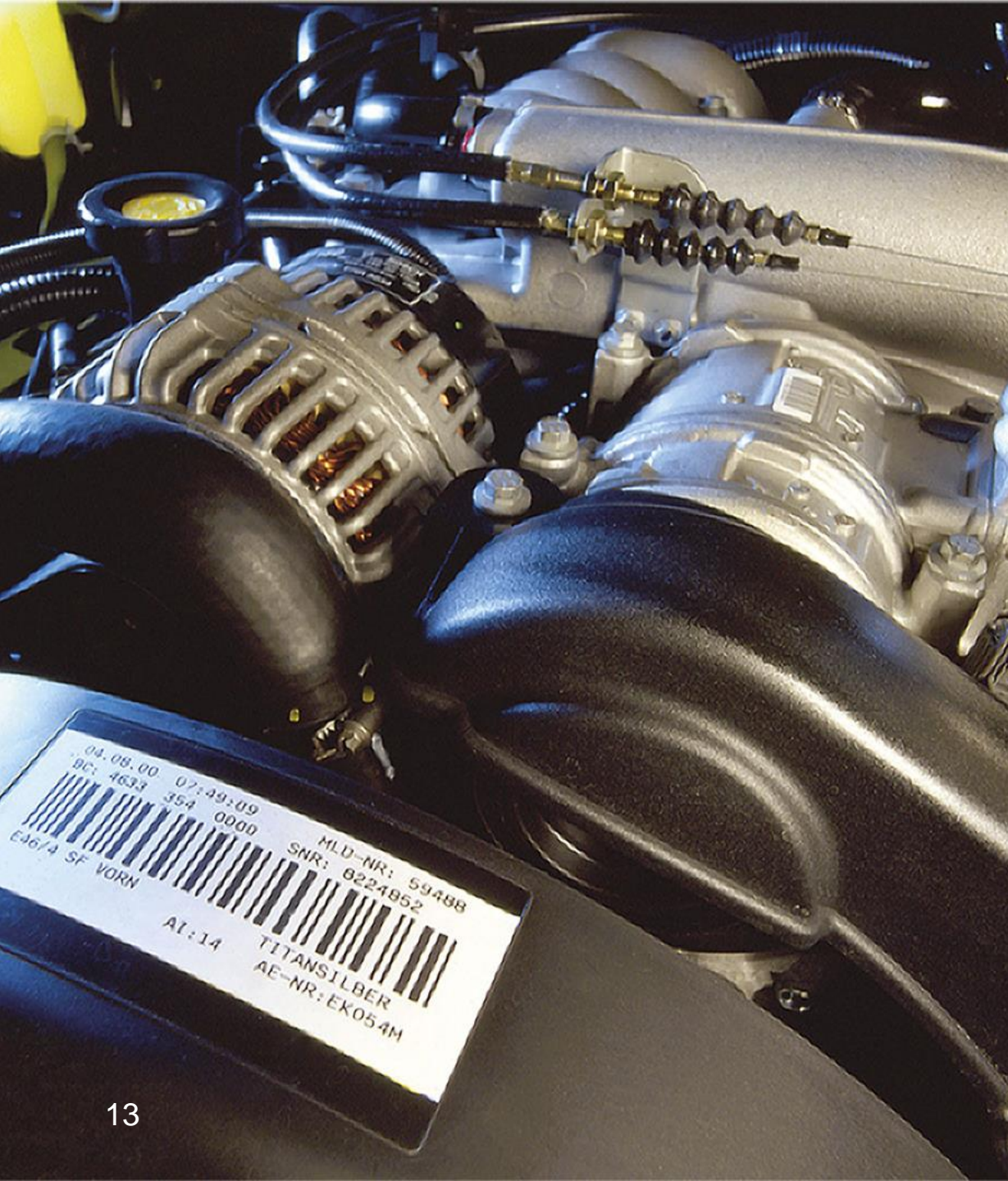
## Blending of acResin®

Blending of **acResin®** products with other tackifying resins before curing increases the adhesion of the final product. However, it is important that the selected resins do not absorb significant amounts of UV radiation between 250 nm and 260 nm.

This ensures that sufficient radiation is available for curing. Blending **acResin®** with modifiers that lack photoreactive groups leads to a certain degree of dilution. This means that a higher dose of UV-C must be used to achieve the required crosslinking density in the blend.

acResin<sup>®</sup> – The acrylic hotmelt

# Eco-Efficiency Analysis



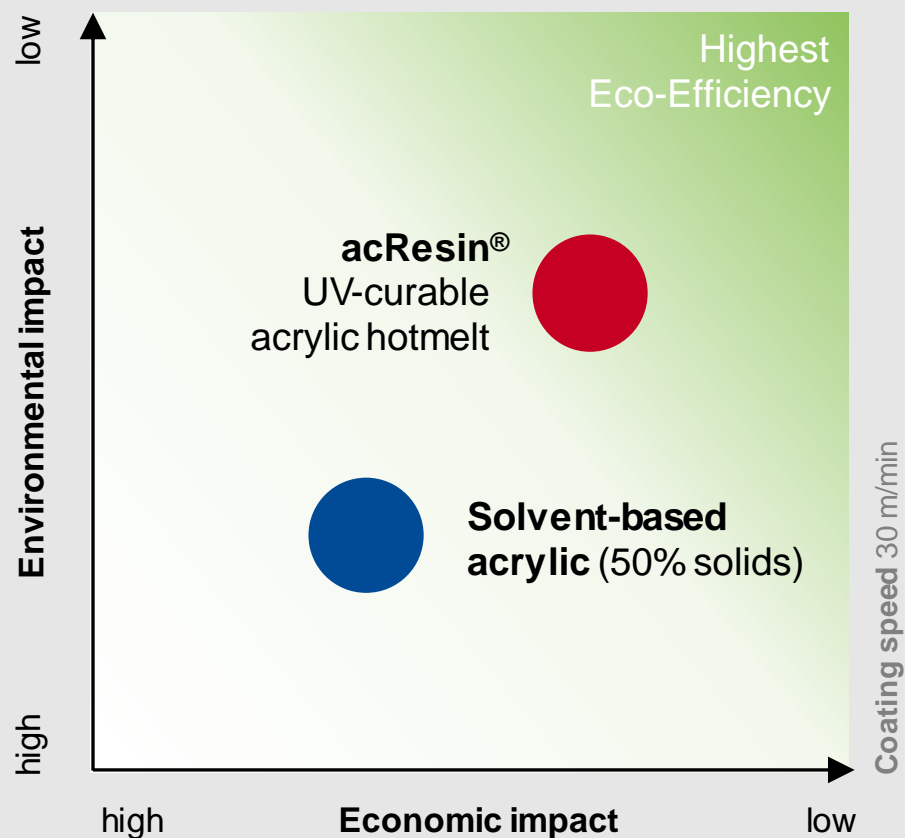
## Adhesives for durable labels: acResin<sup>®</sup> versus solvent-based acrylics

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

**acResin<sup>®</sup> and solvent-borne acrylics  
show comparable performance when used  
as raw materials for durable labels.  
But what about cost and sustainability?**

# Eco-Efficiency Analysis

Adhesive production for durable labels



## Results: acResin® sets new benchmarks in eco-efficiency

- Using **acResin®** is safer and cleaner for both humans and the environment
- Using **acResin®** saves money

# Independent review of Eco-Efficiency Analysis

## Commissioner



## Partner (machine builder)



## Life Cycle Assessment Practitioner



## Critical Reviewer



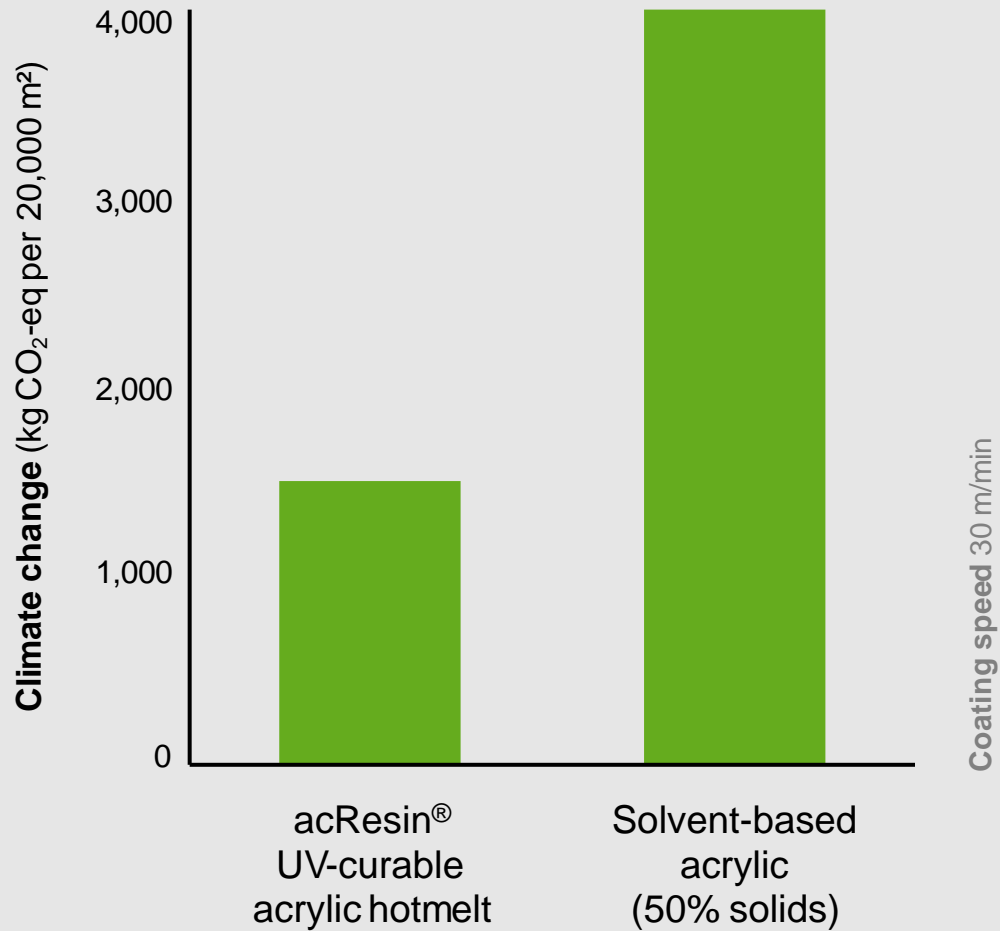
thinkstep

- **System under evaluation:**  
Production of 20,000 m<sup>2</sup> of laminate for durable labels (1.6 m width)
- **acResin® A 250 UV** was compared to a **solvent-borne acrylate (50% solid content)**; with line speed of 30 m/min
- The analysis followed international standards **for life cycle** and **eco-efficiency assessment** (ISO 14040:2006, ISO 14044:2006, ISO 14045:2012)



## Environmental impact

Climate change (carbon footprint)



With acResin® you can save

2,500 kg CO<sub>2</sub>-eq  
per 20,000 m<sup>2</sup>



2,500 tons CO<sub>2</sub> savings  
per year\*

\* Assuming 300 days of laminate production  
for durable labels with line speed of 30 m/min

## Carbon footprint

How to compensate for 2,500 tons of CO<sub>2</sub>?

**Plant 5,000 trees!**  
**... or switch to acResin®.**



**acResin®** – The acrylic hotmelt  
**committed application  
support**

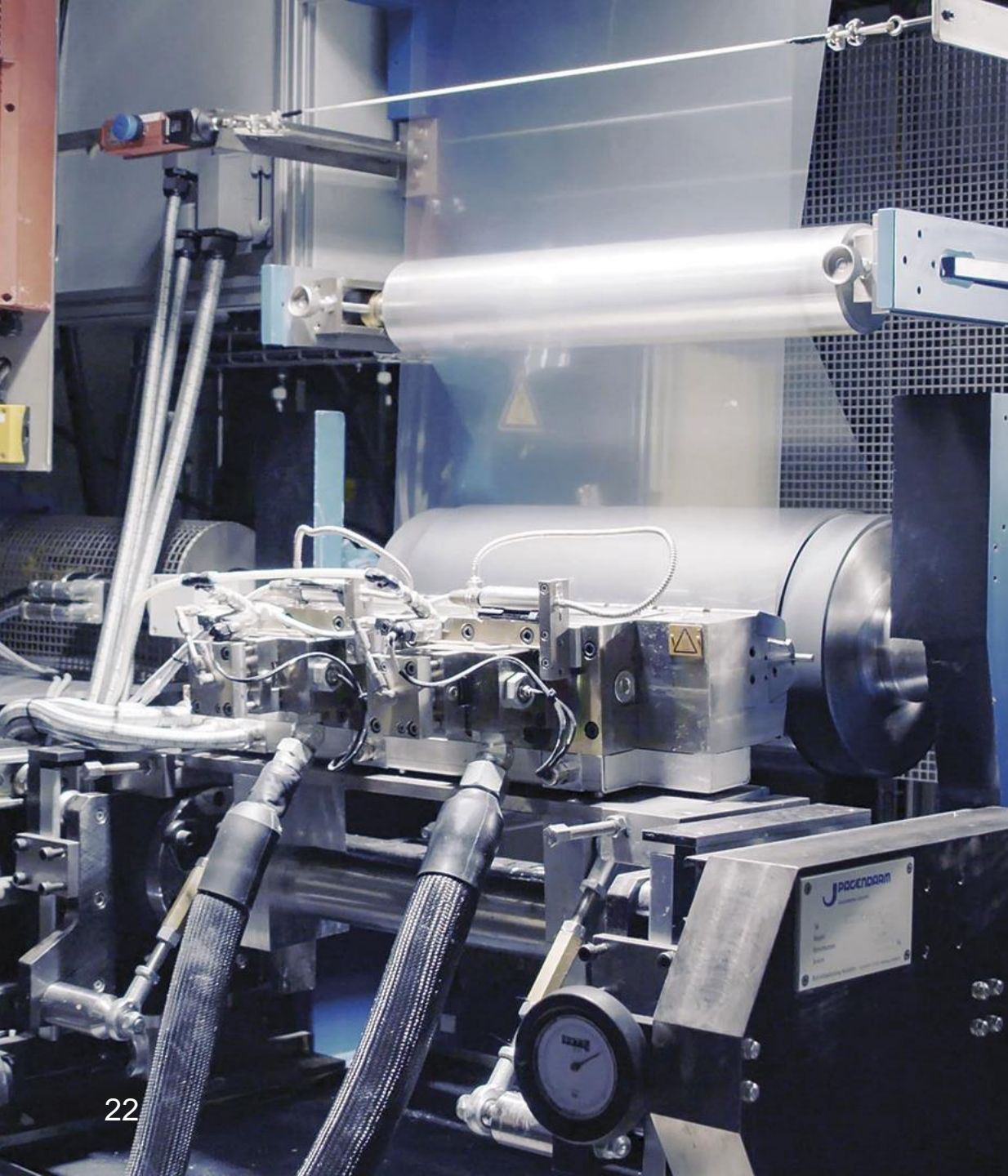
# The BASF Coating Center in Ludwigshafen



## Dedicated support team

When processing **acResin<sup>®</sup>**, you can rely on our service and expertise. At our Coating Center, we can help you to optimize your chosen coating systems and provide valuable input as you decide on new technologies or investments.

In close collaboration with major machine manufacturers, our team continuously works on improving coating technologies and concepts for new plants.



## The BASF Coating Center

### Technical data

Coating speed min. / max.	15 / 700 m/min
UV lamps	8 x 170 W/cm
Width coating substrate	550 mm
Width laminating substrate	570 mm
Diameter core	76 or 152 mm / 3 or 6 inch
Diameter rolls max.	1000 mm

### Available coating systems

- Slot die with rotating bar
- Curtain die
- Kiss coat



# Coating Center Video



**Click here**  
to watch the video  
(Internet connection needed)



**acResin<sup>®</sup>** – The acrylic hotmelt  
**application segments**



# Automotive

**acResin<sup>®</sup>** is highly durable and resistant to aging. This makes it the ideal solution for developing labels and tapes for automotive applications.

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





## Construction

**acResin<sup>®</sup>** is long-lasting and resistant to humidity. This is why these products are the perfect choice for developing pressure-sensitive adhesives for construction applications such as single-sided and double-sided tapes.

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

# Medical

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

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





## Food, Beverage and Cosmetics

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

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



# acResin<sup>®</sup> – The acrylic hotmelt 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.

**Our acResin® products: 100% solid content**

# Our acResin<sup>®</sup> portfolio

Product	Main applications	Good to know	
acResin <sup>®</sup> A 250 UV	<ul style="list-style-type: none"> <li>Construction tapes</li> <li>Permanent filmic labels</li> </ul>	<ul style="list-style-type: none"> <li>Excellent adhesion to low-energy surfaces</li> <li>Good optical properties</li> </ul>	<ul style="list-style-type: none"> <li>Very low VOC</li> <li>ISO 10.993-5 /-10 approved</li> <li>Coating weights up to and over 250 g/m<sup>2</sup></li> </ul>
acResin <sup>®</sup> A 260 UV	<ul style="list-style-type: none"> <li>Automotive tapes</li> <li>Construction tapes</li> <li>Medical tapes</li> </ul>	<ul style="list-style-type: none"> <li>Preferred choice for formulated adhesives</li> </ul>	<ul style="list-style-type: none"> <li>Very low VOC</li> <li>ISO 10.993-5 /-10 approved</li> <li>Coating weights up to 150 g/m<sup>2</sup></li> </ul>
acResin <sup>®</sup> A 204 UV	<ul style="list-style-type: none"> <li>Permanent paper labels</li> <li>Durable labels</li> <li>Specialty tapes</li> </ul>	<ul style="list-style-type: none"> <li>Preferred choice for formulated adhesives</li> </ul>	<ul style="list-style-type: none"> <li>Resins or resin-based tackifiers possible</li> <li>Coating weights up to 100 g/m<sup>2</sup></li> </ul>
acResin <sup>®</sup> UV 3532	<ul style="list-style-type: none"> <li>Removable labels</li> <li>Wash-off filmic labels</li> </ul>	<ul style="list-style-type: none"> <li>Excellent optical properties</li> </ul>	<ul style="list-style-type: none"> <li>Coating weights up to 50 g/m<sup>2</sup></li> </ul>

# acResin<sup>®</sup> A 250 UV

**100%**  
solid content

## Application Segment



Automotive



Construction



Medical



Food, Beverage  
and Cosmetics

## Shear



## Tack



## Glass transition temperature

**-39°C**

## Peel



## Features and Benefits

- Excellent adhesion to low energy surfaces
- Resistance to water whitening, humidity and water
- Excellent clarity in adhesive films
- Coating weights up to and over 250g/m<sup>2</sup>
- Compliant with ISO 10993-5/-10
- Certifiable according to UL 969



# acResin<sup>®</sup> A 260 UV

**100%**  
solid content

## Application Segment



Automotive



Construction



Medical



Food, Beverage  
and Cosmetics

## Shear



## Tack



## Glass transition temperature

**-39°C**

## Peel



## Features and Benefits

- Well-balanced properties for a wide range of applications
- Resistance to humidity and water
- Excellent balance between adhesion and cohesion
- Option to modify with other solid acrylic resins or rosin-based tackifiers
- Compliant with ISO 10993-5/-10
- Certifiable according to UL 969

# acResin<sup>®</sup> A 204 UV

100%  
solid content

## Application Segment



Automotive



Construction



Medical



Food, Beverage  
and Cosmetics

## Shear



## Tack



Glass transition  
temperature

**-34°C**

## Peel



## Features and Benefits

- Excellent cohesion
- Especially suitable for permanent paper labels
- Option to modify with other solid acrylic resins or rosin-based tackifiers
- High heat resistance
- Certifiable according to UL 969

# acResin<sup>®</sup> UV 3532

**100%**  
solid content

## Application Segment



Automotive



Construction



Medical



Food, Beverage  
and Cosmetics

## Shear



## Tack



## Glass transition temperature

**-60°C**

## Peel



## Features and Benefits

- Excellent clarity in adhesive films
- Resistance to water whitening
- For removable and wash-off labels
- Suitable for low to medium coating weight applications

A young boy with reddish-brown hair is smiling and looking towards the camera while floating underwater. He has a red adhesive bandage on his left upper arm. He is wearing colorful, patterned swim trunks. The background is a clear, bright blue water.

# Let's discuss how we can support you in developing high-quality and sustainable adhesives

Get in touch with us under: [pressure-sensitive-adhesives@basf.com](mailto:pressure-sensitive-adhesives@basf.com)

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The acrylic hotmelt

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