Coating and Adhesive Raw Materials for the Automotive Industry

Bayhydrol® Bayhydur® Bayhytherm® Desmodur® Desmocap® Desmomelt® Desmophen® Dispercoll® Impranil®

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INVENTING **VISIONS** FOR YOU

As your leading partner for polyurethane chemistry, we know you are competing in increasingly challenging environments: Your customers are becoming more and more demanding in their expectations for the quality, durability, sustainability and aesthetics of products. And they have more choices. For you this means that cost pressure is rising – while innovation cycles are becoming faster and faster.

Helping you to turn this challenge into your competitive advantage is the goal that drives our daily work. We call it: INVENTING FOR YOU. But what exactly are the basic values underlying this promise? What principles enable us to improve your productivity, drive sustainability, ensure reliability and co-create future-proof businesses? First and foremost, we are curious. Because only if we listen closely to you and ask the right questions can we respond to your individual needs with new, creative and unexpected solutions that make a real difference to you. That's why inventing for us always starts with thinking about your unmet business challenges. It requires an in-depth understanding of your needs along the whole value chain. To ensure that what we invent stands the test of time. Living up to this aspiration requires more than competencies – it calls for a corporate culture of being courageous. A culture that is defined and lived by dedicated people who cooperate to push the boundaries of invention founded on knowledge and experience. Our courage permeates our entire business – from partnerships to business models. This is also reflected in our colorful business philosophy. We appreciate partnerships that go beyond traditional black-and-white ways of acting and thinking. An attitude of openness that invites you to co-create new things – enabling you rather than just providing. We are optimistic and resourceful in finding solutions that inspire our customers and partners.

This set of fundamental values adds up to an unrivaled performance orientation to constantly strive for something better, be it through big or small changes. A true sense of business regardless of function. And a deep commitment to delivering our promise everyday. Anywhere. Again and again.

INVENTING FOR YOU.

What we do

As a world-leading polymer and material science company, we inspire innovation and drive growth through profitable products and technologies that benefit society and reduce the impact on the environment.

Who does all this?

It's our people! And the way we work together as one global team following a set of six elementary principles – value creation, sustainability, innovation, focus on people, safety and fair play. This is our formula for success.

What this means for our Coating, Adhesive & Specialty business

Quality & supply security
Our products are of outstanding quality and we offer supply security – worldwide.

Covestro, the world's leading manufacturer of aliphatic and aromatic poly isocyanates, offers an extensive range of raw materials and services for the coatings and adhesives industry. This allows the very latest technology to be used extremely effectively for a variety of applications.

Our global setup enables you to increase your competitive advantage.

What we offer:

- A global network of research & development centers where our staff are dedicated to offering solutions for the coating and adhesive industry.
- A unique setup and worldwide network of state-of-the-art production sites ensuring short lead times and supply chain flexibility.
- Outstanding product quality through fulfilling the requirements of state-of-the-art quality, environmental and safety (HSEQ) as well as energy management standards; we are proud of having enjoyed ISO 9001, ISO 14001, ISO 18001 and ISO 50001 certifications for many years.

Covestro is your reliable partner for polyurethane chemistry.

Sustainability
Sustainability is at the heart of the Covestro strategy. We inspire innovation and drive growth through profitable products and technologies that benefit society and reduce the impact on the environment.

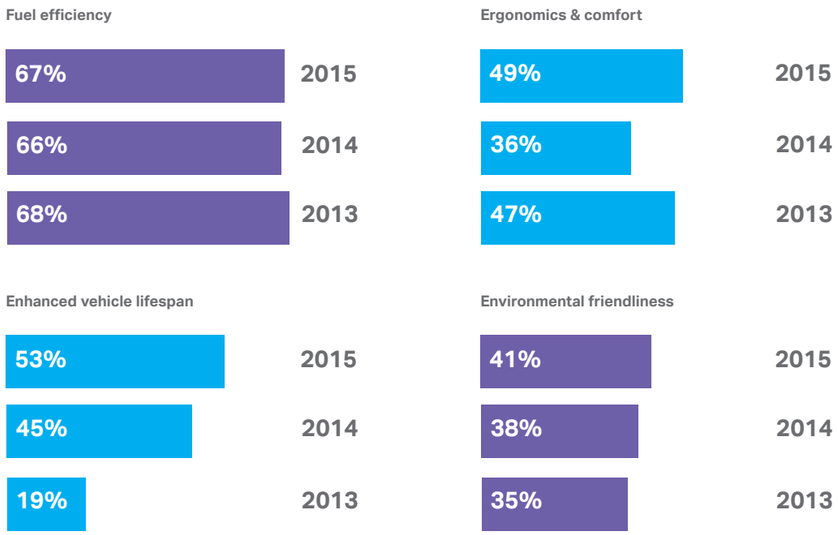
Our coatings, adhesives and specialty products and solutions contribute to sustainability through:

- **Saving energy – fast and smart**
  Polyurethane systems represent a benchmark in productivity and process efficiency in many industries. We strive to further push the limits of efficiency by developing game-changing new solutions.
- **Reducing waste**
  We offer solutions such as innovative 1K technologies that enable our value chain partners to use materials more efficiently and reduce waste.
- **Cutting emissions**
  Bayhydur® and Desmodur® grades are key enablers for low-emission solutions in the coatings and adhesives industries – waterborne and high solids/solvent-free!
- **Responsible management of natural resources**
  Highly durable PU-based coatings and adhesives significantly extend the lifetime of a coated product and thus help to prolong resource use.
- **Closing the loop (circularity)**
  Through economically viable products made from biobased raw materials– with no deterioration in performance – we help our customers and value chain partners to reduce their carbon footprint and offer solutions that incorporate renewable building blocks.

Significant energy savings in automotive manufacturing
The automotive industry does not just demand a great deal of coating technologies in terms of costs and quality; energy efficiency is also becoming an increasingly relevant issue. As a result, timesaving coating processes are also gaining in importance. Efforts to reduce VOC emissions, energy consumption and CO_2 emissions are already playing a key role in automotive manufacturing – and will continue to do so in the future. Paint plants account for around half the energy needed to make an automobile – more than any other production factor. But in the future, the use of the thermolatent hardener technology developed by Covestro will mean double-digit energy savings are no longer a mere pipedream.This will be made possible through the deployment of 2K polyurethane coatings in combination with low stoving temperatures. This thermolatent technology enables the paint to harden up to 30% faster than with conventional 2K polyurethane coatings, and the stoving temperature can be reduced from 140°C to around 80°C without negatively affecting the appearance of the paint. This lower temperature also opens up the possibility of using alternative energy sources, e.g., district heating, to heat the stoving ovens.

Solutions to enhance your process efficiency
Nowadays, the quality demands made on industrial processes are very high. But at the same time, there is a clear need to cut costs. Both goals can be achieved by increasing process efficiency. Besides the time savings made possible by direct coatings, the complexity of the processes involved in manufacturing automotive coatings offers various opportunities to enhance process efficiency. Significant process-optimizing and cost-cutting gains are possible, for example, through faster curing and shorter process times. At Covestro we have a wide range of solutions designed to enhance your process efficiency. Why not take advantage of our know-how? These solutions will be good for your bottom line.

Why consumers buy a car*



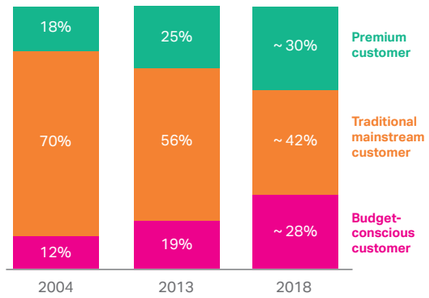
* KPMG Automotive Executive Survey 2015

Transforming market needs into innovative products

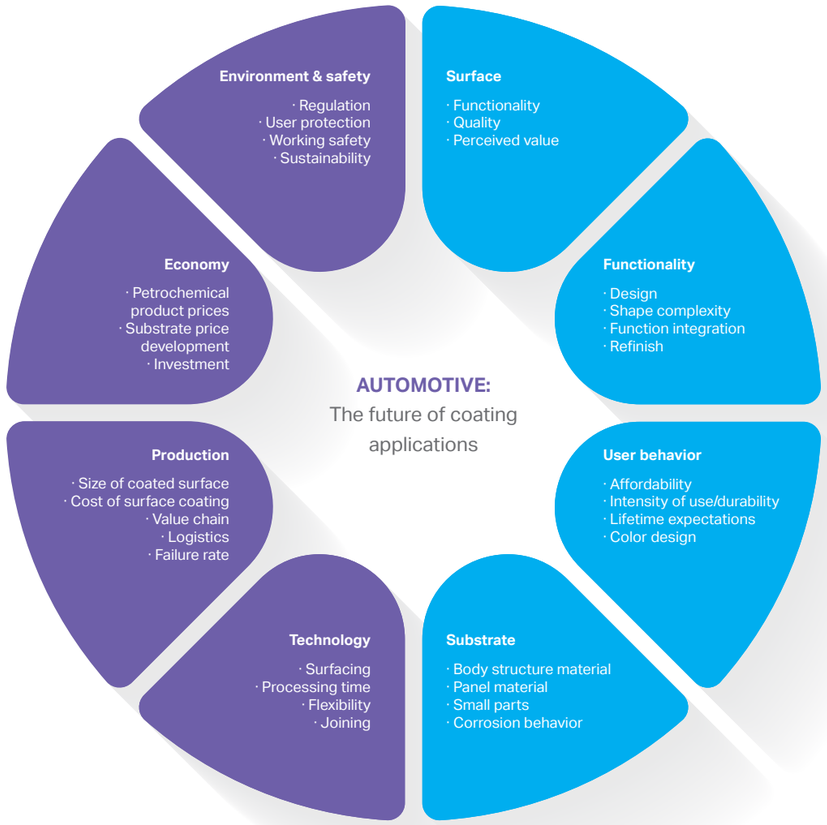
At Covestro, we are driven by a desire to transform market needs into innovative products:

- **Fuel efficiency:** Our innovative Desmodur® Blulogiq thermolatent hardener technology opens up new and very promising opportunities for enhanced fuel efficiency made possible by mass-produced lightweight vehicles.
- **Enhanced vehicle lifespan:** Our two-component (2K) polyurethane (PU) clear-coat technology ensures lasting quality while PU-based adhesives deliver durability and quality in automotive applications.
- **Interior design:** PU-based soft-touch or piano coatings, for example, make a high degree of diversification and individualization possible in a vehicle's interior design.

The future of automotive coating applications – how we enable tomorrow's needs and wants



The future of automotive coating applications, in a nutshell, is efficient production and refinishing of multi-material cars of high-class paint appearance and performance.



The future of automotive coating applications – how we enable tomorrow's needs and wants

Tomorrow's needs

The insights and foresights gained by our automotive experts clearly indicate where the coatings market is heading:

- Lightweight and multi-material concepts reinforced by the need for greater fuel efficiency and lower CO_2 emissions
- Pressure on the margins of auto OEMs through keen competition
- Higher levels of profitability typically found in the premium class
- Continuous improvements in cost efficiency, modular platform strategies, and the energy consumed in automotive production processes
- Appearance and paint performance are key differentiation factors for consumers, and the key enablers for auto OEMs to participate in profitable segments

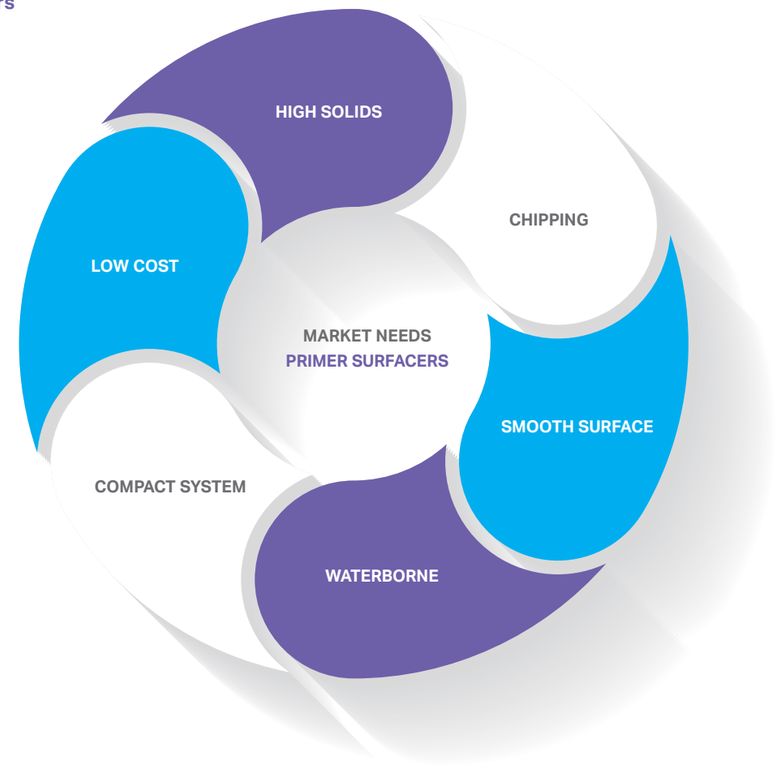
Polyurethane enablers

2K polyurethane topcoats have been a proven success up to now. Our next-generation products will enable the automotive industry's future:

- Superior appearance and performance
- Material mix for compliance with different degrees of thermal expansion and heat resistance in substrates
- Enhanced efficiency through compact coating processes with fewer coating layers
- Low-temperature process with the coating of plastic parts integrated to reduce complexity and save energy
- Waterborne coating technology significantly reducing solvent and VOC content to comply with stricter regulations

Superior automotive coatings to meet market needs

1. Primer surfacers

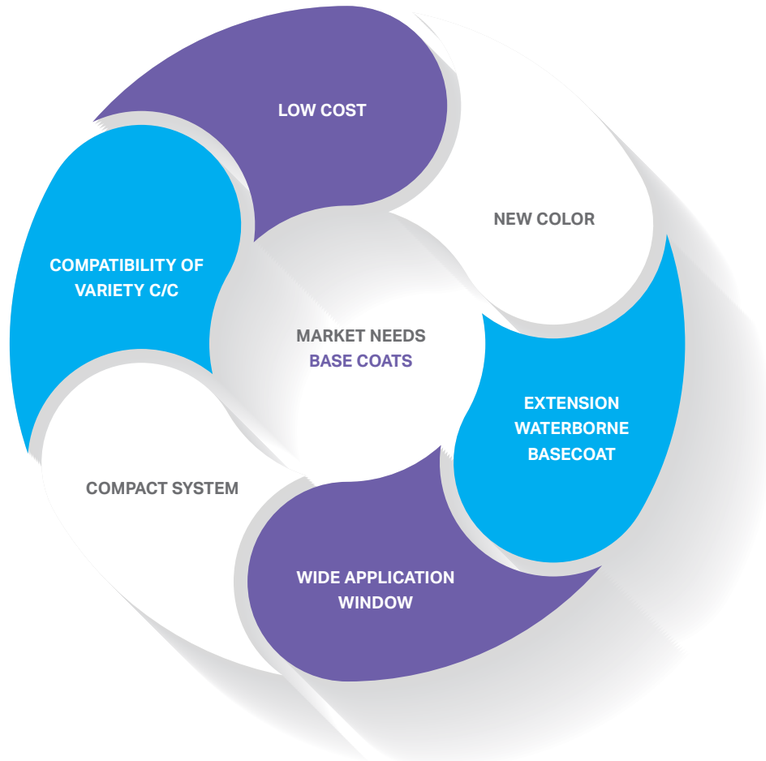


Primer surfacers are very important for the long-lasting good appearance of automotive finishes. Polyurethane-based primer surfacers offer the best possible balance between the opposing properties of elasticity (stone chip protection) and hardness (sandability). This balanced property profile has made polyurethane-based primer surfacers an industry standard. Covestro supplies the raw materials for both water- and solvent-borne primer surfacers that are designed to compensate for the roughness of the metal substrate and electrodeposition coating while providing resistance to stone chipping.

Our extensive product portfolio for primer surfacers covers:

- Waterborne polyurethane dispersions
- Blocked hydrophilic polyisocyanates
- Blocked polyisocyanates
- Polyester polyols
- Self-crosslinking stoving coatings for 1K systems
- Polyesters for melamine crosslinking systems
- Self-crosslinking dispersions

2. Base coats



Since the base coat provides the actual color of an automotive coating and any effects like wet-look or metallic finishes, the most important properties are good pigment wetting of the binder, bronze fixation, and long-term lightfastness. Base coats based on waterborne raw materials from Covestro offer considerable potential to reduce solvents (VOC emissions). In addition, waterborne polyurethane dispersions offer technical advantages with regard to special effects and stone chip protection.

Combinations of polyacrylate and polyurethane binders are mostly used in base coats, with the polyurethanes enhancing key properties such as brilliance, adhesion, flow characteristics and elasticity, which are important for stone chip resistance.

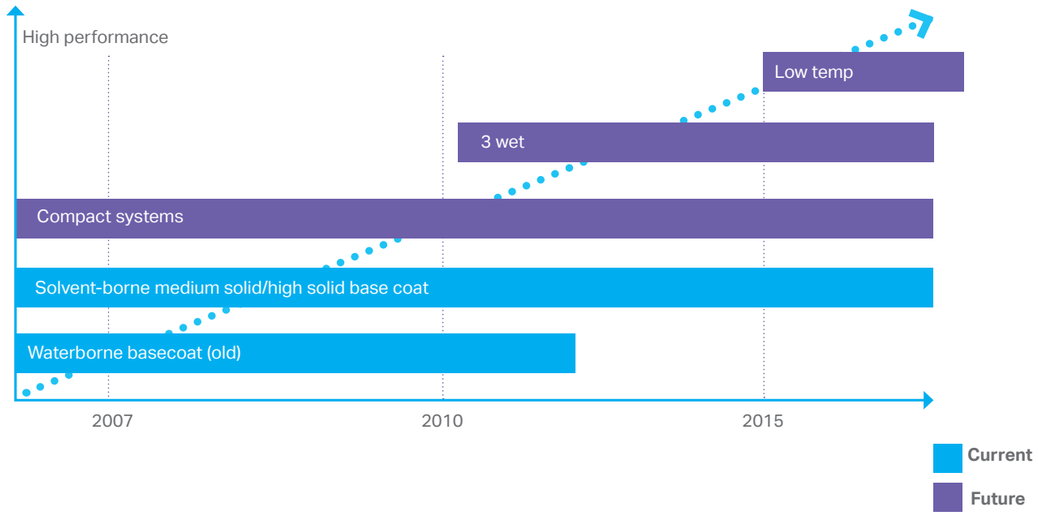
Our polyurethanes for base coats are marketed under the Bayhydrol® brand name, which also covers waterborne polyurethane dispersions as coating binders. We are continually working to improve the properties of our waterborne polyurethane dispersions and regularly bring innovative new products onto the market, for example.

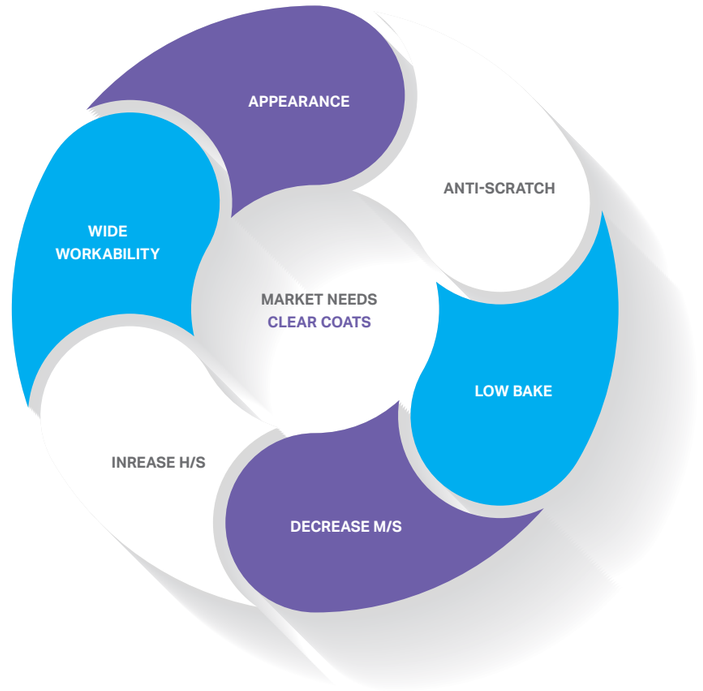
Bayhydrol® UA 2856 XP: New polyurethane dispersion with improved circular line stability

- Acrylic-modified, aliphatic polyurethane dispersion
- Form supplied: 35% in water
- Low thermoyellowing (based on co-binders)
- High flexibility
- Good hiding power

Superior automotive coatings to meet market needs

Base coat trend map



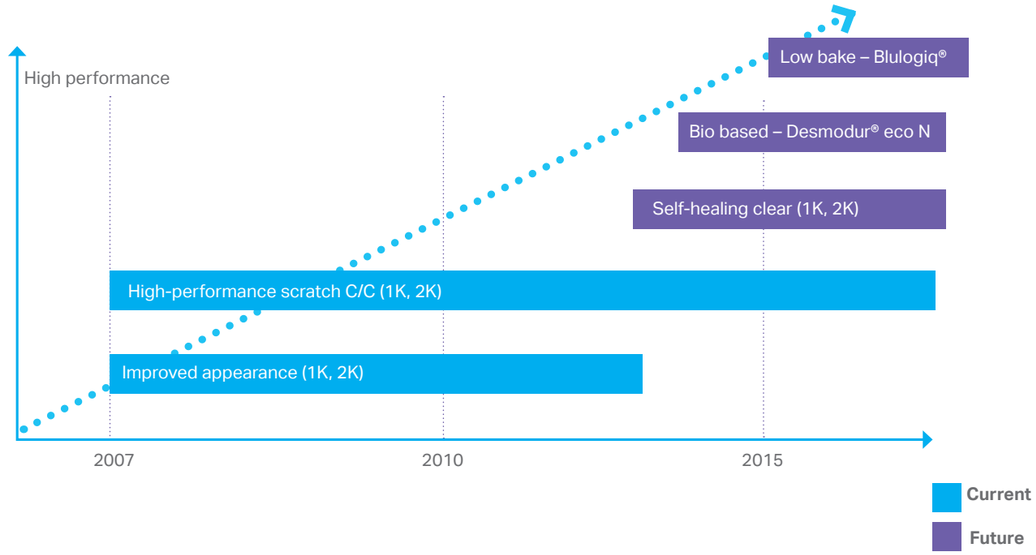


3. Clear coats

The driving forces in the OEM clear-coat market are coatings quality (appearance, scratch and etch resistance, weathering), application efficiency (faster curing systems, new coatings concepts), and environmental aspects (high solids and waterborne coatings).

Our water- and solvent-borne polyurethanes for 1K and 2K coating systems meet the automotive industry's high demands in all three areas. In recent years, self-healing (or scratch reflow) clear coats have added a particularly attractive dimension to the property profile of polyurethane-based coating systems.

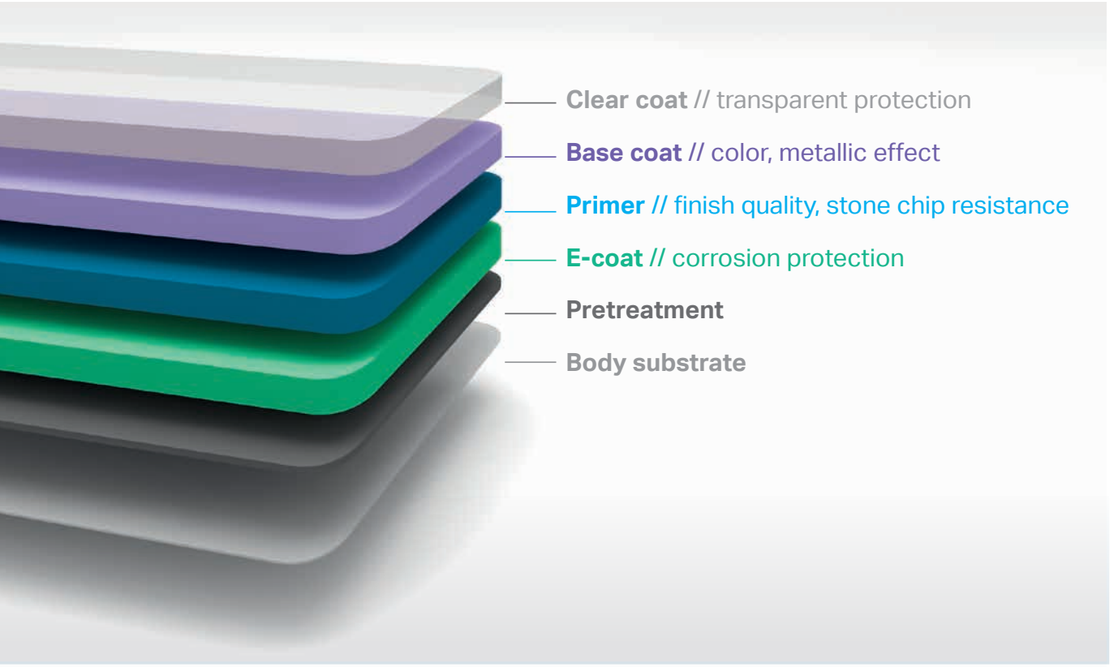
Clear coat trend map



Polyurethane coatings for automotive applications

Polyurethane-based coatings set the standard for all kinds of automotive coatings in terms of quality, efficiency and value conservation. Their appearance remains unchanged over a lengthy period of time, with high gloss and stable color maintained. These coatings systems provide reliable protection against weathering and aggressive substances. Moreover, polyurethane coatings are also available as environmentally friendly waterborne systems, which is particularly important in view of increasingly strict VOC regulations.
Covestro, the world's leading producer of polyurethane coating raw materials, is the technology leader in this field thanks to the standard-setting know-how its scientists have developed over many decades. Polyurethane systems are based on two components: polyisocyanates or polyurethane crosslinkers, where the Desmodur® trademark has become a synonym for isocyanates per se, and polyols or binders marketed as Desmophen®. Nowadays, waterborne polyurethane coatings based on raw materials from the Bayhydur®, Bayhydrol® and Bayhytherm® ranges are becoming more and more important for many automotive applications.

The complexity of the coating layers on a vehicle is illustrated by this diagram:



The unique chemistry of polyurethane coatings offers a number of inherent advantages:

- High reactivity and complete crosslinking, even if cured at low temperatures
- Good chemical and weather resistance
- Hardness, mechanical resistance and elasticity thanks to their urethane/urea structure
- Self-healing of superficial scratches thanks to the thermoplastic flow properties and release of internal stresses inherent in polyurethane's hydrogen bonds
- Good compatibility with primers
- High solids content/low VOC content
- Great optical properties – high gloss or wet look

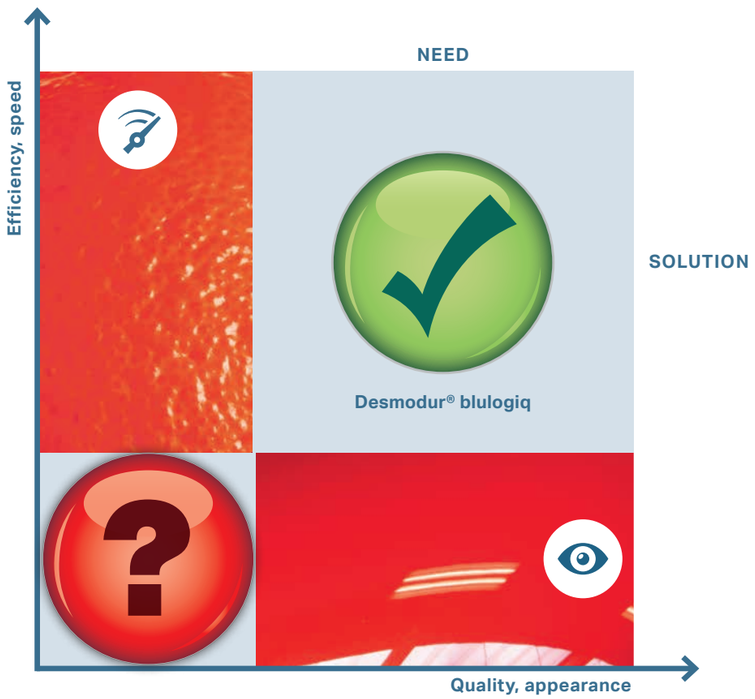
Polyurethane systems can be used in different layers, but their use is especially relevant for the clear topcoat, since other technologies cannot compete with the high performance of polyurethane.

A polyurethane clear coat for OEM applications is the reaction product of a polyisocyanate with an acrylate polyol. The subsequent baking process at 130–140°C lasts about 30 minutes. However, as lower temperatures would still allow a complete reaction, the quality of the coating does not depend on the strict maintenance of stoving conditions. Polyurethane clear coats can be applied to a large variety of primer surfacers and base coats, and can be formulated as both high solids and low-VOC coatings.

When speed meets appearance – innovative thermolatent hardener technology

Desmodur® blulogiq
Covestro has developed a unique technology for coating plastic parts on automobiles at low temperatures.

The clear coating of bumpers, mirror housings, spoilers, tailgates and roof modules can now be finished at an energy- and cost-efficient temperature of just 80°C. Although curing is up to 30% faster than with proven 2K polyurethane coatings, the appearance remains excellent. In the medium term, this technology will offer the possibility of coating plastic, composite and metal parts together in the near future.



Blulogiq®: Smart for several applications from efficiency to low temperature – without compromising appearance

Appearance problems solved

When using conventional, noncatalyzed coating technology, plastic parts generally need several days to dry completely after being coated with 2K polyurethane coatings. This leads to delays in further processing and requires special measures for storing the coated parts. For some time, catalysts have therefore been used for curing. However, their use means that crosslinking begins immediately after application. As a result, the coating cannot flow freely and fails to achieve the optimal appearance. Up to now, all attempts to satisfy the need for rapid curing without compromising on appearance have failed.

The new thermolatent hardener developed by Covestro solves the problem by separating film formation and hardening. As a result, the coating initially flows smoothly onto the plastic substrate and forms an even film. Only when the temperature rises is the hardener activated by a special latent catalyst. This ensures that the coating dries rapidly on the substrate. Despite this innovative new hardener, no significant changes to the coating formulation are required, which means that thermolatent 2K polyurethane systems can be used for coating plastic add-on parts in series production.

Improved energy efficiency and carbon footprint

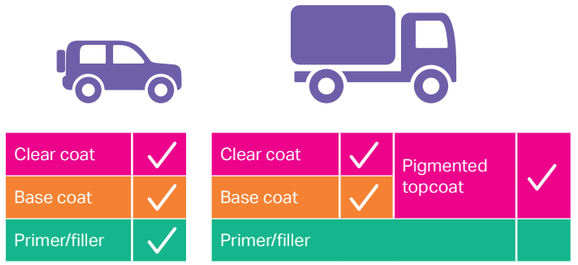
This low-temperature thermolatent hardener technology for clear-coating plastic add-on parts will also facilitate the development of OEM formulations for series production of lightweight vehicles featuring a material mix in the mid term. Moreover, the results of a joint study conducted by Covestro, a car manufacturer, a coatings formulator, coating experts, a manufacturer of coating lines, and a sustainability certification body reveal that this technology requires about 15% less energy and generates 10% fewer CO_2 emissions than the best currently available coating process.

OEM high bake line coating

Covestro's Blulogiq technology enables the implementation of energy- and cost-saving concepts in high bake line coating of metal body parts. The concept described below can be introduced at short notice, as no modifications to existing coating facilities are required. Although the heating-up phase of the coated part is prolonged in the curing oven, it is initially only heated to around 80°C. This temperature is maintained for a short time, during which the coating film fluidizes to create an even more uniform finish. Only then is the oven heated up to 140°C before the cooling phase commences. In all, the part remains in the curing oven for around 30 minutes, which is no longer than with the conventional coating process. The result is a clear coat with an even better appearance than conventional 2K polyurethane clear coats – without compromising curing.

Applications > 75°C (solvent-borne)

OEM plastic and metal

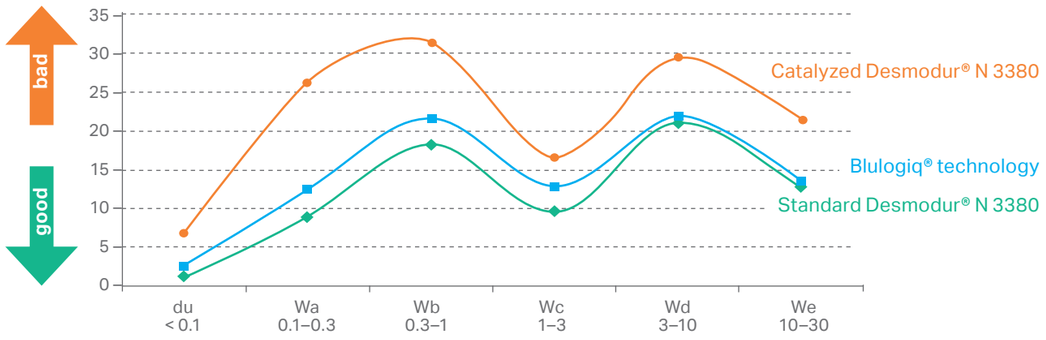


Key benefits

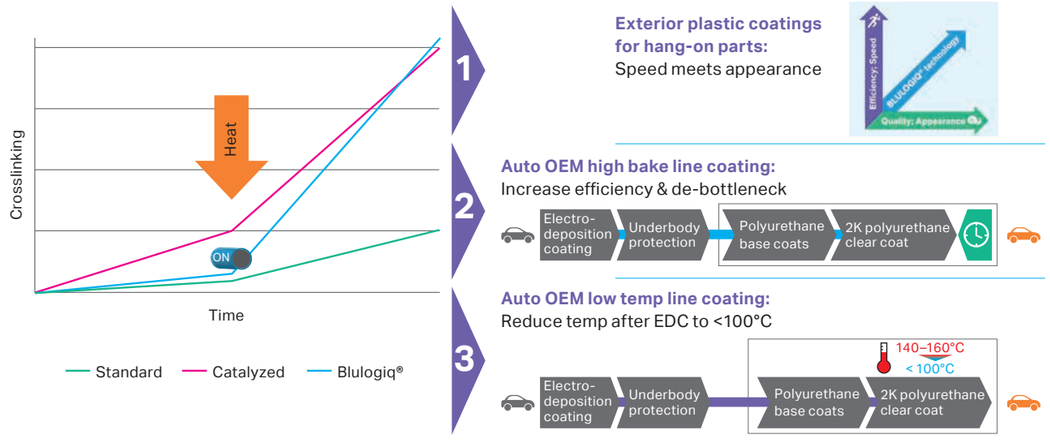
- Boosts process efficiency of OEM plastic and metal applications
- Almost no reaction during leveling – fast crosslinking at > 75°C enables very good appearance
- Crosslinking speed at 90°C is comparable to a 140°C noncatalyzed process
- Improved early resistance properties enable better post-processing, e.g., earlier and easier polishing, more robust handling, less damage during transport
- Little formulation modification required for plastic applications – just replace the hardener and conventional catalyst

Blulogiq delivers a better appearance than coating with a catalyst

Wavescan appearance results (on metal, e-coat, hydroprimer and black base coat)



Thermolatency combined with proven high-performance 2K PU technology



Desmodur® eco N – the first biobased polyurethane crosslinker

Sustainability is increasingly impacting on the product and raw-material purchasing decisions of customers, brand owners, and consumers. Although biobased polyol solutions have existed for a while, the limiting factor up to now in developing biobased polyurethanes has been the need for polyurethane crosslinkers based on renewable feedstock.

Now, however, Covestro has solved another part of the puzzle of how to develop more sustainable polyurethanes with the release of Desmodur® eco N 7300. This new solvent-free aliphatic polyisocyanate is the first polyurethane crosslinker on the market with a significant renewable content that does not come at the expense of performance.

Desmodur® eco N 7300 – the key benefits

- 70% renewable carbon content* derived from non-fossil-based inputs, i.e. no direct competition with the food chain
- Significant reduction in the cradle-to-carbon footprint compared to HDI derivatives
- Trimer based on a new aliphatic isocyanate pentamethylene diisocyanate (PDI), a revolutionary innovation in polyurethane chemistry as the first diisocyanate in 30 years to be fully developed and scaled up
- Near drop-in for hexamethylene diisocyanate (HDI)-based trimers, i.e., low reformulation requirement
- Same high-performance standards as HDI derivatives, even though this product is based on biomass
- Broader formulation flexibility than HDI-based products due to superior compatibility
- Crosslinker produced by the most energy-efficient gas phase technology

First launched at the European Coatings Show in April 2015, it is now commercially available.

* Confirmed by radiocarbon method ^{14}C measurement according to ASTM-D6866 standard

Environment-friendly adhesives for interior applications

Meeting market needs

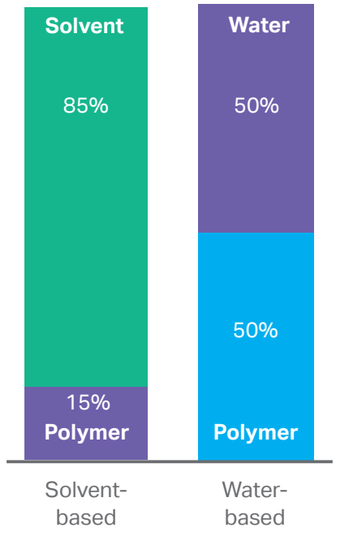
All over the world, stricter standards are being introduced to regulate air quality inside a vehicle. To comply with these stricter regulations on VOC emissions, automotive OEMs and tiers are proactively seeking environment-friendly adhesives for interior applications. Covestro offers a wide range of water-based adhesive raw materials that help address these air-quality requirements, produce a better driving environment and form aesthetically appealing interior surfaces. Besides compliance with strict air quality regulations, reliability and durability are the other key requirements for any adhesive used in the automotive industry. In addition to fulfilling these demands, Covestro enables auto OEMs and suppliers to achieve their goals of product differentiation, cost savings, and sustainability.

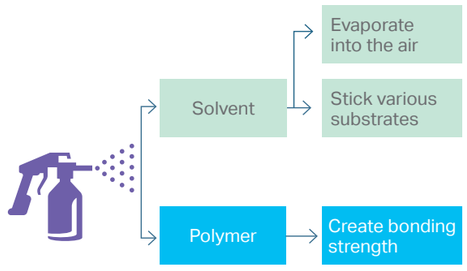
Reducing VOC emissions through Dispercoll® raw materials

Our waterborne adhesive raw materials based on polyurethanes and polychloroprenes are marketed under the Dispercoll® brand name. Polyurethane dispersions from the Dispercoll® U range are typically used for thermo-activated adhesive applications, e.g., vacuum deep drawing lamination of auto interior parts. PUD-based adhesives are the first choice for trim suppliers, especially for smaller and mid-sized series, as they allow for a most versatile process and high process efficiency. Polychloroprene dispersions from the Dispercoll® C range are mostly used for contact adhesives, e.g., for foam bonding applications.

The following diagram illustrates how VOC emissions can be reduced by using Dispercoll® raw materials:

Comparison of SB/WB adhesive solutions:





> Low VOC emissions in auto interior

> PUD easier to implement into an existing SB line

> No restricted substances in PUDs

> Improved HSE at the trim manufacturer's premises, with benefits for the operators' health

> Lower storage costs as less space is needed and no protective measures are required to store solvents

Economical and ecological benefits of waterborne polyurethane-based adhesives

Superior performance

- Fast build-up of bonding properties
- High initial and final bond strength
- Heat-activated and low-temperature bonding processes – perfect for temperature-sensitive laminates, e.g., natural leather
- Broad adhesion profile
- Durable, heat-resistant bonds

Easy & efficient process

- Easily processable
- High solids content
- High process efficiency and competitive manufacturing costs for small & mid-sized series

No solvents

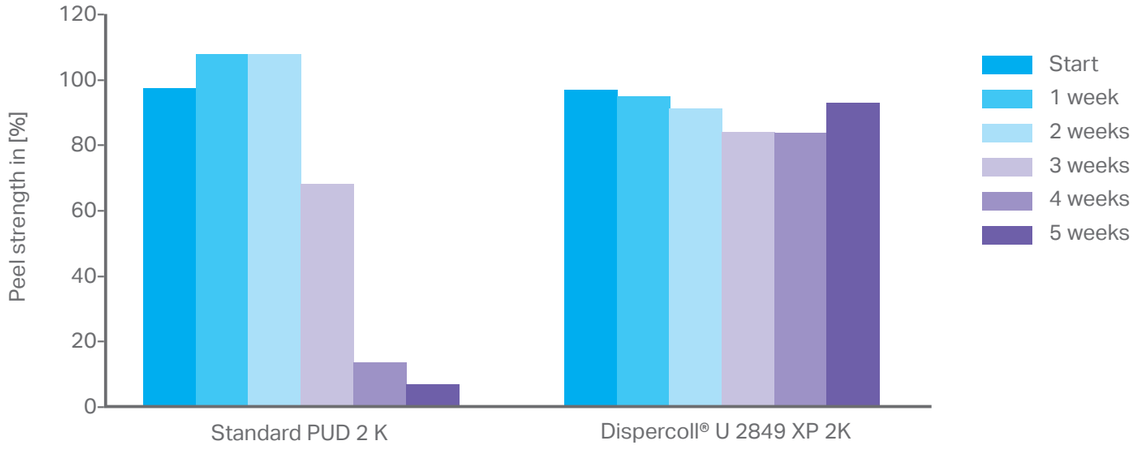
- Environmentally friendly – compliance with stricter VOC regulations
- Better workplace atmosphere
- Improved safety at work

Typical application: thermolamination bonding in vehicle interior

Dispercoll® U 2849 XP – new product, enhanced performance:

- Heat activation bonding
- Aliphatic, crosslinkable
- Very high humidity resistance

Climate resistance of canvas/canvas bonds
Ford test: 5 weeks at 70°C/95% rel. humidity



Reducing VOC emissions through Dispercoll® raw materials

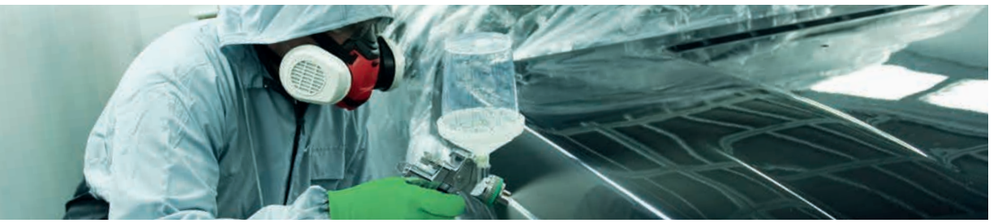
Thermolamination bonding is also a typical vehicle interior application for which our crosslinker technology for waterborne polyurethane adhesives is ideally suited:

BONDING TECHNOLOGIES	WATERBORNE 2K TECHNOLOGY	LATENT REACTIVE 1K TECHNOLOGY
Crosslinker	Hydrophilic modified polyisocyanate	Surface-deactivated solid polyisocyanate
Processing	2-component	1-component
Pot life of mixture	~ 8 hours	3 to 6 months
Open time of dried adhesive layer	~ 8 hours	> 6 months
Curing speed	Hours to days	Hours to days
Crosslinking reaction	a) Takes place at room temperature b) No heat activation necessary for crosslinking	Heat activation mandatory for crosslinking

Textile coatings – lasting luxury

There's nothing better than leather for luxury cars – nothing that exceeds the comfort, appearance, feel and durability of leather. Or is there? Well, actually there is: PUR synthetics based on Impranil® high solids and/or water-based PUR dispersions products from Covestro. Test PUR synthetics and you'll find it hard to distinguish from natural leather. But it's the properties you can't see – especially durability – that make PUR synthetics even better than natural leather. PUR synthetics is an excellent alternative to both natural leather and PVC leather, which it beats by far on appearance and comfort. What's more, the production of PUR synthetics is environmentally friendly and virtually emission-free. Isn't it time you switched to PUR synthetics for your car interiors?

Revitalizing cars with refinish coatings

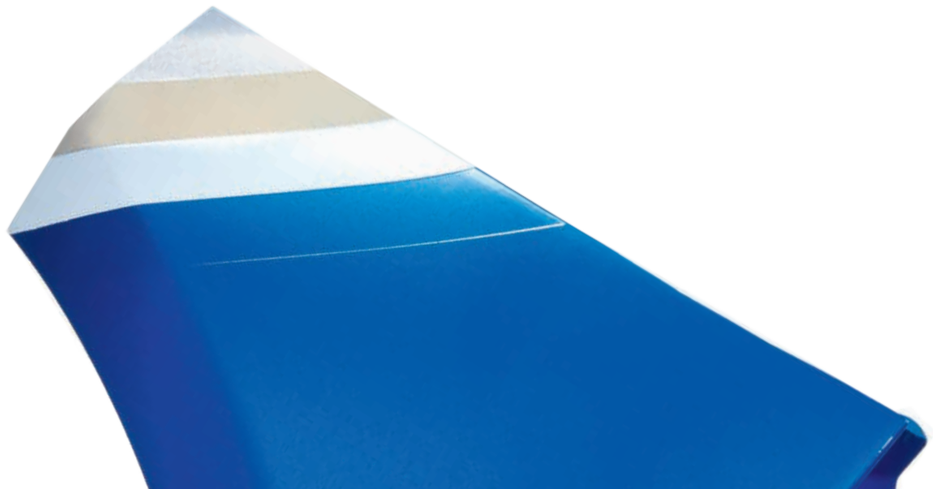


Refinishing challenges

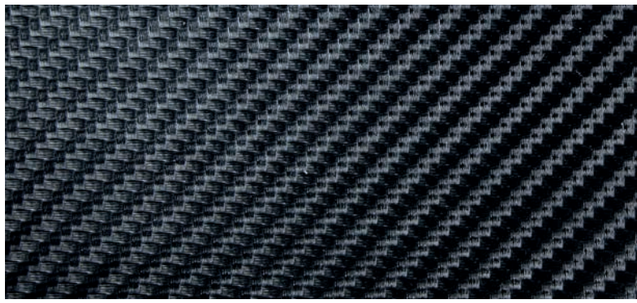
Whether a car needs a little touch-up or a complete overhaul, professionally applied polyurethane (PU) systems for automotive refinishing coatings can make it look like new again. The auto repair industry finds itself facing new challenges as the latest developments in car manufacturing have made repair processes increasingly complex. With the trend towards more fuel-efficient, lightweight cars, the new materials being introduced by OEMs often require special equipment or coating formulations for repair work. Furthermore, the ever-broader range of coating colors and special effects goes hand in hand with the refinishing customers' demand for shorter vehicle downtimes and flawless appearance.

Polyurethane-based solutions

As refinishing coatings have to display the same mechanical and optical qualities as factory-applied coatings, technical engineers, coating manufacturers and car body shops typically choose PU resin-based car refinishing paints. Here, Covestro provides a wide range of solvent- and waterborne systems that achieve the processing standards needed for refinishing coatings plus the high-quality performance to match factory-applied coatings. The extensive portfolio of high-quality, high-performance products Covestro offers enables coatings manufacturers to address these end-user requirements, improve the repairer's bottom line, and prepare for the challenges of tomorrow's world. Our raw materials, and in particular our Desmodur® polyisocyanate crosslinkers for high-solid, fast-drying and low-VOC refinish coatings, display excellent weather, corrosion and mechanical resistance that help deliver an OEM-quality refinishing that will repair and revitalize car paint.



Revitalizing cars with refinish coatings



Solvent-borne 2K polyurethane systems

As the market moves towards lower VOC emissions, low-viscosity polyisocyanates help to significantly reduce the use of solvents, while offering at least the same high performance as traditional solvent-borne coatings. Although the polyisocyanate component is typically the minor ingredient in a coating system, the impact of its functionality and viscosity on the properties of refinishing coatings is significant. For high-performance 2K clear coat, primer and filler systems, aliphatic polyisocyanates from Covestro are the top choice.

Solvent-reduced high solids PU coatings systems known as polyaspartics offer extremely low solvent content. They also help achieve the maximum solids content with a combination of reactive thinners and low-viscosity polyisocyanates plus a polyaspartics polyol. Moreover, these high solids solvent-borne auto refinishing systems contain less than 250 g/l of solvent. Polyaspartics can be the basis for knifing putty and primer surfacers with rapid-dry sandability, good adhesion on metal substrates, and excellent corrosion protection. In the formulation of very high solids clear coats, polyaspartics offer the benefits of very fast drying times at ambient temperatures, high brilliance, and good chemical resistance. Polyaspartics-based systems offer manufacturers of repair coatings systems substantial reductions in both cycle times and energy consumption, while fulfilling the highest quality requirements.

Waterborne refinishing coatings – high performance and low VOCs

Waterborne car refinishes use polyurethane-based resins from Covestro to create eye-catching colors and effects. Refinish basecoats increasingly use polyurethane-based waterborne coating systems to achieve a factory-like finish. Waterborne refinishing coatings utilize polyurethane binders that display good pigment wetting, very good wet color matching, bronze fixation, and excellent color retention. Polyurethane resins also enhance the elasticity of the coatings system to ensure greater stone chip resistance.

Waterborne 2K polyurethanes are also used for clear coats. Mixing quality, temperature and ambient moisture are the key factors in achieving the ideal coating, i.e., a bubble-free dry film thickness. Covestro offers waterborne polyols and polyisocyanates for hydro-clear coat formulations that fulfill the highest standards for clear coats. Moreover, waterborne car refinishing coatings help reduce the solvent content of coating formulations, while fulfilling the requirements of the Decopaint Directive 2004/42/EC, a regulation that limits VOCs in paint.

Fast-lane access to polyurethane innovations

At Covestro, innovation is in our DNA. Ever since Otto Bayer discovered polyurethanes in 1937, we have been driving polyurethane innovations in coatings and adhesives as well as in other application areas. As our partners, you enjoy fast-lane access to polyurethane innovations, and can help us in developing the next generation of polyurethanes to meet the industry's upcoming challenges and needs. What can we offer you?

- Powerful know-how on both established and new polyisocyanates, as well as on new polyurethane hybrid technologies
- The prospect of new application technologies to enable efficient processes
- More sustainable, biomass- or CO_2-based materials that do not sacrifice high performance

Join us to shape the future!