Advanced Polymer Technologies for Adhesives.

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Building a circular future, together

The demand for more circular solutions is rising at a faster pace than ever before as the world collectively strives to tackle today's global challenges. Climate change, population growth, urbanization, digitalization and mobility are pushing players from every sector to find more sustainable solutions and lay the foundations for climate neutrality by driving a Circular Economy. The challenge is not only to create these circular solutions but also to maintain quality, durability and productivity.

Innovation is key to satisfying these demands and creating added value for customers, society and the environment by turning targets into realities. At Covestro, our long-standing expertise in aliphatic and aromatic polyisocyanates and more sustainable resins goes hand in hand with our purpose to constantly push boundaries in the search for future-oriented solutions. Through joint solutions, alternative raw materials, innovative recycling, and harnessing renewable energy, we're enabling coatings and adhesives producers to meet the circular challenge, here and now.

We're expanding our portfolio to include bio-based or recycled raw materials in coatings, adhesives, and specialty areas from cosmetics to textiles to 3D printing. Thanks to our mass balancing approach, we're helping close the loop by gradually replacing fossil fuels with ISCC-certified renewable resources. Our drop-in solutions ensure the high quality, consistent performance and easy processing that keep your production running smoothly. And we're constantly working to provide the global support, facilities and supply chain security you need to forge yet more circular innovations in infrastructure, automotive, furniture and more.

Material solutions can help turn circular targets into realities. Let's make the world a brighter place, together.

Adhesives

We work closely with adhesive formulators to improve the sustainability and performance of everyday products. Using our specialty resins for adhesives. We draw upon our broad understanding of materials science and applications across the full resin spectrum; from water-based acrylics, urethanes, and urethane-acrylics to solvent based polyesters, in both one and two-component technologies.

Our collaborations have produced new innovations to enhance people's lives. Like an adhesive for beer bottle labels which makes them easier to recycle. Or creating a durable adhesive for identity cards so it stands up to intensive use and exposure to extreme conditions. Sustainability is a key focal area for Covestro. Working together we can help you develop adhesive solutions for your products and move to more sustainable production processes to create a better future for everyone.

Packaging adhesives

For packaging materials used in food and other consumer products, we have developed specialty resins for laminating adhesives in close partnership with leading adhesives manufacturers and converters. This resulted in resins to laminate different films at lower temperatures to produce a multi-layered packaging closure, thereby reducing the time and energy needed for production.

In addition, we created a stronger package that offers better protection for computer accessories purchased in a store. Whether you want to improve adhesion, reduce odor or use more environemtally friendly materials, our unique experience in materials science and applications for adhesive laminates can help resolve your toughest problems.

Industrial lamination

Our specialty resins for industrial lamination literally hold the world together. They help create kitchen cupboards that last longer, day in and day out, in every ambient temperature. Credit cards laminated with adhesives based on our specialty resins are easy to read and extremely durable, no matter how often they are used. We work with customers across the industrial lamination industry to develop resins for adhesive laminate systems that make people's lives easier. Our unique expertise in adhesive applications and materials science produces adhesive laminates that perform reliably around the globe and require less energy to apply. Together we can work to develop innovative adhesives to meet new performance, cost, production, or environmental requirements.

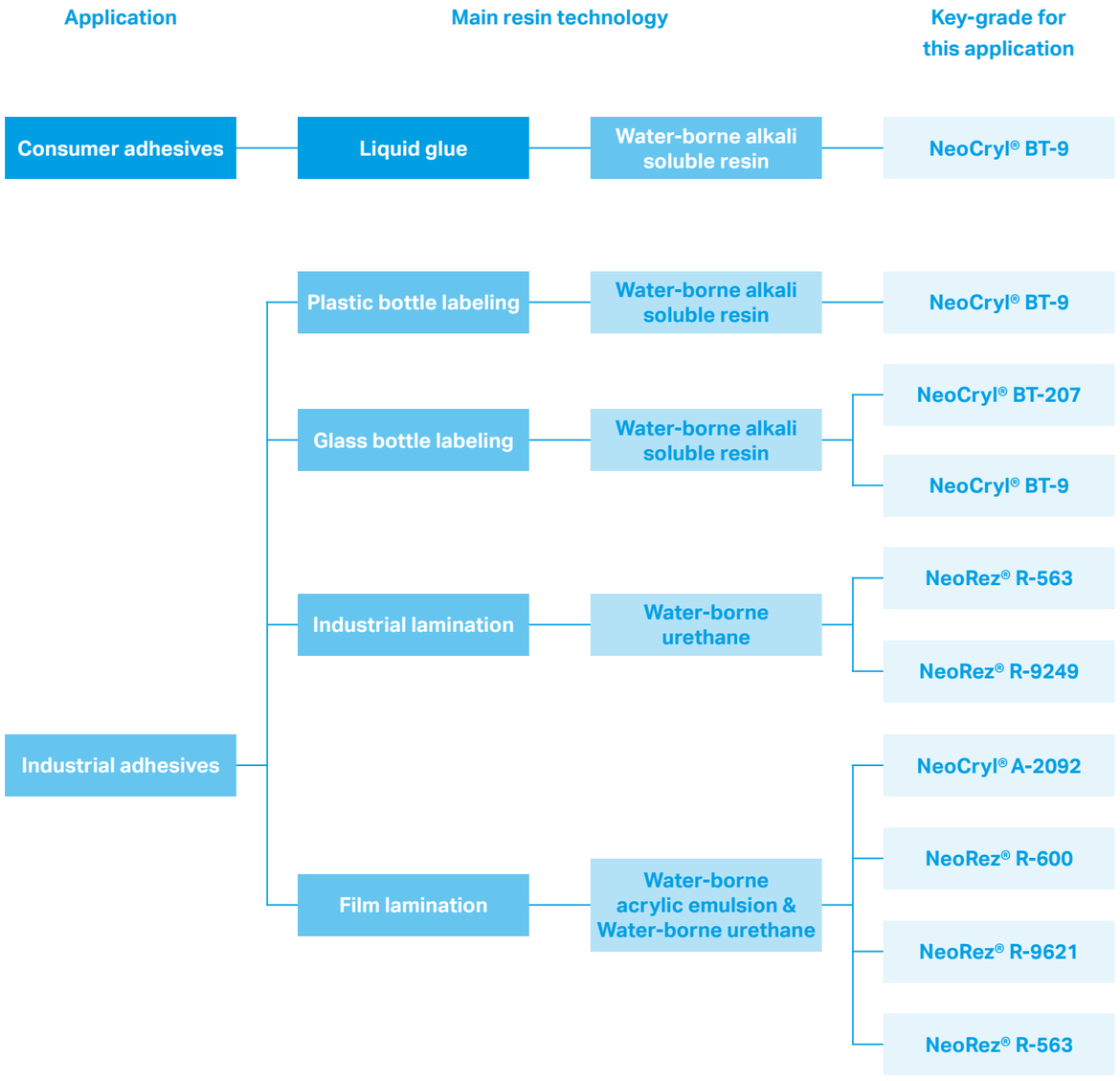
Consumer adhesives

By using our specialty resins, the consumer adhesive manufacturer is able to create universal adhesives for children that will dry as a clear film on their artwork and washes off easily with soap and water and from clothing in a typical detergent wash. These are some of the bright ideas that have resulted from our close co-operation with adhesive formulators and manufacturers.

…All based on our cutting edge understanding of resin chemistries and adhesive applications. Do you want to improve performance, lower costs, or move to more sustainable adhesives? We have the experience and know-how in specialty resins to help.

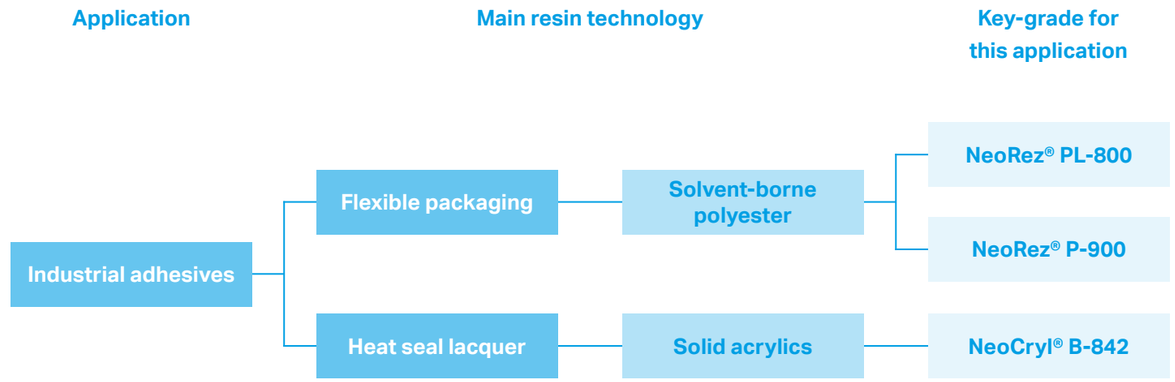
Adhesives applications

Water-borne



Adhesives applications

Solvent-borne



Water-borne alkali soluble resins

	SOLIDS (%)	VISCOSITY (mPas) @ 23°C	pH	ACID VALUE (mg KOH/g)	Tg (°C)	DESCRIPTION	MAIN BENEFIT(S)	BOTTLE LABELING	CONSUMER ADHESIVES	INDUSTRIAL LAMINATION	FILM LAMINATION	WOOD LAMINATION	GENERAL ASSEMBLY	PAPER / PAPERBOARD	WOOD	METAL (ALUMINUM, STEEL)	GLASS	BOPP	PET	PVC	ACTIVATION TEMPERATURE	BOND STRENGTH	BROAD SUBSTRATE ADHESION	HEAT RESISTANCE	WATER RESISTANCE	ICE WATER RESISTANCE	RESOLUBILITY	FORMULATION GUIDELINES
NeoCryl® BT-9	40	15	5.5	72	1	Flexible alkaline soluble resin.	Broad adhesion characteristics; PET, glass and paper. Flexible clear film, excellent resolubility. Suitable for bottle labeling as well as consumer hobby adhesives.	●	●					●	●		●		●	●	n/a	++	++	n/a	+	+	++	●
NeoCryl® BT-207	43	50	3	200	10	Alkali soluble resin, with flat pH-viscosity properties.	Synthetic alternative to casein. Very high and stable viscosity profile in pH range of 8.2-8.6. Good adhesion to glass, caustic resolubility, hyper-condensation resistant.	●						●			●				n/a	++	+	n/a	++	++	++	●
NeoCryl® XK-39	45	60	2.3	129	67	Hard non-blocking alkaline soluble acrylic copolymer emulsion.	Rheology modifier, blending resin too increase hardness and improve block resistance.		●					●	●						n/a	+	+	+	n/a	n/a	n/a	●

Water-borne acrylic emulsions

	SOLIDS (%)	VISCOSITY (mPas) @ 23°C	pH	MFFT	Tg (°C)	DESCRIPTION	MAIN BENEFIT(S)	BOTTLE LABELING	CONSUMER ADHESIVES	INDUSTRIAL LAMINATION	FILM LAMINATION	WOOD LAMINATION	GENERAL ASSEMBLY	PAPER / PAPERBOARD	WOOD	METAL (ALUMINUM, STEEL)	GLASS	BOPP	PET	PVC	ACTIVATION TEMPERATURE	BOND STRENGTH	BROAD SUBSTRATE ADHESION	HEAT RESISTANCE	WATER RESISTANCE	ICE WATER RESISTANCE	RESOLUBILITY	FORMULATION GUIDELINES
NeoCryl® A-45	37.5	30	9.8	<4	-15	Highly flexible, modified acrylic copolymer emulsion.	High adhesion to PP, good water and solvent resistance. Compatible with water based urethanes. Blending resin.			●	●		●	●	●			●	●	●	n/a	+	++	+	+	n/a	n/a	
NeoCryl® A-662	40	20	7.5	>90		Acrylic styrene copolymer emulsion.	Adhesion to plastic substrates such as: ABS, PS and PC.			●	●		●	●					●	●	n/a	+	+	n/a	+	n/a	n/a	
NeoCryl® A-1120	55	600	8.3	<0	-30	High solids self-crosslinking emulsion.	Very fast drying and excellent adhesion to polyolefin and polyamide films. Suitable for paper to film wet lamination.			●	●		●	●		●		●	●		n/a	+	++	++	++	n/a	n/a	
NeoCryl® A-1121	50	90	8.3	<0	-30	High solids self-crosslinking emulsion.	Very fast drying and excellent adhesion to polyolefin films. Suitable for paper to film lamination.			●	●			●		●		●	●		n/a	+	++	++	++	n/a	n/a	
NeoCryl® A-2092	48	300	8.2	6	8	Tough and flexible modified acrylic styrene copolymer dispersion.	Water and grease resistant and good wetting. Adhesion to many substrates incl. pre-treated polyolefins. Suitable for heat sealing applications. Direct food contact approved (EU & FDA).	●		●	●			●			●		●		+	+	+	+	++	+	n/a	

Water-borne (acrylic) urethanes

	SOLIDS (%)	VISCOSITY (mPas) @ 23°C	pH	ELONGATION (%)	DESCRIPTION	MAIN BENEFIT(S)	CONSUMER ADHESIVES	INDUSTRIAL LAMINATION	FILM LAMINATION	WOOD LAMINATION	GENERAL ASSEMBLY	PAPER / PAPERBOARD	WOOD	METAL (ALUMINUM, STEEL)	GLASS	BOPP	PET	PVC	ACTIVATION TEMPERATURE	BOND STRENGTH	BROAD SUBSTRATE ADHESION	HEAT RESISTANCE	WATER RESISTANCE	FORMULATION GUIDELINES
NeoRez® R-551	35.5	350	8	650	Cosolvent free polyurethane dispersion, for use in contact and lamination adhesives.	One component system. Good heat resistance, clear, water white and stable. Excellent adhesion to a variety of substrates.			●			●		●					●	+	++	+	++	++	●
NeoRez® R-563	38	300	8.2	630	Cosolvent free polyurethane dispersion for use in laminating adhesives.	Clear, water white and light stable, excellent adhesion to a variety of substrates, particularly plastics. Heatactivatable.			●	●	●	●		●					●	+	++	++	+	+	
NeoRez® R-600	33	100	8.2	–	Aliphatic urethane dispersion designed with excellent adhesion to a variety of plastic substrates.	Excellent adhesion to a large variety of substrates, including olefinic materials. Suitable as primer for various olefin materials.			●	●							●	●		n/a	++	++	+	+	
NeoRez® R-9249	50	<200	5	600	Cosolvent free, nonionic, water-borne aromatic urethane.	Heat activatable resin. High heat resistance when crosslinked. Broad formulation compatibility.			●	●	●	●		●				●	●	++	++	++	++	++	
NeoRez® R-9340	48	340	6.8	–	Non-ionic polyester urethane dispersion.	High adhesion resin for plastics, including untreated polyester and ABS.			●	●	●	●		●			●	●	●	++	++	++	+	+	●
NeoRez® R-9621	38	300	8.2	630	Cosolvent free polyurethane dispersion for use in laminating adhesives.	Clear, water white, excellent adhesion to plastics. Good green strength.			●	●	●	●		●					●	+	++	++	+	+	

Additives/crosslinkers

	SOLIDS (%)	VISCOSITY (mPas) @ 23°C	DESCRIPTION	MAIN BENEFIT(S)		BOTTLE LABELING	CONSUMER ADHESIVES	INDUSTRIAL LAMINATION	FILM LAMINATION	WOOD LAMINATION	GENERAL ASSEMBLY	PAPER / PAPERBOARD	WOOD	METAL (ALUMINUM, STEEL)	GLASS	BOPP	PET	PVC	ACTIVATION TEMPERATURE	BOND STRENGTH	BROAD SUBSTRATE ADHESION	HEAT RESISTANCE	WATER RESISTANCE	ICE WATER RESISTANCE	RESOLUBILITY	FORMULATION GUIDELINES	
Crosslinker CX-100	100	200	Polyaziridine crosslinker.	Performance improvement.				●	●	●	●	●	●	●	●	●	●	●	n/a	++	++	++	++	+	n/a	
Crosslinker CX-300	50	200	Carbodiimide crosslinker.	Performance improvement.				●	●	●	●	●	●	●	●	●	●	●	n/a	++	++	++	++	+	n/a	

Solvent-borne polyesters

	SOLIDS (%)	VISCOSITY (mPas) @ 23°C	pH	ACID VALUE (mg KOH/g)	DESCRIPTION	MAIN BENEFIT(S)	BOTTLE LABELING	CONSUMER ADHESIVES	INDUSTRIAL LAMINATION	FILM LAMINATION	WOOD LAMINATION	GENERAL ASSEMBLY	PAPER / PAPERBOARD	WOOD	METAL (ALUMINUM, STEEL)	GLASS	BOPP	PET	PVC	ACTIVATION TEMPERATURE	BOND STRENGTH	BROAD SUBSTRATE ADHESION	HEAT RESISTANCE	WATER RESISTANCE	ICE WATER RESISTANCE	RESOLUBILITY	FORMULATION GUIDELINES
NeoRez® P-900	50	3500	N/A	–	High molecular weight polyester film lamination resin. Solution in Ethyl Acetate.	Flexible Packaging applications. Film lamination resin offering retort performance and food contact compliance.				●					●		●	●		n/a	++	+	++	++	++	n/a	●

Solid acrylics

	SOLIDS (%)	Tg (°C)	SOLUBILITY IN SOLVENT *1	ACID VALUE (mg KOH/g)	OH VALUE (mg KOH/g)	R&B	DESCRIPTION	MAIN BENEFIT(S)	BOTTLE LABELING	CONSUMER ADHESIVES	INDUSTRIAL LAMINATION	FILM LAMINATION	WOOD LAMINATION	GENERAL ASSEMBLY	PAPER / PAPERBOARD	WOOD	METAL (ALUMINUM, STEEL)	GLASS	BOPP	PET	PVC	ACTIVATION TEMPERATURE	BOND STRENGTH	BROAD SUBSTRATE ADHESION	HEAT RESISTANCE	WATER RESISTANCE	ICE WATER RESISTANCE	RESOLUBILITY	FORMULATION GUIDELINES
NeoCryl® B-723	100	54	C,E,H,K	5.5	<1	194	BMA/MMA copolymer.	Heat resistant and durable resin. Good adhesion to metal, NC-compatible.						●			●					n/a	+	+	+	+	n/a	n/a	
NeoCryl® B-842	100	38	C,E,H,K	<1	<1	155	High flexible BMA copolymer.	Glossy resin with broad compatibility. High adhesion to many substrates like aluminum and polystyrene. Used in heat seal lacquers on aluminum yoghurt-lids. Also used in ceramic glazing.						●			●		●			++	++	++	+	+	n/a	n/a	●

*1 **C** Aromatic solvents (e.g. xylene) **E** Esters (e.g. ethylacetate) **H** Higher alcohols (e.g. butanol) **K** Ketons (e.g. acetone, MEK)