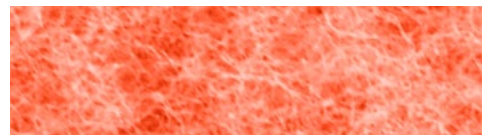




Product Selection Guide

Binders for Textile & Nonwoven Markets & Applications

Leading the Way to Environmentally Advanced Binders



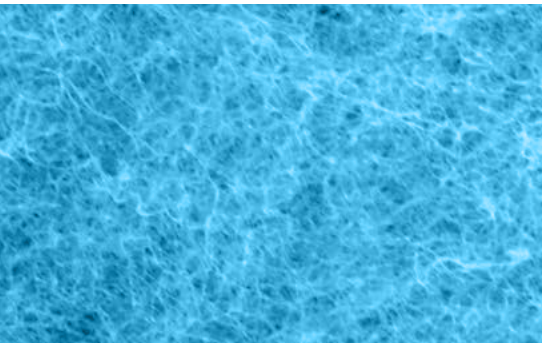


Adhesive Solutions for the Global Nonwovens Industry

Dow Adhesives offers the global nonwovens industry a portfolio of fiber binding solutions that covers multiple applications, both in the single-use and durable segments.

Dow's low and ultra-low formaldehyde binding technologies suit nonwovens end uses, spanning from wipes to clothing, from medical to filtration, automotive to wall coverings, and more.

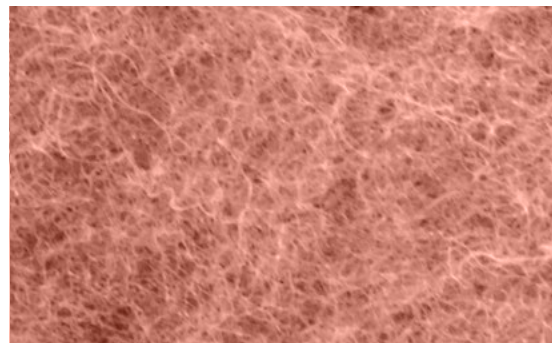
The RHOPLEX™ and RHOPLEX ECO™ Technology Platforms build upon the innovative approach to acrylic emulsion technologies which made Dow a pioneer in ultra-low formaldehyde binders. This technology helps address the regulatory challenges in the nonwovens market and enables Dow to keep refining and integrating the range of soft and hard binders, providing tailored solutions in terms of bonding strength, flexibility, and durability.



The portfolio of binders can deliver selected combinations of benefits valuable for specific end-uses:

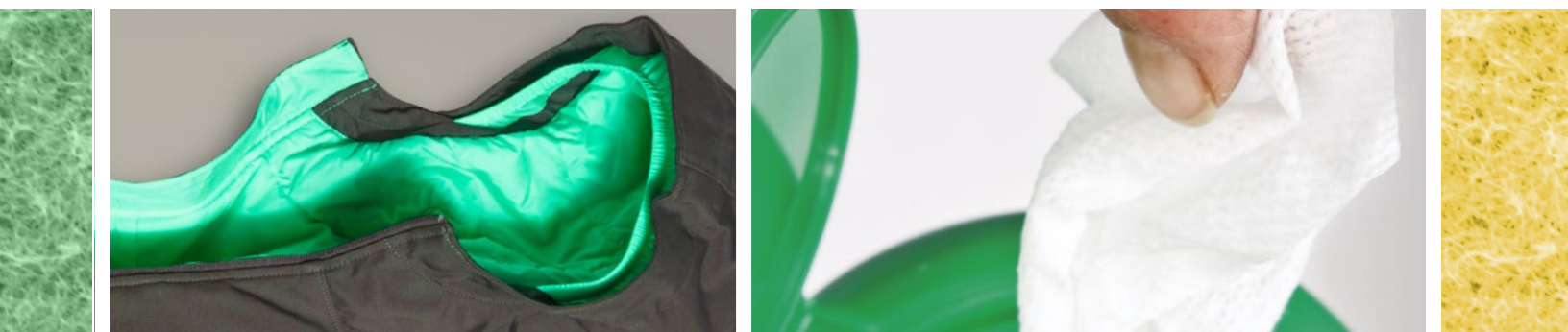
- Durability and consistency of strength in wet and wash conditions, or in exposure to alcohols, solvents, or dry cleaning processes
- Targeted haptic and mechanical responses, like softness, firmness, resiliency and compression recovery, and flexibility
- Specific fluid management performance, from hydrophobic to hydrophilic
- Dedicated features like heat-sealability or controlled residual tackiness

In conjunction with our robust product portfolio, customers are supported by the technical expertise of Dow Adhesives specialists. As a world-leading supplier of water-based acrylic adhesives, Dow works with customers to grow and succeed together in both existing and emerging markets.



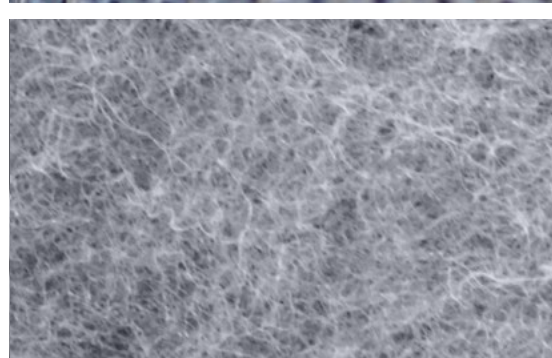
Product Selection Guide for Binders for Nonwoven Markets & Applications

WIPES		PRODUCT	TG °C	DESCRIPTION
End Use Applications: <ul style="list-style-type: none">• Personal care wet wipes• Industrial & household dry wipes	Key Properties: <ul style="list-style-type: none">• Soft/medium hand• Solvent & water resistance; absorbency• Flexibility & strength• Wet & lotion; skin contact	RHOPLEX™ ECO-3482	-27	APE-free, ultra-low formaldehyde acrylic emulsion; excellent wet tensile strength, very soft hand, excellent wash durability, self-crosslinking, good color and formulation stability, excellent runnability
		RHOPLEX™ NW-1402	-11	Acrylic binder designed for excellent mechanical stability in nonwoven applications
		RHOPLEX™ HA-8	-10	General purpose acrylic binder that imparts a soft hand to nonwovens
		RHOPLEX™ ECO-3988	+7	APE-free, low formaldehyde, high solids acrylic binder with outstanding water and solvent resistance
		RHOPLEX™ E-358	+8	High solids acrylic binder with outstanding water and solvent resistance
HYGIENE		PRODUCT	TG °C	DESCRIPTION
End Use Applications: <ul style="list-style-type: none">• Diapers• Adult incontinence• Feminine hygiene	Key Properties: <ul style="list-style-type: none">• Softness• Strength• Absorbency• Heat sealability• Skin contact	HYPD™ 8503	-53	Polyolefin dispersion; softness
		RHOPLEX™ NW-1845K	-21	APE-free, ultra-low formaldehyde, styrenated acrylic emulsion; ideal combination of hydrophobicity, toughness, and film strength
		RHOPLEX™ NW-1402	-11	Acrylic binder designed for excellent mechanical stability in nonwoven applications
		RHOPLEX™ HA-8	-10	General purpose acrylic binder that imparts a soft hand to nonwovens
		RHOPLEX™ NW-1715K	-6	APE-free hydrophobic styrene acrylic binder; salt stable and heat sealable; especially suited for polyester fiber applications without other associated formaldehyde
AUTOMOTIVE		PRODUCT	TG °C	DESCRIPTION
End Use Applications: <ul style="list-style-type: none">• Noise reduction• Hood & trunk liners• Several other applications	Key Properties: <ul style="list-style-type: none">• Strength• Temperature resistance• Moisture resistance• Recovery	RHOPLEX™ ECO-3482	-27	APE-free, ultra-low formaldehyde acrylic emulsion; excellent wet tensile strength, very soft hand, excellent wash durability, self-crosslinking, good color and formulation stability, excellent runnability
		RHOPLEX™ ST-954	-23	APE-free soft acrylic binder that provides nonwovens with the highest durability, including excellent tensile strength, soft hand, and very good solvent resistance
		PRIMAX™ 210K	-7	Durable, suitable for backcoating, good low temperature flexibility, good shear stability
		RHOPLEX™ ECO-3988	+7	Low formaldehyde, excellent wash and dry clean durability
		RHOPLEX™ ECO-100	+35	APE-free, ultra-low formaldehyde acrylic emulsion; provides a firm hand, high strength, very good durability to wash, self-crosslinking, good color and formulation stability, excellent runnability
		RHOPLEX™ TR-407	+34	APE-free, all-purpose acrylic binder that provides outstanding color stability and good processability; especially suited for highloft applications
		RHOPLEX™ HA-16	+35	General purpose acrylic binder designed for applications requiring both stiffness and durability





FILTRATION		PRODUCT	TG °C	DESCRIPTION
End Use Applications: <ul style="list-style-type: none">• Air & liquid filtration	Key Properties: <ul style="list-style-type: none">• Strength• Stiffness• Hydrophobicity• Flutability• UF/PF compatibility• Recovery	RHOPLEX™ E-32NP	+5	Versatile acrylic binder designed to provide outstanding solvent resistance
		RHOPLEX™ E-358	+8	High solids acrylic binder with outstanding water and solvent resistance
		RHOPLEX™ TR-407	+34	APE-free, all-purpose acrylic binder that provides outstanding color stability and good processability; especially suited for highloft applications
		RHOPLEX™ ECO-100	+35	APE-free, ultra-low formaldehyde acrylic emulsion; provides a firm hand, high strength, very good durability to wash, self-crosslinking, good color and formulation stability, excellent runnability
		RHOPLEX™ HA-16	+35	General purpose acrylic binder designed for applications requiring both stiffness and durability
		RHOPLEX™ GL-618	+36	APE-free acrylic (saturant), hydrophobic, low-foaming acrylic binder that offers excellent stability with UF resins in glass mat applications
		RHOPLEX™ ECONEXT 1101	+58	Stiff, hydrophobic, pleatable, ultra-low formaldehyde acrylic binder
		AQUASET™ 100	+100	Formaldehyde-free acrylic solution polymer (replacement for aminoplast resins); good tensile strength, durability, flame response
WALLCOVERINGS & DECORATIVE LAMINATES		PRODUCT	TG °C	DESCRIPTION
Key Properties: <ul style="list-style-type: none">• Hydrophobicity• Stiffness• Strength• Excellent flexibility• Dimensional stability• Opacity	<ul style="list-style-type: none">• Hand – soft to hard• Hydrophilic or hydrophobic behavior• Softness• Resistance to alcohol & water	RHOPLEX™ ECO-3482	-27	APE-free acrylic binder for wood pulp nonwoven applications combining softness and durability; ultra-low formaldehyde
		RHOPLEX™ ECO-3988	+7	APE-free, low HCHO, high solids acrylic binder with outstanding water and solvent resistance; low formaldehyde; mid Tg
		RHOPLEX™ 52	+17	High performance binder with excellent stain blocking capability; adheres well to a variety of substrates
		RHOPLEX™ ECO-100	+35	APE-free acrylic binder for wood pulp nonwoven applications that provides very good durability to wash; ultra-low formaldehyde; high Tg
HIGHLOFT		PRODUCT	TG °C	DESCRIPTION
End Use Applications: <ul style="list-style-type: none">• Abrasive pads• Air filters• Fiber fill• Insulation	Key Properties: <ul style="list-style-type: none">• Strength• Durability• “Bounce-backability”• Sprayability	RHOPLEX™ TR-653	-17	APE-free acrylic binder designed to impart excellent resilience to nonwovens
		RHOPLEX™ E-32 NP	+5	Versatile acrylic binder designed to provide outstanding solvent resistance
		RHOPLEX™ TR-407	+34	APE-free, all-purpose acrylic binder that provides outstanding color stability and good processability; especially suited for highloft applications
		RHOPLEX™ HA-16	+35	General purpose acrylic binder designed for applications requiring both stiffness and durability



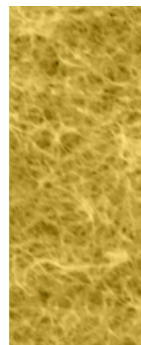
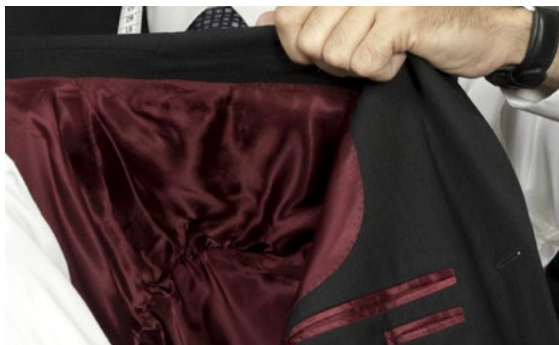
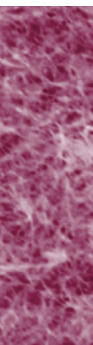
Binders for Textile Markets & Applications

For the textiles marketplace, Dow offers a comprehensive portfolio of high-performing, water-based acrylics binders and formulation ingredients suitable for applications, such as pigment printing, coating, and flocking. In conjunction with

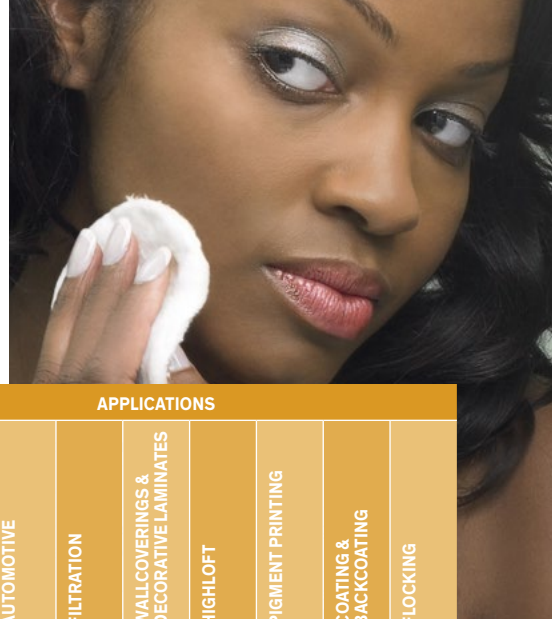
our robust product portfolio, customers can rely on the technical expertise of Dow Adhesives specialists. As a world-leading supplier of water-based acrylic adhesives, Dow works with customers to grow and succeed together in both existing and emerging markets.

For more information regarding any of these products, or to discuss how Dow Adhesives can help advance your next project, please contact your Dow sales or TS&D representative.

PIGMENT PRINTING		PRODUCT	TG °C	DESCRIPTION
End Use Applications: <ul style="list-style-type: none">• Clothing/ apparel	Key Properties: <ul style="list-style-type: none">• Wash durability• Dry cleaning resistance• Color development• Crock fastness• Soft hand• UV resistance	RHOPLEX™ K-3	-27	Specially recommended to improve abrasion resistance of durable-press fabrics, as well as modify hand (soft hand); excellent mechanical stability especially for spraying applications
		RHOPLEX™ ECONEXT 919	-25	High solids, ultra-low formaldehyde modified acrylic binder specifically designed for high add-on pigment printing applications
		RHOPLEX™ TR-934 HS	-23	Excellent all-purpose binder for applications requiring soft, flexible, and durable properties
		RHOPLEX™ NW-1845K	-21	APE-free, ultra-low formaldehyde, styrenated acrylic emulsion; ideal combination of hydrophobicity, toughness, and film strength
COATING & BACKCOATING		PRODUCT	TG °C	DESCRIPTION
End Use Applications: <ul style="list-style-type: none">• Tablecloths• Tents/parasols• Canvas covers• Curtains• Automotive & furniture upholstery	Key Properties: <ul style="list-style-type: none">• Dimensional stability• Opacity• Hand – soft to hard• Hydrophilic or hydrophobic behavior• Foamability• Durability to UV, heat, water, solvents, and ozone• Dry cleaning resistance	RHOPLEX™ ECO-1291	-25	Soft, non-tacky, wash and dry clean durability, specifically designed for crushed foam coated curtain fabrics
		RHOPLEX™ E-2780	-10	Designed for crushed-foam applications offering excellent flexibility; self-reactive binder that offers excellent water and solvent resistance
		RHOPLEX™ HA-8	-10	Multipurpose, self-reactive backcoating binder that provides good durability
		RHOPLEX™ AC-2235M	+17	Coatings binder for artist canvas
		RHOPLEX™ TR-407	+34	APE-free, all-purpose acrylic binder that provides outstanding color stability and good processability
		RHOPLEX™ GL-618	+36	APE-free acrylic, hydrophobic, low-foaming acrylic binder that offers excellent stability with UF resins in glass mat applications
FLOCKING		PRODUCT	TG °C	DESCRIPTION
End Use Applications: <ul style="list-style-type: none">• Upholstery• Automotive• Packaging• Clothing/ apparel	Key Properties: <ul style="list-style-type: none">• Abrasion resistance• Resistance to dry cleaning• Washability• Flexibility at low temperature	RHOPLEX™ TR-934 HS	-23	Excellent all-purpose binder for applications requiring soft, flexible, and durable properties
		RHOPLEX™ NW-1402	-11	Acrylic binder designed for excellent mechanical stability in nonwoven applications
		RHOPLEX™ E-32NP	+5	Versatile acrylic binder, designed to provide outstanding solvent resistance
		RHOPLEX™ E-358	+8	High solids acrylic binder with outstanding water and solvent resistance



Product Summary

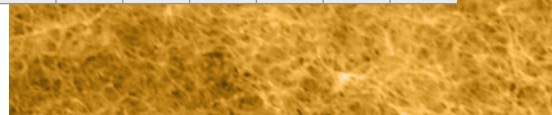


PRODUCT	PHYSICAL PROPERTIES			REACTIVITY		IONIC NATURE	LOW OR ULTRA LOW FORMALDEHYDE*	APPLICATIONS								
	TG °C	% SOLIDS	PH	SELF-CROSSLINKING	CROSSLINKABLE			WIPES	HYGIENE	AUTOMOTIVE	FILTRATION	WALL COVERINGS & DECORATIVE LAMINATES	HIGHLOFT	PIGMENT PRINTING	COATING & BACKCOATING	FLOCKING
HYPOD™ 8503	-53	42	9.8			Anionic			●							
RHOPLEX™ ECO-3482	-27	43	5.5	●		Anionic	✓✓	●		●		●				
RHOPLEX™ K-3	-27	46	2.6	●		Nonionic								●		
RHOPLEX™ ECO-1291	-25	50	3.3	●		Anionic									●	
RHOPLEX™ ECONEXT 919	-25	57.5	7		●	Anionic	✓✓							●		
RHOPLEX™ ST-954	-23	45.5	3.5	●		Anionic				●						
RHOPLEX™ TR-934 HS	-23	47	2.6	●		Anionic								●	●	●
RHOPLEX™ NW-1845K	-21	44	7		●	Anionic	✓✓		●					●		
RHOPLEX™ TR-653	-17	35	8.5	●		Anionic							●			
RHOPLEX™ NW-1402	-11	45.5	2.6	●		Nonionic		●	●							●
RHOPLEX™ E-2780	-10	48.5	2.6	●		Anionic									●	
RHOPLEX™ HA-8	-10	45.5	3	●		Nonionic		●	●						●	
PRIMAX™ 210K	-7	50	3		●	Anionic	✓			●					●	
RHOPLEX™ NW-1715K	-6	44	6.2		●	Anionic	✓✓		●							
RHOPLEX™ E-32NP	5	46	2.5		●	Nonionic					●		●			●
RHOPLEX™ ECO-3988	7	54.5	7.8	●		Nonionic	✓	●		●		●				
RHOPLEX™ E-358	8	60	7	●		Nonionic		●			●					●
RHOPLEX™ 52	17	45	9		●	Anionic	✓✓					●				
RHOPLEX™ AC-2235M	17	46.5	8.5		●	Nonionic	✓								●	
RHOPLEX™ HA-12	19	50	9.4		●	Nonionic						●				
RHOPLEX™ TR-407	34	45.5	2.5	●		Anionic				●	●		●		●	
RHOPLEX™ ECO-100	35	44	5	●		Anionic	✓✓			●	●	●				
RHOPLEX™ HA-16	35	45.5	2.6	●		Nonionic				●	●		●			
RHOPLEX™ GL-618	36	47	8.6	●		Anionic					●				●	
RHOPLEX™ ECONEXT 1101	58	45	7		●	Anionic	✓✓				●					
AQUASET™ 100	100	53	3.8	●		Nonionic	✓✓				●					

✓✓: Ultra Low Formaldehyde – No formaldehyde or formaldehyde-generating materials are intentionally added

✓: Low formaldehyde – Less than 100 ppm free formaldehyde, significantly reduced level of total formaldehyde emissions upon curing

Note: The Physical Properties are only typical values and not specifications.



For more information about Dow, visit www.dow.com/about. To contact a Dow representative, visit, www.dow.com/contact.

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