Lubrizol

PAPER & TEXTILES

SPECIALTY PAPER, FILTRATION AND NONWOVENS

PRODUCT GUIDE

www.lubrizol.com/coatings

INNOVATIVE TECHNOLOGIES. CUSTOMIZED SOLUTIONS.

COMPLIANCE AND SAFETY FOCUSED

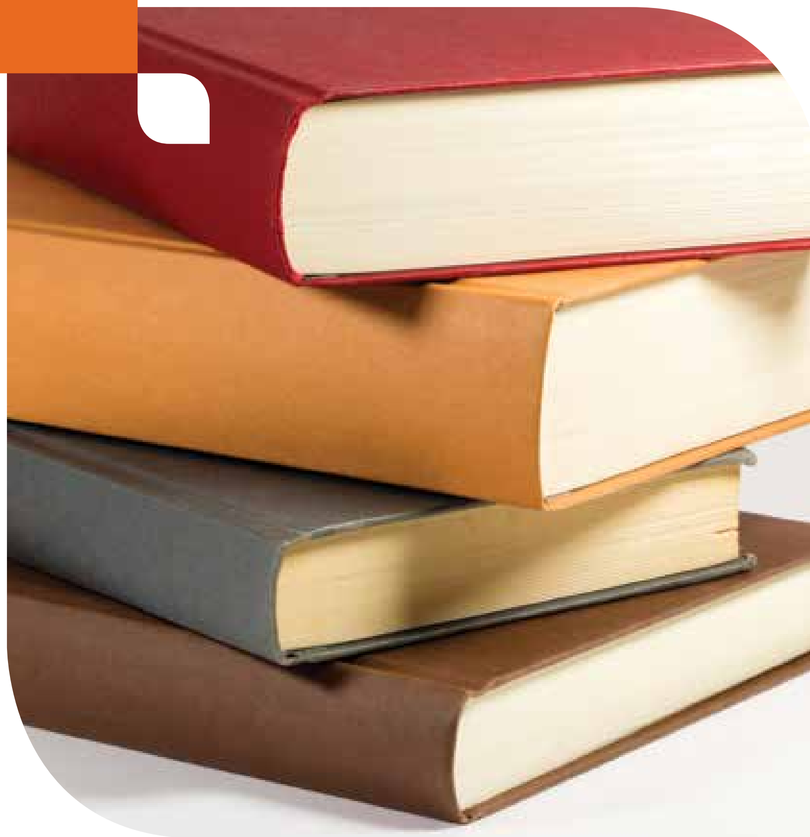
Lubrizol's extensive portfolio of polymers and custom-formulated solutions for filtration and specialty paper applications include an excellent choice of formaldehyde-free and NMP-free options within our Hycar®, Carboset™, Vycar™ and Sancure™ product lines.

Our formaldehyde-free technologies mean that formaldehyde is not known to be present in raw materials used, added as a preservative, or generated during the curing process. Ultimately, this means the formaldehyde level is below the detectable limit of 2 ppm. Similarly, products designated as NMP-free mean no N-Methyl Pyrrolidone is intentionally used in the formulation, but trace amounts may be detectable from common equipment cross–contamination sources at a level less than 0.1% and typically less than 0.05%.

CUSTOMER-DRIVEN R&D AND CUSTOM-TAILORED SOLUTIONS

Lubrizol research scientists use statistical modeling and have access to virtually thousands of monomer combinations, providing them with the right tools for continuous innovation. If the right solution for a given application is not available from Lubrizol's existing portfolio, we can modify existing technology or forge new product development to meet customer needs.

FOCUS PRODUCTS



SOLSPERSE™ W100

Solsperse™ W100 is a very good, general purpose dispersant effective in dispersing both organic and inorganic materials is aqueous systems. It can be used to disperse organic colorants, fillers, flame retardants and other materials into various water-based coating systems. Solsperse W100 also has less water sensitivity than other common dispersant and surfactant technologies.

HYCAR® 26978

Hycar® 26978 is a flexible, self-crosslinking acrylic copolymer with excellent water resistance. This formaldehyde free polymer is suggested for paper, polyester and fiberglass applications where flexibility and water resistance are critical parameters. Optimal properties are obtained after drying and curing at 130-150°C for 1 minute.

HYCAR® 26973

Hycar® 26973 is a firm, self-crosslinking polymer that delivers high wet and dry stiffness. This material has been engineered to replace or modify existing thermoset binder systems for fiberglass, polyester and paper applications. Hycar 26973 is recommended for applications requiring superior hot burst strength, such as oil and air filtration.

HYCAR® NH-3069

Hycar® NH3069 is an aqueous flame retardant acrylic latex designed for paper and nonwoven applications. This halogen-free technology imparts flame retardancy into cellulosic, synthetic and glass media. Hycar® NH-3069 also imparts improved mechanical properties into these various substrates. Media treated with Hycar NH-3069 will pass DIN 53438 (parts 2 & 3), NFPA 701 vertical and MVSS302 horizontal burn testing.

CARBOSET® 3076

Carboset® 3076 is a formaldehyde free, aqueous thermosetting resin designed for use in paper and fiberglass applications. This carboxylated acrylic solution polymer is based on approximately 85% renewable, bio-based materials. When fully crosslinked, this material provides outstanding tensile and solvent resistance properties with no formaldehyde emissions during the cure cycle. This material is also B stage curable if it has not gone through full cure cycle.

SPECIALTY PAPER MARKET SEGMENT

	LUBRIZOL PRODUCT	TYPICAL PHYSICAL PROPERTIES						TYPICAL PERFORMANCE PROPERTIES							FURTHER DESCRIPTION/OTHER INFORMATION
		Tg °C	SOLIDS	pH	VISCOSITY	HEAT REACTIVE	CARBOXYLATED	TENSILE	SOLVENT RESISTANCE	WATER RESISTANCE	TEAR RESISTANCE	INTERNAL BOND	MIT FOLD	MULLEN BURST	
SOFT	HyStretch™ V-60	-60	50.5	7.1	40	Yes	Yes			○					Controlled tack; ultra-soft, dust holding performance in filtration; non-skid coatings
SOFT	HyStretch™ V-43	-43	50	8.5	200	Yes	Yes	●		○				○	Very soft and elastic; also available in a formaldehyde-free[2] version; non-skid coatings
SOFT	HyStretch™ V-29	-29	46	4	25	Yes	Yes	○	○	○			●	●	Flexible binder for conformable products; elastic recovery
SOFT	Hycar™ TN-615	-26	50	5	50	Yes	Yes	○	○	●	●	●		●	Paper saturant for tape, premask and abrasive where tear, delamination and fold are important
SOFT	Carbobond™ 26387	-23	61	5	275	Yes	Yes	○	○	●	○	●			High solids heat reactive saturant for tape and wallcoverings; very good elongation and fold endurance
SOFT	Hycar® 26477	-20	48	5.7	125	Yes	Yes	●	○	●	●	○	○	○	Soft binder with balance of strength and toughness properties; excellent mechanical stability; hydrophobic polymer
SOFT	Hycar® 26083	-15	52.5	6	55	Yes	Yes	○	○	○	●	●	○	●	White-water color; low temp flex; excellent resistance to discoloration; saturant for tape and pre-mask
SOFT	Hycar® 26322	-15	51	4	40	Yes	Yes	●	○	○	●	○	○		Tape saturant; high elongation, high tear and delamination
SOFT	Hycar® 26552	-15	47	4.5	110	Yes	Yes	●	○	●				○	Formaldehyde-free[2], sterilizable binder; highly dispersible until cured
SOFT	Hycar® 26978	-12	43.5	3.7	40	Yes	Yes	●	●	●	○		○		Formaldehyde-free; alkali resistant; hydrophobic; self-crosslinking
SOFT	Hycar® 26120	-11	50	3.8	115	Yes	No	●	●	●	○	●	●	●	Highly redispersible; excellent stability in machine processing; balance of physical properties and heat stability; general purpose, sterilizable binder; cationic compatible
SOFT	Hycar® 2671	-11	53	5	170	Yes	Yes	●	●	○	○	●	●	●	General purpose saturant with balance of physical properties; solvent resistance; mechanical and heat stability; sterilizable binder; excellent light fastness
SOFT	Hycar® 26345	-6	50	3.6	20	Yes	Yes	●	●	○		●	●	●	Excellent cold flex, solvent resistance and heat stability
SOFT	Hycar® 2679	-3	49	3.7	100	Yes	Yes	●	●	○		●	●	●	Flexible saturant; balance of strength and toughness properties; excellent abrasion & solvent resistance; block resistance
SOFT	Hycar® 26796	0	48	5	120	Yes	Yes	●	●			●	●	●	Paper saturant that has outstanding fold endurance properties; self-thickening
SOFT	Hycar® FF-26916	2	50	8.5	65	Yes	Yes	●			●	●			Formaldehyde-free[2] with excellent wet & dry tensile; internal bond and very scrub resistant
SOFT	Carbobond™ 26373	5	58	2.6	90	Yes	Yes	○		●		●			Heat sealable; tough; high solids; very broad FDA compliance; hydrophobic; high solids
SOFT	Vycar™ 460X46	7	49	7	35	Yes	Yes		●	○		●	○		Flame retardant tough polymer with good abrasion and chemical resistance
MEDIUM	Hycar® 26948	7	53	4	100	Yes	Yes	○		●	○	●			Formaldehyde-Free[2] polymer with excellent hydrophobicity, broad FDA compliance
MEDIUM	Hycar® 26996	8	49	6.1	100	Yes	Yes	○	●	○	●	●			Heat sealable; tough polymer with broad FDA approvals
MEDIUM	Hycar® 26349	12	49	4.6	135	Yes	No	●	●	○		●		●	Excellent abrasion, solvent & plasticizer resistance; coatings provide toughness and block resistance; can be used as is or with filler addition
MEDIUM	Hycar® 26091	20	50	6.8	35	Yes	Yes	●	●	○	○	●			Broad FDA compliance; oil and grease resistance
MEDIUM	Hycar® 26548	20	46	3	20	Yes	Yes	●		●	○	○	○		Broad food grade compliance; paper and filtration saturation polymer; hydrophilic; tea, coffee and milk filters; broad FDA compliance
MEDIUM	Hycar® 26288	20	49	4	60	Yes	Yes			●					Heat sealable; broad FDA compliance
MEDIUM	Hycar® 26138	25	49	5.5	60	Yes	No	●	●	●		○		●	Tape release coatings; excellent abrasion, solvent & water resistance; coatings provide toughness and block resistance; printable; excellent re-adhesion properties
MEDIUM	Hycar® 26523	27	42	5.2	17	No	Yes		●						Tape release coatings; hydrophilic; excellent oil & solvent resistance
MEDIUM	Hycar® 26869S	29	48	6	200	Yes	No	●	●	●				●	Durable hydrophobic binder with excellent abrasion and solvent resistance; hot tensile strength
MEDIUM	Hycar® FF-26921	29	44	8	65	Yes	Yes	●	●						Formaldehyde-free[2]; excellent for fiberglass and synthetic media, fast curing, hot tensile strength
MEDIUM	Hycar® 26348	30	48.5	6	200	Yes	No	○	●	○	○	●			Tape release coatings; hydrophobic; excellent solvent resistance; excellent release & re-adhesion properties
MEDIUM	Hycar® 26907	31	48	6	100	No	Yes	●		●					Firm, hydrophobic; excellent wet properties, low extractables, methanol stable
MEDIUM	Vycar® VA-450	32	45	3	500	Yes	No	○							General purpose binder for polyester fiber, glass and paper; vinyl acetate polymer
MEDIUM	Hycar® 26450	32	46	4	25	Yes	Yes	●	●	○				●	Broad FDA compliance, high crosslink density; oil resistant and hydrophilic
HARD	Hycar® 26391	36	50	3.6	125	Yes	Yes	●	○	●				●	Pleatable; stiff; highly water resistant; very good color, filtration paper and nonwoven coatings
HARD	Vycar™ 460x58D	40	50	6	20	Yes	Yes	●	○	○				●	Stiff flame retardant polymer; works well in paper with antimony oxide; filtration; durable paper coatings
HARD	Hycar® NH-3069	40	36	4	100	Yes	No	○		○		○		○	Non-halogen polymer; flame resistance for all fibers; no antimony oxide needed
HARD	Hycar® 26599	42	45	3	20	Yes	Yes	●		●					Firm, good wet strength hydrophilic polymer; suitable for food grade filtration and packaging applications
HARD	Hycar® 26315	55	49.5	2.1	36	Yes	Yes	●	○	●				●	Heat sealable; excellent strength & stiffness; broad FDA compliance, methanol stable
HARD	Hycar® TN-621	56	48	5	200	Yes	Yes	●	○	●					Formaldehdye-free[2] polymer; paper coating and saturant; wall paper, card stock, filtration; excellent color
HARD	Hycar® 26968	59	46.5	3	100	Yes	Yes	●	○	●			●		Stiff hydrophobic binder for paper and synthetics; low formaldehyde
HARD	Hycar® 26973	67	48.5	3.5	200	Yes	Yes	●	●	●			●		Stiff polymer for phenolic modification or replacement; works well on fiberglass and paper substrates
HARD	Vycar™ 352	69	57	10.3	20	No	No	○	○	○		●			Tape release coatings; excellent chemical resistance; flame retarding; formaldehyde-free[2]; printable; excellent re-adhesion properties
HARD	Carbocure™ TSR-72	72	35	4.6	50	Yes	Yes	●	●	○				●	Stiff, thermosetting polymer with excellent oil and solvent resistance; high temperature dimensional stability; can replace melamine formaldehyde resins as an additive
HARD	Vycar™ 460X104	73	51	5	20	No	Yes	●	●						Flame retardant; crosslinkable; excellent color and mechanical stability; salt stable; paper and nowoven saturant; formaldehyde-free
HARD	Carboset® 3076	N/A	46	3.4	700	Yes	Yes	●	●	○					Thermosetting solution polymer; formaldehyde-free; hydrophilic; firm
HARD	Hycar® 26969L	105	44.5	3.5	75	Yes	Yes	○		●					Hydrophobic stiff binder; low formaldehyde

KEY: ○ = Good ● = Very Good

[1]APE not intentionally used, but trace amounts may be detectable at low levels. [2]Formaldehyde is below the detectable limit of 2 ppm.

SPECIALTY PAPER ADDITIVES

PRODUCT	APE-FREE[1]	% ACTIVE	APPLICATIONS	PERFORMANCE
Solthix™ A200	Yes	30	Alkali-swellable emulsion thickener for water-based coatings.	High efficiency, short rheology, develops viscosity upon addition of neutralizing base.
Solthix™ A300	Yes	18	Alkali-swellable emulsion thickener for water-based coatings.	High efficiency, imparts longer flow than Solthix™ A200 to control penetration, develops viscosity upon addition of neutralizing base.
Solthix™ A301	Yes	36	Alkali-swellable emulsion thickener for water-based coatings.	High efficiency, short rheology, develops viscosity upon addition of neutralizing base; Good suspension properties.
Solsperse™ 27000	Yes	100	Water-based dispersant for pigment dispersions; good for synthetic fibers.	Nonyl phenyl ethoxylate (NPE) free; Increase pigment concentration; Improved pigment wetting; Better tinctorial properties; Excellent storage stability.
Solsperse™ 40000	Yes	85	Water-based inorganic pigment dispersant.	Low foaming; Increase pigment concentration; Improved gloss/lower haze; No detrimental effect on water resistance; Improvements in flocculation resistance.
Solsperse™ 46000	Yes	40	Water-based dispersant for synthetic fibers (polyester and nylon).	Stable resin-free dispersions; Compatibility with a wide range of binders including: acrylic, epoxy, polyurethane, alkyd; Minimal affect on water resistance. Excellent viscosity stability.
Solsperse™ W100	Yes	40	General purpose dispersant for waterborne fillers, mineral and colorants.	Low foaming dispersant used to disperse fillers and pigments to optimal particle size. Delivers excellent water resistance.

POLYURETHANE DISPERSIONS

PRODUCT	TYPE	TYPICAL PHYSICAL PROPERTIES							DESCRIPTION/SUGGESTED USES
		SOLIDS (%)	pH	VISCOSITY (CP)	VOC (g/l)	100% MODULUS (psi)	TENSILE STRENGTH (psi)	ELONGATION AT BREAK (%)	
Aptalon™ M8100	Polyamide	37	8	300	25	1724	2303	227	Hard, abrasion resistant, heat resistant. Appropriate for decor paper, bookcover and specialty paper applications.
Permax™ 202	Polyether	40	5	500	<10	310	5000	750	Medium soft nonionic polyether, Good MVTR, NMP-free[2]. Appropriate for medical and specialty applications.
Permax™ 232	Polyether	35	5	300	26	160	1300	650	Soft, flexible elastic polyether with good hydrolytic stability; high MVTR, nonionic low VOC[3], NMP-free[2]. Appropriate for medical and specialty applications.
Sancure™ 20025F	Polyester	48	8	500	27	300	4100	1000	Low VOC[3], soft, elastic polymer; good heat stability, heat sealing, and abrasion resistance
Sancure™ 861	Polyether	40	8	650	30	650	2600	580	Soft, durable adhesives; low VOC[3], for use in nonwoven, bookcover, decor paper and other specialty applications.
Sancure™ 2715	Polyether	38	9	750	31	1100	3300	425	Firm, hard, low VOC[3], tough film with fast property development; medium hard aliphatic polyether urethane, NMP-free[1]

[1]APE not intentionally used, but trace amounts may be detectable at low levels.
[2]NMP not intentionally used in the formulation and is <0.1% and typically < 0.05%.
[3]Defined by Lubrizol as <140 g/l as measured by EPA Method 24.

PRODUCT SELECTION—BY MARKET

RESINS & POLYMERS	Tg °C	ABRASIVES	AIR FILTRATION	BOOKCOVER	DÉCOR	LIQUID FILTRATION	GASKETING	MAT/FACER	MEDICAL	PAPER COATINGS	TAPE SATURANTS	WALLPAPER	SPECIALTY
HyStretch™ V-60	-60		■							■			
HyStretch™ V-43	-43				■					■	■		■
HyStretch™ V-29	-29				■			■					■
Hycar® TN-615	-25	■		■			■				■	■	
Carbobond™ 26387	-23			■			■				■	■	
Hycar® 26477	-20	■		■				■				■	
Hycar® 26083	-15			■							■		
Hycar® 26322	-15										■		
Hycar® 26552	-15							■	■				
Hycar® 26978	-12				■			■	■	■		■	
Hycar® 26120	-11		■	■		■			■			■	
Hycar® 2671	-11		■	■			■		■		■		
Hycar® 26345	-6	■		■			■						
Hycar® 2679	-3	■	■	■				■		■	■	■	
Hycar® 26796	0			■									
Hycar® FF26916	2		■	■		■			■	■		■	
Carbobond™ 26373	5				■					■			■
Vycar™ 460X46	7									■		■	
Hycar® 26948	7				■					■		■	■
Hycar® 26996	8			■		■				■			
Hycar® 26349	12	■	■	■			■	■		■			
Hycar® 26091	20	■				■				■			
Hycar® 26288	20									■			
Hycar® 26548	20				■	■				■	■		
Hycar® 26138	25	■	■	■		■		■		■			
Hycar® 26523	27									■			■
Hycar® 26869S	29		■					■		■			
Hycar® FF-26921	29		■			■		■					
Hycar® 26348	30									■			
Hycar® 26907	31		■		■	■				■		■	
Vycar™ VA-450	32		■					■		■			
Hycar® 26450	32		■			■		■					
Hycar® 26391	36		■			■				■		■	
Vycar™ 460x58D	40		■					■		■			
Hycar® NH-3069	40		■		■			■		■		■	■
Hycar® 26599	42					■				■			
Hycar® 26315	55		■		■			■				■	
Hycar® TN-621	56		■		■			■				■	
Hycar® 26968	59		■			■							
Hycar® 26973	67		■			■							
Vycar™ 352	69									■			
Carbocure™ TSR-72	72	■				■		■					■
Vycar™ 460X104	73	■	■					■					
Carboset™ 3076	N/A		■		■	■		■					
Hycar® 26969L	105							■					■

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WHAT WE ADD MAKES THE DIFFERENCE.™

Lubrizol is a market-driven innovator of specialty chemicals that solve today's challenges in the paints and coatings, printing and packaging, paper and textiles, plastics and composites and digital print markets. More than just a supplier, we are a collaborator with extensive experience in surface protection, dispersion, adhesion and barrier properties that enables us to enhance the performance, simplicity and sustainability benefits of our customers' products. With a commitment to collaboration, applied science and demonstrated value, our team of experts is dedicated to exceeding customer expectations for both the simplest and toughest requirements. Count on Lubrizol to make the difference.

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