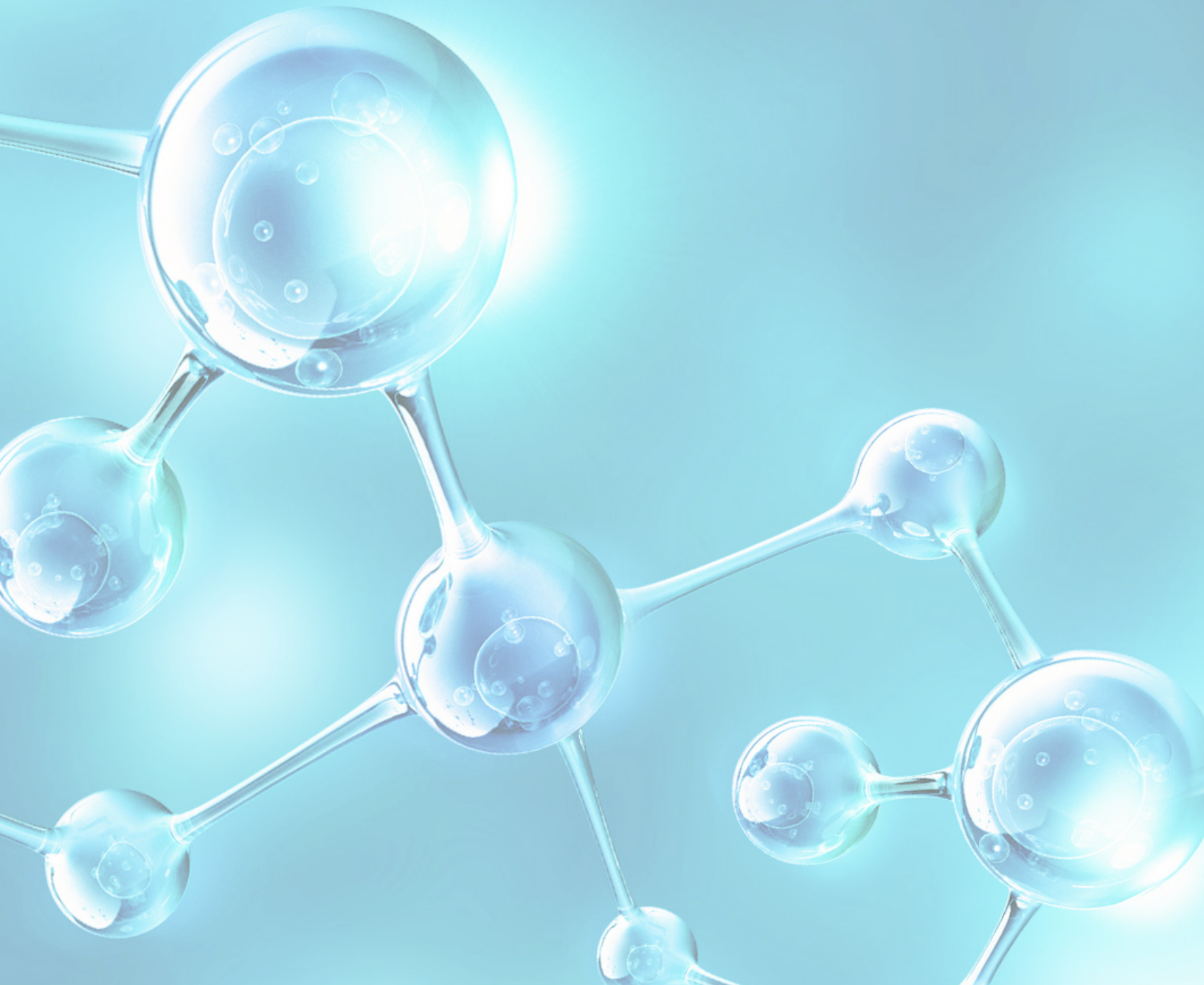
Polynt Group

Coating Resins
Urethanes



Contents

Production Sites

Polynt Composites Canada, Inc.
Brampton (ON) - Drummondville (QC)

Polynt Composites USA Inc.
Carpentersville (IL) - Chatham (VA) - Ennis (TX) - Forest Park (GA) - Houston (TX) - Marshall (TX) - North Kansas City (MO) - Orlando (FL) - Sandusky (OH)

Polynt Reichhold Group

After the merger on May 2017 the new Polynt-Reichhold Group is a global Company in the Intermediates, Coating and Composite Resins, Thermoset Compounds, Gel-coats and niche Specialties.

This combination enhances the Group's leading position as a global vertically integrated specialty chemicals player, with significant global presence in Europe, North America and Asia, a strategy initiated by Polynt with the successful integration of PCCR and CCP in the last years and now further reinforced by Reichhold's global scale, extensive product portfolio and R&D competencies.

Polynt-Reichhold Group is known for its superior quality and impressive range of products and with its excellent distribution network it can provide first-class service to customers whatever their market. Customer Service and Technical Service teams are renowned for their customer focus, offering the best service even after products have left manufacturing.

The Group strives to keep customers satisfied, assisting them in producing premium quality products every time they use its products.

Product innovation is important for the Group's business and it's the reason for which it constantly works with customers to find solutions to problems.

Introducing new or improved products ensures that Polynt-Reichhold Group continue not only to deliver what the market wants and needs, but also when it is wanted and needed.

Solvents – Abbreviations

A100, S	Aromatic 100
A150, R	Aromatic 150
DGBE, G5	Diethylene Glycol n-Butyl Ether
DMC	Dimethyl Carbonate
DPDME, G8	Dipropylene Glycol Dimethyl Ether
DPM	Dipropylene Glycol Monomethyl Ether
EEP, A7	Ethyl 3-Ethoxypropionate
EGBE, G4	Ethylene Glycol Monobutyl Ether, Butyl Cellosolve
EGPE, EP, G6	Ethylene Glycol Monopropyl Ether
EtOAc	Ethyl Acetate
EtOH, E	Ethyl Alcohol
G	Glycol and Glycol Ether
i-BuOH, B1	Isobutyl Alcohol
IBIB	Isobutyl Isobutyrate
IPA, D	Isopropyl Alcohol
Isopar G	Isoparaffin Solvent
LAMS, ML	Low Aromatic Mineral Spirits
MAK, K4	Methyl Amyl Ketone
MEK, K1	Methyl Ethyl Ketone
MIBK, K2	Methyl Isobutyl Ketone
MO	Odorless Mineral Spirits
MPK, K3	Methyl Propyl Ketone

MS, M	Mineral Spirits
n-BuAc, A4	n-Butyl Acetate
n-BuOH, B	n-Butyl Alcohol
n-PrOH	n-Propyl Alcohol
NMP, MP	n-Methyl-2-Pyrrolidone
PCBTF, E1	para-Chlorobenzotrifluoride (Oxsol® 100)
PGME, G3	Propylene Glycol Monomethyl Ether
PMA, A6	Propylene Glycol Monomethyl Ether Acetate
PnP, G2	Propoxy Propanol
s-BuOH, B2	Secondary Butyl Alcohol
t-BuAc, E2	t-Butyl Acetate
T	Toluene
TEA	Triethyleneamine
DMEA	Dimethyl Ethanol Amine
NH3	Ammonia
TPM, T8	Tripropylene Glycol Monomethyl Ether
VM&P, V	VM&P Naphtha
VMS, E3	Volatile Methylsiloxane
W	Water
X	Xylene
Z	Mixed Solvents
6X3	Rule 66

Definitions

% NVM	Nonvolatile material expressed as a percent of the total weight of the resin solution.
% NVV	Nonvolatile material expressed as a percent of the total volume of the resin solution.
Eq. Wt.	Molecular weight divided by functionality, the latter being the number of a given reactive group present on an average molecule of the material. Expressed based on a solids basis.
pH	Degree of acidity or alkalinity of a solution expressed on a relative scale of 1 to 14 with 7 being neutral.
Particle Size	Average diameter of a distribution of particles, usually expressed in microns or nanometers.
Tg	Temperature at which the non-crystalline portion of a polymer is transformed from a viscous rubbery state to a brittle glass-like material. Generally an indication of the flexibility and hardness of a finished paint film.
MFFT	Minimum temperature at which an applied coating forms a continuous film, as evidenced by the visual lack of cracking or powdery appearance of film and film integrity, by testing the film on a temperature gradient plate.
Oil Type	Synthetic or naturally occurring vegetable material that contributes fatty acids used in producing alkyd resins.
Wt/Gal	Mass per volume of polymer as supplied expressed in pounds per gallon.
Viscosity	Measurement of a polymer's resistance to flow expressed in Gardner-Holdt units or centipoises.
Reduced Viscosity	Measured viscosity (as defined previously) at a specified percent weight solids typically lower than the solids of the polymer as supplied.
Color	Measurement of the light reflectance of a polymer in liquid form expressed in Gardner units on a relative scale of 1 to 14 with 1 being water white.
Acid Value (solids)	Number of milligrams of KOH required to neutralize the free acids in one gram of polymer solids.
OH Value	Hydroxyl value – number of milligrams of KOH equivalent to the hydroxyl groups available per gram of polymer. The hydroxyl equivalent weight is given by 56,100 divided by the hydroxyl value.
Solvents	Dilution solvents used to achieve the desired viscosity.

Trademarked Brands

ACRYLAMAC®, AROLON®	Solution Acrylics
ALCURE®	Polymeric Isocyanate Curatives
AQUAMAC®, AROLON®, SYNTHEMUL®	All Acrylic, Self-Crosslinking, Styrene Acrylic, and Vinyl Acrylic Latex
ARCHEMIS®	High Solids Long Oil Alkyds
AROFLINT®	Non-Isocyanate 2K Systems
BECKOSOL AQ®	Alkyd Emulsions
CARBAMAC®, UROTUF®	Oil Modified Urethanes, Uralkyds, Moisture Cure Urethanes, and Polyurethane Dispersions
CHEMACOIL®	Conventional Vinyl Oxazoline-Modified Esters
DURAMAC®, BECKOSOL®	Alkyds, Flat Alkyds, and Thixotropic Alkyds
DURAMAC®, KELSOL®	Water-Reducible Alkyds
HYDREAU®	Polyester Dispersions
MACOPOL®, AMBERLAC®	Copolymer Resins
POLYMAC®, FINE-CLAD®, FINE-TONE®	Powder Polyesters
POLYMAC®, AROPLAZ®	Liquid Polyesters
EPOTUF®	Epoxy Resins, Epoxy Curing Agents
REZIMAC®, EPOTUF®	Epoxy Esters
REZIMAC®, BECKOSOL®	Silicone-Modified and Phenolic-Modified Alkyds

Urethanes – Solvent-Borne

PRODUCT	OIL TYPE	% SOLIDS (WEIGHT)	DENSITY (LBS/GAL)	SOLVENTS	VISCOSITY (STOKES)	REDUCED VISCOSITY (STOKES)
SOLVENT-BORNE OIL-MODIFIED URETHANES						
UROTUF® F47-M-60	Soybean	60	7.60	MS	27.0 - 46.0	0.60 - 1.25 @ 50% NV
UROTUF® F48-M-50	Soybean	50	7.45	MS	28.0 - 48.0	0.50 - 0.85 @ 40% NV
UROTUF® F48-E1-40	Soybean	40	10.10	PCBTF	18.0 - 36.0	2.00 - 2.50 @ 35% NV
UROTUF® F77-M-60	Linseed	60	7.60	MS	17.6 - 28.0	4.0 - 6.0 @ 45% NV
UROTUF® F77-E1-50	Linseed	50	9.75	PCBTF	7.0 - 11.0	2.00 - 2.50 @ 45% NV
UROTUF® F78-M-50	Linseed	50	7.45	MS	27.0 - 46.3	0.50 - 0.80 @ 40% NV
UROTUF® F78-E1-40	Linseed	40	10.10	PCBTF	13.0 - 20.0	2.00 - 2.50 @ 35% NV
UROTUF® F78-50X	Linseed	50	8.05	X	27.0 - 46.0	0.50 - 0.85 @ 40% NV
UROTUF® F78-50X EU	Linseed	50	8.05	X	27.0 - 46.0	0.50 - 0.85 @ 40% NV
UROTUF® F81-M-80	Sunflower	80	7.70	MS	2.0 - 2.5	N/A
UROTUF® F82-M-62	Linseed	62	7.57	MS	1.6 - 2.5	N/A
UROTUF® F83-M-75	Proprietary	75	7.85	MS	50.0 - 75.0	2.00 - 2.50 @ 62.5% NV
UROTUF® F84-E1-55	Soybean	55	9.60	PCBTF	50.0 - 80.0	2.50 - 3.00 @ 45% NV
UROTUF® F87-M-80	Proprietary	80	7.90	MS	27.0 - 46.0	1.00 - 2.00 @ 64% NV
UROTUF® F89-E3M-55	Linseed	55	7.60	VMS / MS	2.5 - 3.2	0.65 - 0.85 @ 46.5% NV in VMS
UROTUF® F90-E3M-55	Soybean	55	7.60	VMS / MS	2.7 - 3.7	0.65 - 0.85 @ 46.5% NV in VMS
UROTUF® F275-M-75	Linseed	75	7.88	LAMS	40.0 - 61.5	0.75 - 1.00 @ 50% NV in LAMS / VMS

GARDNER COLOR (MAXIMUM)	ACID VALUE (SOLID MAX)	RESIN VOC (G/L)	FEATURES AND BENEFITS
6.0	2.0	450	Low film color, good general purpose OMU
4.0	2.0	550	Low film color, fast dry, easily flattened, good hardness
4.0	1.0	0	Zero VOC Oxsol 100 version of UROTUF® F48-M-50
6.0	1.7	450	Good balance of overall properties, good general purpose OMU
5.0	1.0	0	Zero VOC Oxsol 100 version or UROTUF® F77-M-60
5.0	2.0	550	Fast dry, good through cure, easily flattened, good hardness
5.0	1.0	0	Zero VOC Oxsol 100 version of UROTUF® F78-M-50
5.0	2.0	480	Xylene version of UROTUF® F78-M-50
5.0	2.0	480	REACH compliant version of UROTUF® F78-50X
4.0	1.0	185	Low viscosity, easy to use modifier for conventional SB OMU
6.0	0.3	340	350 g/L VOC compliant
6.0	1.0	350	350 g/L VOC compliant, amber film
5.0	1.0	0	Zero VOC, modifier for conventional SB OMU
6.0	2.5	350	350 g/L VOC compliant, modifier for conventional SB OMU, fast viscosity reduction
6.0	1.0	350	350 g/L VOC compliant using exempt solvent, high gloss
5.0	1.0	350	350 g/L VOC compliant using exempt solvent, high gloss, low film color
6.0	2.0	240	275 g/L VOC compliant using exempt solvent

Urethanes – Solvent-Borne

PRODUCT	OIL TYPE	% SOLIDS (WEIGHT)	DENSITY (LBS/GAL)	SOLVENTS	VISCOSITY (STOKES)	REDUCED VISCOSITY (STOKES)
SOLVENT-BORNE OIL-MODIFIED URALKYDS						
CARBAMAC® 43-4310	Linseed	60	7.70	MS	22.7 - 46.3	0.65 - 1.25 @ 48% NV
CARBAMAC® 43-4333	Soybean	60	7.70	MS	22.7 - 46.3	0.40 - 0.80 @ 45% NV
CARBAMAC® 43-4345	Soybean	60	7.65	MS	17.6 - 36.2	0.65 - 1.25 @ 50% NV
CARBAMAC® 43-4355	Soybean	55	7.59	MS	10.7 - 20.0	1.25 - 2.25 @ 48% NV
CARBAMAC® 57-4372	Soybean	70	7.70	MS	8.8 - 12.9	1.65 - 2.25 @ 60% NV
CARBAMAC® 57-5794	Soybean	80	8.04	MS	22.7 - 36.2	1.65 - 2.25 @ 64% NV
CARBAMAC® 57-5849	Sunflower	80	7.80	MS	2.0 - 2.5	—
UROTUF® F14-M-55	Soybean	55	7.62	MS	11.0 - 18.0	0.85 - 1.65 @ 48% NV
UROTUF® F17-M-60	Soybean	60	7.64	MS	6.0 - 9.0	1.00 - 1.40 @ 50% NV
UROTUF® F19-M-50	Sunflower	50	7.55	MS	23.0 - 36.0	1.00 - 1.25 @ 40% NV
UROTUF® F21-M-50	Soybean	50	7.55	MS	12.0 - 20.0	0.50 - 0.85 @ 40% NV
UROTUF® F22-M-60	Soybean	60	7.55	MS	7.4 - 10.7	1.65 - 2.25 @ 55% NV
UROTUF® F23-M-50	Soybean	50	7.45	MS	22.0 - 46.0	0.65 - 0.85 @ 40% NV
UROTUF® F7071S	Soybean	45	7.30	MS	1.2 - 2.0	N/A
UROTUF® AC-318	Soybean	60	7.70	MS	17.6 - 27.0	0.85 - 1.25 @ 40% NV

PRODUCT	% SOLIDS (WEIGHT)	DENSITY (LBS/GAL)	SOLVENTS	VISCOSITY (STOKES)	GARDNER COLOR (MAXIMUM)	MODULUS @ 100% (PSI)
SOLVENT-BORNE LACQUERS: 1K						
UROTUF® L06-30S	30	7.47	T / IPA	80.0 - 120.0	1.0	800
UROTUF® L61-S-30	30	7.48	T / IPA	60.0 - 100.0	1.0	1,300
UROTUF® L89-30S	30	7.45	T / IPA	80.0 - 115.0	1.0	1,900

GARDNER COLOR (MAXIMUM)	ACID VALUE (SOLID MAX)	RESIN VOC (G/L)	FEATURES AND BENEFITS
6.0	7.0	370	Good hardness and abrasion resistance, fast through dry, good recoat time
6.0	3.0	370	Good hardness and abrasion resistance, fast through dry, good recoat time
6.0	5.0	370	Excellent dry and wear characteristics
4.0	4.0	410	Good viscosity for higher build clearcoats, good recoat time
8.0	4.0	280	High solids, aliphatic, excellent exterior durability, good hardness and flexibility
6.0	3.0	185	High solids, high gloss, good abrasion resistance and hardness
4.0	1.0	185	Designed as a modified for conventional systems, extremely low viscosity
5.0	5.0	410	Fast dry, high hardness, excellent flow and leveling
6.0	2.0	370	Good flow and leveling, good mar and abrasion resistance
5.0	3.0	450	Excellent mar and abrasion resistance, good exterior durability
4.0	2.0	450	Fast dry, excellent hardness and flexibility, good mar and abrasion resistance
5.0	1.2	370	Good flow and leveling, good flexibility
5.0	2.0	450	Fast dry, good hardness
7.0	3.0	480	Good exterior durability and color retention
5.0	1.7	370	Easily pigmented, good compatibility with drying oils

ELONGATION (%)	TENSILE STRENGTH (PSI)	RESIN VOC (g/L)	FEATURES AND BENEFITS
520	6,000	630	Low temperature flexibility, good adhesion to flexible substrates
500	5,000	630	Non-yellowing, good adhesion to flexible substrates
350	5,500	625	Non-yellowing, good adhesion to vinyl substrates, medium hardness

Urethanes – Moisture-Cure

PRODUCT	% SOLIDS (WEIGHT)	DENSITY (LBS/GAL)	SOLVENTS	VISCOSITY (STOKES)	GARDNER COLOR (MAXIMUM)	% NCO (SOLID)	% FREE MONOMER
AROMATIC MOISTURE CURE URETHANE PREPOLYMERS							
UROTUF® M21-X-40	40	8.01	X	0.65 - 1.25	1.0	5.1 - 7.4	1.0
UROTUF® M26-E2X-64	64	8.60	t-BuAc / X	0.5 - 2.0	1.0	7.5 - 8.9	2.0
UROTUF® M80-A6X-48	48	8.60	PMA / X	0.3 - 0.8	3.0	9.0 - 10.5	1.5

Urethanes – Water-Borne

PRODUCT	OIL TYPE	% SOLIDS (WEIGHT)	DENSITY (LBS/GAL)	COSOLVENT	VISCOSITY (CPS @ 25° C)	RESIN VOC (G/L)
SELF-CROSSLINKING POLYURETHANE DISPERSIONS						
UROTUF® F96-MPW-32	Linseed	32	8.50	NMP	50 - 300	188
UROTUF® F97-MPW-33	Proprietary	33	8.50	NMP	50 - 300	178
UROTUF® F97A	Proprietary	33	8.50	NMP	50 - 5,000	180
UROTUF® F98-MPW-31	Proprietary	31	8.50	NMP	50 - 150	180
UROTUF® F982-MPW-33	Proprietary	33	8.50	NMP	50 - 300	180
UROTUF® F100-W-36	Proprietary	36	8.55	—	100 - 3,000	41
UROTUF® F101-MPW-45	Soybean	45	8.55	NMP	200 - 1,500	137
UROTUF® F102-W-36	Proprietary	36	8.50	—	100 - 1,000	55
UROTUF® F103-W-36	Soybean	36	8.52	—	50 - 1,000	50
UROTUF® F105-MPW-45	Soybean	45	8.60	NMP	500 - 1,200	135
UROTUF® F108-T8W-45	Soybean	45	8.60	TPM	100 - 1,000	95
UROTUF® F600-W-40	Proprietary	40	8.70	DPM	50 - 500	96
UROTUF® F625-W-43	Proprietary	43	8.69	—	20 - 200	45
UROTUF® F630-W-36	Proprietary	36	8.60	—	25 - 250	35

* USDA BioPreferred® certified via ASTM D6866-11 ** USDA BioPreferred® certified via ASTM D6866-16

TACK FREE (HOURS @ 77° F)	SWARD HARDNESS (OSCILLATIONS)	RESIN VOC (G/L)	FEATURES AND BENEFITS
2.5	26	580	Good wear, abrasion and chemical resistance
4.0	20	340	Lowest VOC version of UROTUF® M21-X-40
1.0	50	610	High hardness and mar resistance

% BIOBASED CONTENT	SWARD HARDNESS (OSCILLATIONS)	GARDNER DRY HARD (HOUR:MINUTE)	FEATURES AND BENEFITS
35	32	1:00	Amber film, excellent chemical & solvent resistance
39	36	0:50	Less amber film than UROTUF® F96-MPW-32, high mar & chemical resistance
38	N/A	N/A	TEA free version of UROTUF® F97-MPW-33 for ink
39	36	1:00	Manganese catalyzed version of UROTUF® F97-MPW-33
39	36	0:55	Iron catalyzed version of UROTUF® F97-MPW-33
52*	36	0:35	NMP & cosolvent free version of UROTUF® F97-MPW-33
40	34	1:05	High solids, lower VOC than UROTUF® F96-MPW-32 & UROTUF® F97-MPW-33
52*	36	0:55	NMP & cosolvent free, iron catalyzed version of UROTUF® F100-W-36
47**	46	1:25	NMP & cosolvent free, high film hardness
40	32	0:55	Precatalyzed, high solids
44	30	0:20	NMP free, high solids, low VOC, fast dry
43*	28	0:30	NMP free uralkyd, good adhesion & chemical resistance for garage floor coatings
49**	16	0:53	NMP & cosolvent free uralkyd, requires no cosolvent
53**	30	0:50	NMP & cosolvent free uralkyd, harder version of UROTUF® F625-W-43

Urethanes – Water-Borne

PRODUCT	% SOLIDS (WEIGHT)	DENSITY (LBS/GAL)	COSOLVENT	VISCOSITY (CPS @ 25° C)	RESIN VOC (G/L)	MODULUS @ 100% (PSI)
THERMOPLASTIC POLYURETHANE DISPERSIONS						
UROTUF® L51	30	8.75	NMP	20 - 80	379	4,000
UROTUF® L51-35	35	8.84	NMP	50 - 1,000	410	4,900
UROTUF® L522-W-40	40	8.75	—	50 - 500	35	2,029
UROTUF® L53-MPW-30	30	8.70	NMP	30 - 100	353	600
UROTUF® L54-MPW-32	32	8.74	NMP	500 - 2,000	390	3,000
UROTUF® L56-W-38	38	8.50	—	50 - 500	32	350
UROTUF® L57-MPW-35	35	8.80	NMP	20 - 100	241	4,000
UROTUF® L59-40	40	8.85	NMP	200 - 1,200	197	500
UROTUF® L62-G8W-40	40	8.80	DPDME	500 - 2,000	174	650
UROTUF® L63-MPW-38	38	8.80	NMP	50 - 300	273	4,500
UROTUF® L63-W-38	38	8.80	—	50 - 300	47	3,300
UROTUF® L64-W-62	62	8.85	—	50 - 1,000	15	240
UROTUF® L66-W-62	62	9.00	—	30 - 800	10	115

PRODUCT	% SOLIDS (WEIGHT)	DENSITY (LBS/GAL)	COSOLVENT	VISCOSITY (CPS @ 25° C)	RESIN VOC (G/L)	GLOSS (60° / 20°)
UV CURABLE POLYURETHANE DISPERSIONS						
UROTUF® E300-W-40	40	8.85	—	100 - 1,200	44	96 / 84

ELONGATION (%)	SHORE HARDNESS (SHORE A / SHORE)	TENSILE STRENGTH (PSI)	FEATURES AND BENEFITS
150	Shore D 60	5,000	Excellent hardness & superior abrasion resistance
100	Shore D 60	4,900	Higher solids version of UROTUF® L51, good chemical resistance
366	Shore A 85	4,092	NMP & cosolvent free version of UROTUF® L522-MPW-40, requires no cosolvent
550	Shore A 85	4,600	Highly flexible films, excellent abrasion resistance
260	Shore D 55	6,000	Water-white dispersion, high acid content for crosslinking
700	Shore A 67	4,300	NMP & cosolvent free version of UROTUF® L56-MPW-36, requires no cosolvent
220	Shore A 85	6,200	HAPS-free, high film hardness, good abrasion resistance
810	Shore A 68	6,500	Soft, highly flexible films, blending resin to improve flexibility
500	Shore A 76	860	NMP free, OH functional, very low gloss, highly flexible films
200	Shore D 65	5,800	High solids, high film hardness, high gloss
345	Shore D 62	6,600	NMP & cosolvent free version of UROTUF® L63-MPW-38
800	Shore A 58	4,100	NMP & solvent free, requires no cosolvent, good heat color stability, heat sealable
>1,000	Shore A 52	>750	NMP & solvent free, very soft modifier to increase elongation

IMPACT (IN LBS.)	SWARD HARDNESS (OSCILLATIONS)	GARDNER DRY HARD (HOUR:MINUTE)	FEATURES AND BENEFITS
160 / 160	36	1:00	NMP & cosolvent free, fast tack free before UV cure, good mar resistance

Glossary

Abrasion	Wearing away of a surface in service by action such as rubbing, scraping or erosion.
Abrasion Resistance	The ability of a coating to resist being worn away and to maintain its original appearance and structure when subjected to rubbing, scraping or erosion.
Acid Number or Value	The number of milligrams of KOH required to neutralize the free acids in 1 gram of polymer.
Aftertack	Film defect in which the coated surface, having once reached a tack-free stage, subsequently develops a sticky condition.
Anti-sintering	The property of reducing sintering.
Architectural Coatings	Coatings intended for on-site application to interior or exterior surfaces of residential, commercial, institutional or industrial buildings – as opposed to industrial coatings. Protective and decorative finishes applied at ambient temperatures.
Baking	The process of drying or curing a coating by the application of heat in excess of 65°C / 150°F. When below this temperature, the process is referred to as forced drying.
Block Resistance	Resistance to the undesirable sticking together of two painted surfaces when pressed together under normal conditions or under specified conditions of temperature, pressure, and relative humidity.
Blocked Isocyanate	An isocyanate material in which the isocyanate groups (NCO) are blocked from carrying out their normal chemical reactions by already having been reacted, either with a specific blocking agent or with themselves. In the latter case the blocked isocyanate is referred to as a uretdione type, because the NCO groups have linked themselves together to produce uretdione linkages. Common blocking agents are Ɛ-caprolactam and triazole.
Blocking Agent	A chemical, such as Ɛ-caprolactam, that reacts reversibly with isocyanate groups (NCO) such that at temperatures below the deblocking temperature it is covalently bonded to the NCO groups, thereby preventing these groups from reacting with anything else. At temperatures above the deblocking temperature, the blocking agent is released from the NCO groups thus allowing them to react with, for example, the hydroxyl groups of the surrounding polyester resin.
Blush, Blushing, "Bloom"	Film defect which appears as a milky opalescence as the film dries; can be a temporary or permanent condition. It is generally caused by rapid evaporation, moisture, or incompatibility.
Brush Drag	Resistance encountered when applying a coating by brush.
Brushability	The ability or ease with which a coating can be brushed.
Catalyst	An additive that speeds up a chemical reaction, such as curing, but takes no part in the reaction.
Chalk Resistance	The ability of a coating to resist the formation of a friable powder on the surface of its film caused by the disintegration of the binding medium due to degradative weather factors.
Chip Resistance	The ability of a coating or layers of coatings to resist total or partial removal, usually in small pieces, as a result of impact by hard objects or from wear during service.
Compatibility	Capacity of coatings from either different sources or of different compositions to be combined and applied so as to yield no visible or mechanically measurable differences in the cured film or application properties.
Conventional Solids	For the purposes of this reference guide, any material that is less than 70% solids. There may be exceptions.
Copolymer	A polymer consisting of molecules containing large numbers of units of two or more chemically different types in irregular sequence.
Corrosion Resistance	The ability of a substance to resist deterioration because of reaction with its environment.
Cracking	Generally, the splitting of a dry paint or varnish film, usually as a result of aging or flexing.
Crosslinking	Applied to polymer molecules, the setting up of chemical links between the molecular chains to form a three-dimensional or network polymer generally by covalent bonding. Crosslinking generally toughens and stiffens coatings. Thermosetting materials crosslink under the influence of heat and catalysis and, in some cases, electromagnetic radiation.
Cure	To change the properties of a polymeric system by chemical reaction into a final, more stable, usable condition by the use of heat, radiation or reaction with chemical additives.
D.O.I. (Distinctness of Image)	The sharpness with which image outlines are reflected by the surface of an object.
DCO	Dehydrated Castor Oil
Deblocking Temperature	The temperature at which the thermally reversible reaction between a blocking agent and an isocyanate group (NCO) begins to produce significant quantities of freed NCO groups available for reaction. The higher the temperature a blocked isocyanate is above its deblocking temperature, the more NCO groups are made available, and the faster crosslinking reactions can be. Conversely, when an isocyanate is below its deblocking temperature, no NCO groups are available for reaction.

Glossary

DFT	Dry film thickness
Dry	A film is considered dry when using moderate pressure, it feels firm to the touch.
Dry-Through	Film is considered dry-through when no distortion of the film (i.e., loosening, detachment, wrinkling, etc.) occurs when the thumb is borne downward while simultaneously turning the thumb through an angle of 90° in the plane of the film.
Dry-to-Touch	A film is considered dry-to-touch when it no longer adheres to the finger. The finger leaves no marks after touching the film, and film does not rub up appreciably when finger is lightly rubbed across the surface.
DTM (Direct-to-Metal)	Refers to coatings applied directly to an uncoated, non-primed metal substrate.
Edge Coverage	A powder coating's ability to flow over, build and adhere to sharp corners, angles and edges.
Enamel	Topcoat that is characterized by its ability to form a smooth surface; originally associated with a high gloss but may also include lower degrees of gloss.
Equivalent Weight	The equivalent weight of a material is its molecular weight divided by its functionality, the latter being the number of a given reactive group present on an average molecule of the material. For polyester resins for coating powders, the resin equivalent weight is given by 56,100 divided by the resin acid value (for carboxyl polyesters) or 56,100 divided by the resin hydroxyl value (for hydroxyl polyesters). Expressed based on a solids basis.
Exempt Solvent	Any solvent that has not been declared photochemical reactive by any of several regulatory agencies.
Extruder	A device used to melt-mix plastics and/or powder coatings. An extruder utilizes heat and mechanical kneading to achieve a homogeneous mixture.
FDA	Food and Drug Administration
Flash Point	Lowest temperature of a liquid at which it gives off sufficient vapor to form an ignitable mixture with the air near the surface of the liquid or within the vessel used.
Glass Transition Temperature (Tg)	The temperature at which materials in general change from either a hard glassy state to a softer, rubbery state, or from a soft rubbery state to a harder glassy state.
HAP	Hazardous Air Pollutant
High Drink	A resin is said to be high drink when, as solvent is added, there is a slow viscosity reduction, enabling lower solids at a given viscosity.
High Solids	For the purposes of this reference guide, any material that is 70% solids or higher. There may be exceptions.
HDODA	Hexanediol diacrylate
HQMME	Hydroquinone monomethyl ether
Hybrid Powder Coating	A powder coating whose binder component is a blend of two different resins, such as polyester and epoxy. A "60/40" polyester/epoxy hybrid for example, would have a resin component comprising 60 wt/% polyester and 40 wt/% epoxy. The functional groups on each resin are balanced so as to fully react with each other at the given wt/% ratios of each resin.
Impact Fusion	The tendency for particles of powder coatings to agglomerate, fuse together, or build up on surfaces, because of mechanical impact during transportation within the powder application equipment.
Inhibitor	A negative catalyst which prevents or retards an undesirable chemical reaction.
Isocyanate	A material containing NCO groups that are available for reaction with a variety of other functional groups. Commonly those used in coating powders are polymeric in nature so as to increase their functionality.
Lacquer	Coating composition which is based on synthetic thermoplastic film-forming material dissolved in organic solvent that dries primarily by solvent evaporation.
Long Oil Alkyd	Alkyd resin containing more than 60% of oil in solids.
Medium Oil Alkyd	Alkyd of medium oil content, usually containing from 40-60% of oil in solids.
Melt Mixing	A predominant process for the manufacture of powder coatings involving the continuous compounding of the pigments, fillers, additives, resins and curing agents at elevated temperatures.
MFFT (Minimum Film Forming Temperature)	The minimum temperature at which an applied coating forms a continuous film, as evidenced by the visual lack of cracking or powdery appearance of film and film integrity, by testing the film on a temperature gradient plate.
Modified Alkyd	Modified alkyds are those in which the polybasic acid is substituted in part by a monobasic acid, of which the vegetable oil fatty acids are typical.
Oligomer	A polymer composed of molecules containing only two, three or a few repeating structural units.

Glossary

Particle Size	The average diameter of a distribution of particles, usually expressed in microns or nanometers.
PVC (Pigment Volume Concentration)	Ratio of the volume of pigment to the volume of total nonvolatile material (i.e., pigment and binder) present in a coating.
Pinholes	Film defect characterized by small pore-like flaws in a coating that extend entirely through the applied film and have the general appearance of pin pricks when viewed by reflective light.
Post Cure Embrittle-ment	A process whereby a cured coating exhibits increasing embrittlement and decreasing impact resistance with age.
Pot Life	The length of time a paint material is useful after its original package is opened or after catalyst or other ingredients are added.
Powder Coating	Finely divided particles of organic polymer that generally contain pigments, fillers and additives and which remain finely divided during storage under suitable conditions.
Precatalyzed	Usually refers to a resin that has a catalyst already added by the resin manufacturer. This ensures complete mixing of the catalyst with the resin and results in a resin that reacts faster than the uncatalyzed material.
Primer	The first complete coat of paint of a painting system applied to a surface.
Profile	Surface contour of a blast-cleaned or substrate surface, viewed from the edge.
Reactive Diluent	A viscosity reducer for coatings that has low volatility and will become a permanent part of the coating through chemical reaction.
Sagging	Downward moving of a paint film between the times of application and setting, resulting in an uneven coating having a thick lower edge.
Salt Spray Test	Test applied to metal finishes to determine their anticorrosive properties, involving spraying of common salt (sodium chloride) solution on the surface of a coated steel panel.
Shelf Life	The period of time for which a material can normally be stored and still be in a usable condition.
Short Oil Alkyd	Alkyd resin containing less than 40% oil in solids.
Sintering	The tendency of some powder coatings to agglomerate over time, often due to being stored too long at too high a temperature.
Skydrol® Resistance	Product is resistant to hydraulic fluid Skydrol.
Surface Dry	The premature drying of the surface of a liquid coating film so that the under portion is retarded in drying.
Syneresis	The separation of liquid from a gel.
Tack-Free	Freedom from tack of a coating after suitable drying time.
T-Bend Flexibility Test	Simple method for determining the flexibility of coatings by bending a coated metal test strip over itself. A panel is bent and pressed flat by means of a jig to achieve a 180° bend.
Telegraphing	Brush marks or other irregularities in the previous coat or substrate that show through the cured topcoat.
Tg	The temperature at which materials in general change from either a hard glassy state to a softer, rubbery state, or from a soft rubbery state to a harder glassy state.
TGIC (Triglycidyl Isocyanurate)	A curing agent for powder coating resins containing carboxyl groups.
TMA	Trimellitic anhydride
Two-Component Paint	A coating that is manufactured in two components that must be maintained separately until shortly before use.
Uretdione	A material containing uretdione linkages. These linkages are produced by two NCO groups reacting with each other. The original NCO groups are then no longer available for reaction and are termed “blocked.” The reaction is reversible, such that the application of sufficient heat will cause the regeneration of the original NCO groups, which can then react. The advantage of this type of blocking is that there is no release of any blocking agent.
VOC (Volatile Organic Compound)	Any organic compound that participates in atmospheric photochemical reactions; that is, any organic compound other than those that the EPA designates as having negligible photochemical reactivity.
Weathering	Behavior of paint films when exposed to natural weather or accelerated weathering equipment, characterized by changes in color, texture, strength, chemical composition or other properties.
Yellowing	Development of a yellow color on aging.
Yellowing Resistance	The resistance a coating has to turning yellow due to, for example, extended cure times at high temperature, or the use of direct gas-fired curing ovens.

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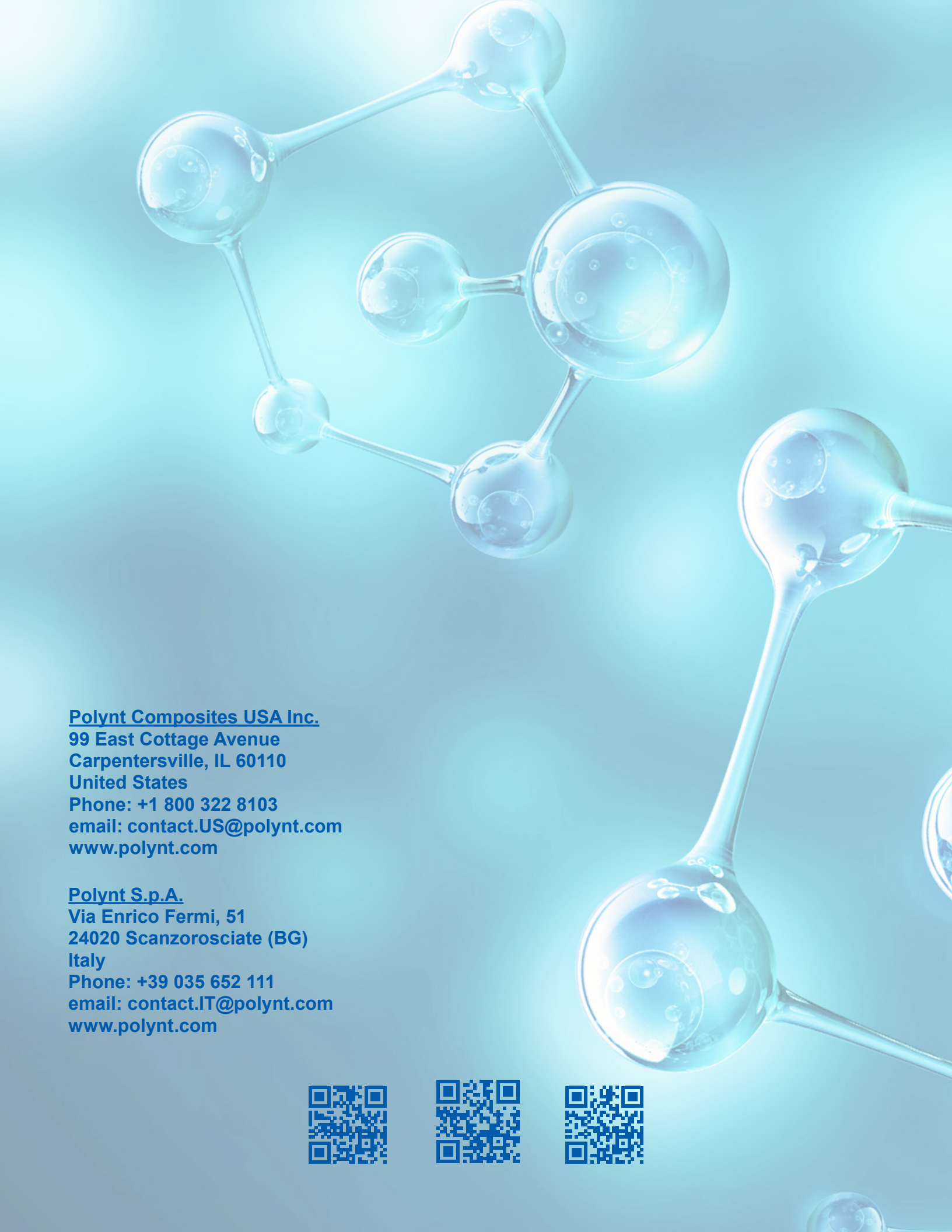

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