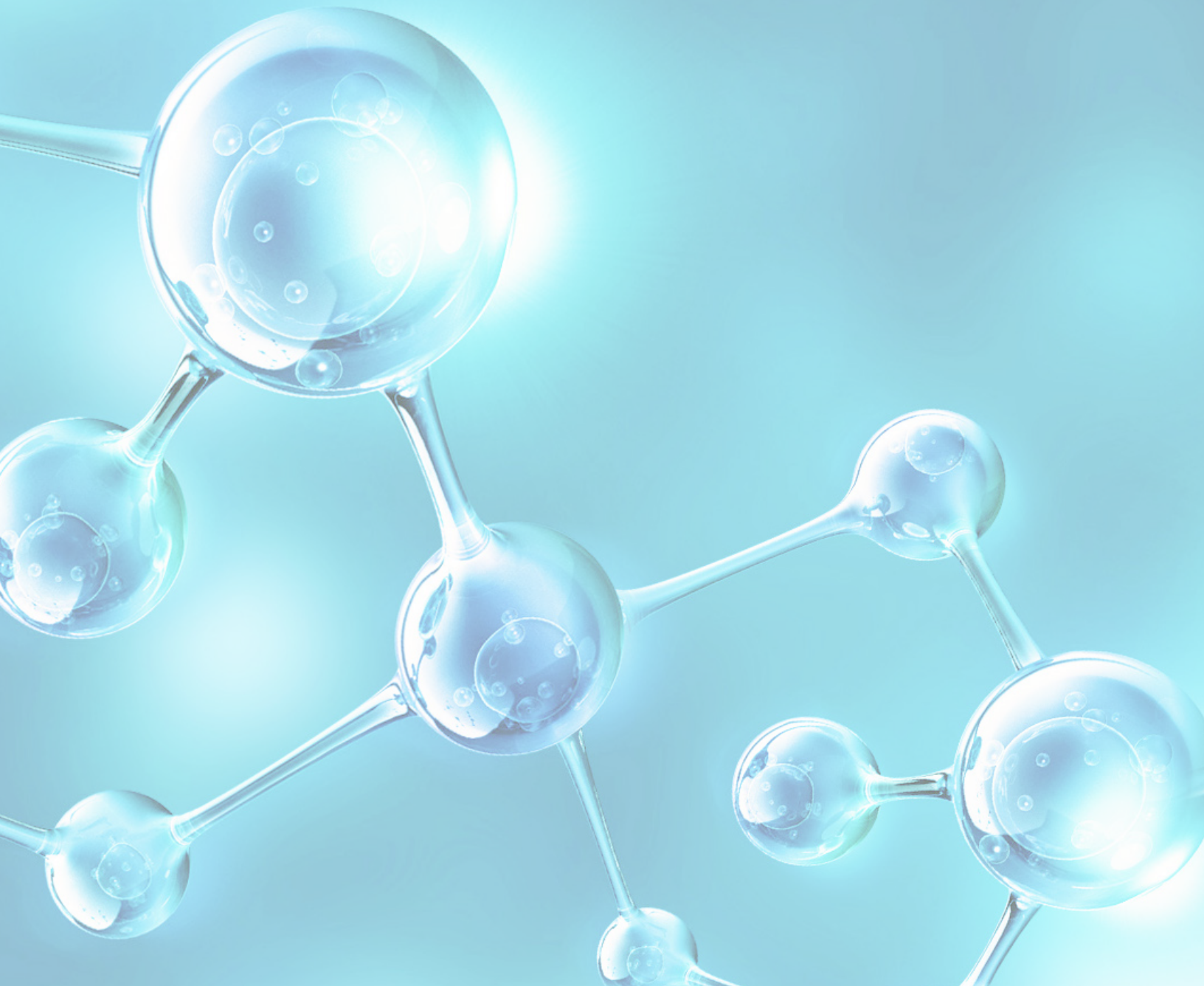




Coating Resins





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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.
T_g	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

Alkyds – Long Oil

PRODUCT	OIL TYPE	% SOLIDS (WEIGHT)	% SOLIDS (VOLUME)	DENSITY (LBS/GAL)	SOLVENTS	VISCOSITY (G - H)	REDUCED VISCOSITY (G - H)
CONVENTIONAL							
DURAMAC® 50-5070	Soya	70	63.0	7.95	MS	Z ₂ - Z ₄	D - G @ 50% MS
BECKOSOL® 10-029	TOFA	70	64.0	7.90	MS	Z ₂ - Z ₄	D - F @ 50% MS
BECKOSOL® 10-060	Soya	70	63.0	7.99	MS	Z - Z ₂	C - F @ 50% MS
BECKOSOL® 10-060-04	Soya	70	63.0	7.99	MS	Z - Z ₂	C - F @ 50% MS
BECKOSOL® 10-061	Soya	60	53.0	7.73	MS	T - V	C - F @ 50% MS
BECKOSOL® 91-373	Soya	65	—	7.85	MS	W - Y	C - F @ 50% MS
BECKOSOL® 91-415	Soya	60	—	7.73	MS	Y - Z ₁	I - L @ 50% MS
BECKOSOL® 92-115	TOFA	55	—	7.65	MS	U - W	D - G @ 45% MS
BECKOSOL® 1272-70	Soya	70	—	7.65	MS	B - D	—
BECKOSOL® 2502-ML-60	Soya	60	—	7.74	LAMS	Z ₂ - Z ₄	S - U @ 50% MS
BECKOSOL® 4027-M-66	Soya	70	63.0	8.00	MS	Z ₄ - Z ₆	F - H @ 50% MS
BECKOSOL® 91913-00	Safflower	65	—	7.80	LAMS	Z - Z ₂	—
BECKOSOL® AA-203	Soya	60	—	7.73	MS	Z ₃ - Z ₅	R - U @ 50% MS
HIGH SOLIDS							
DURAMAC® 201-1209	Soya	85	84.8	8.80	DMC	Z ₂ - Z ₄	—
ARCHEMIS® QD 201-2195	Sunflower / Fatty Acid Blend	96	95.0	8.40	MS	Z ₁ - Z ₃	H - L @ 75% MS
DURAMAC® 57-5816	Sunflower / Fatty Acid Blend	90	87.7	8.20	MS / X*	Z - Z ₂	H - J @ 70% MS
DURAMAC® 57-5866	Sunflower	90	87.3	8.30	MS	Z ₁ - Z ₃	I - K @ 70% MS
BECKOSOL® 10-539	Sunflower / Fatty Acid Blend	90	—	8.20	MS	Z ₁ - Z ₃	I - K @ 70% MS
BECKOSOL® 1271	Linseed	100	100.0	8.35	—	W _{+1/4} - Y	E - H @ 80% MS
BECKOSOL® 1272	Soya	100	100.0	8.35	—	W _{+1/4} - Y	E - H @ 80% MS
BECKOSOL® 1278-M-80	Linseed	80	—	8.25	MS	Z _{+1/2} - Z ₃	—
BECKOSOL® AX-154	Soya	100	100.0	8.24	—	Z ₁ - Z ₂	—

GARDNER COLOR (MAXIMUM)	ACID VALUE (SOLID MAX)	FEATURES AND BENEFITS
7	10	Best balance of cost and performance; formulating versatility from satin to very high gloss architectural and general maintenance coatings
7	10	Easy brushing properties for quality architectural enamels; good gloss and gloss retention
8	8	Standard long oil; architectural and maintenance enamels; meets TT-R-266, Type 1, Class A
8	8	Standard long oil; architectural and maintenance enamels; contains no xylene
8	8	Architectural and maintenance enamels; meets TT-R-266, Type 1, Class B
8	8	Architectural and maintenance enamels; meets TT-R-266, Type 1, Class A
6	8	Architectural and maintenance enamels; excellent brushing properties
8	12	Architectural and maintenance enamels; easy brushing properties; good gloss and gloss retention
8	6 - 10	High solids vehicle for architectural enamels, 70% mineral spirits cut of Beckosol 1272.
6	10	Architectural enamels
8	10	Architectural gloss and semi-gloss enamels; good exterior durability
8	10 - 15	Architectural gloss and semi-gloss enamels; good durability and yellowing resistance
5	10	Architectural gloss and semi-gloss enamels; good color and gloss retention
7	10	DMC version of DURAMAC® 50-5070
8	12	Dry times comparable to conventional systems; excellent gloss and appearance; great brushability; can achieve 150 g/L VOC for semigloss coatings
7	10	Good viscosity reduction for architectural applications; can be formulated to 250 g/L VOC
7	12	Improved yellowing resistance and gloss retention for interior and exterior architectural enamels; can be formulated to 250 g/L VOC
6	10	High solids long oil for architectural enamels; VOC <250 g/L
10	6 - 10	High solids vehicle for architectural enamels
10	6 - 10	High solids vehicle for architectural enamels
9	10	Architectural enamels, brushing enamels, trim enamels
9	7 - 12	Architectural enamels, brushing enamels, trim enamels

Alkyds – Medium Oil

PRODUCT	OIL TYPE	% SOLIDS (WEIGHT)	% SOLIDS (VOLUME)	DENSITY (LBS/GAL)	SOLVENTS	VISCOSITY (G - H)	REDUCED VISCOSITY (G - H)
CONVENTIONAL							
DURAMAC® 51-5113	Soya	50	40.7	7.60	MS	Z ₅ - Z ₇	V - X @ 40% MS
DURAMAC® 51-5117	Soya	50	41.7	7.57	MS	Y - Z ₂	E - H @ 40% MS
DURAMAC® 51-5135	Soya	50	42.3	7.50	VM&P	Z ₂ - Z ₄	N - Q @ 40% VM&P
DURAMAC® 51-5150	Soya / Linseed	50	40.5	7.55	MS	W - Y	C - F @ 40% MS
DURAMAC® 51-5184	Soya	50	40.7	7.60	MS	Z _{1.5} - Z _{3.5}	K - O @ 40% MS
DURAMAC® 51-5186	TOFA	50	40.7	7.60	MS	Z ₄ - Z ₆	C - F @ 35% MS
DURAMAC® 51-7165	Soya	50	43.2	7.55	VM&P	Y - Z ₂	H - L @ 40% VM&P
DURAMAC® 54-5465	Soya	60	52.7	7.70	VM&P	Z ₄ - Z ₇	E - H @ 45% VM&P
DURAMAC® 204-1409	Soya	50	40.9	7.58	MS	W - Z	E - G @ 40% MS
DURAMAC® 204-1434	Soya	65	60.0	8.40	X / MS	Y - Z	—
DURAMAC® 204-1452	Soya	50	40.7	7.45	VM&P	Z ₁ - Z ₃	F - I @ 40% VM&P
DURAMAC® 204-1465	Soya	60	52.7	7.80	VM&P	Z _{3.5} - Z _{4.5}	—
DURAMAC® 204-1829	TOFA / Linseed	50	41.9	7.89	X / VM&P / MS	Z - Z ₂	—
DURAMAC® 204-8117	Soya	65	59.3	8.35	t-BuAc / MAK*	W - Z	—
BECKOSOL® 11-035	Soya	50	41.0	7.60	MS	Y - Z ₂	F - J @ 40% MS
BECKOSOL® 11-070	Soya / Linseed	50	41.0	7.60	MS	V - Y	C - G @ 40% MS
BECKOSOL® 11-081	Soya	50	40.0	7.44	VM&P	Z - Z ₂	G - J @ 40% VM&P
BECKOSOL® 11-090	Soya	60	52.0	7.72	VM&P	Z ₃ - Z ₅	D - G @ 45% VM&P
BECKOSOL® 11-090LC	Soya	60	52.0	7.72	VM&P	Z ₃ - Z ₅	E - H @ 45% VM&P
BECKOSOL® 11-630	TOFA	50	41.0	7.65	MS	Z _{4+1/2} - Z ₆	Q - U @ 40% MS
BECKOSOL® 1445-M-55	Soya / Linseed	55	—	7.70	MS	Z ₁ - Z ₃	—
BECKOSOL® 11036-E1	Soya	50	—	10.20	PCTBF / A100	V - Y	—
BECKOSOL® AA-207	Soya	50	—	7.46	VM&P / X	Z ₄ - Z ₆	R - U @ 40% VM&P
BECKOSOL® AA-220	Soya	60	—	8.25	T	V - Y	I - L @ 50% T
BECKOSOL® AA-220-E2	Soya	70	—	8.52	t-BuAc / T	Z ₃ - Z ₅	V-W _{+1/2} @ 50% t-BuAc
BECKOSOL® IA-378	Soya	45	—	7.48	MS	W - Y	N - Q @ 40% MS
BECKOSOL® IA-638	Soya	47	—	7.66	MS / X	X - Z	—
HIGH SOLIDS							
DURAMAC® 204-1335	Soya	75	70.0	8.80	A100 / n-BuAc	Y - Z ₁	—
DURAMAC® 204-2768	Soya / Linseed	80	76.0	8.75	A100 / n-BuAc / X	Z ₁ - Z ₃	B - C @ 60% n-BuAc
BECKOSOL® 97-150	Soya	75	70.0	8.55	T	V - X	—

GARDNER COLOR (MAXIMUM)	ACID VALUE (SOLID MAX)	OH VALUE (ON SOLIDS)	FEATURES AND BENEFITS
6	10	114	High drink alkyd; fast dry; good color and gloss retention for air-dry primers and enamels
6	10	90	High gloss with good color and color retention for low odor architectural and industrial maintenance applications; can be used to modify long oil alkyds to improve dry
7	10	96	Good gloss, color retention, flexibility and durability for general industrial coatings; compatible with medium oil chain-stopped alkyds
6	10	101	Brushable industrial maintenance coatings; meets TT-R-266D, Type III
5	12	55	General purpose alkyd with good dry, durability and brushability for architectural and industrial maintenance systems
6	10	—	High drink alkyd for lower solids coatings; excellent durability and water and gasoline resistance
7	10	—	Fast drying medium oil alkyd with good water resistance
8	8	—	General metal and structural steel applications
8	10	57	Good dry, flow and leveling, and color retention; high gloss; meets TT-R-266D, Type IV
6	6	100	Hydroxyl functionality for baking systems where additional adhesion is desired; very fast dry; excellent flow and leveling and high gloss; excellent pigment wetter
8	9	72	Good gloss, color retention, flexibility and durability for general industrial coatings
8	8	—	Fast dry time and good pigment wetting for use in traffic marking paints; good abrasion resistance
12	16	—	Fast dry time with good initial appearance; good gloss and tack-free time
7	10	90	Supplied in exempt solvent; high gloss and good color retention for brushable trade sales and maintenance coatings
8	12	—	Industrial primers and enamels
10	12	—	Industrial primers and enamels; meets Federal specification TT-R-266 and Type III
4	8	—	Traffic paints; industrial primers and enamels
8	8	—	Traffic paints
5	8	—	Traffic paints, low color
8	7 - 14	—	Industrial primers and enamels
8	12	—	Meets Federal Spec TT-R-266d, Type III, metal and wood substrates
8	5 - 12	—	Supplied in exempt solvent; industrial primers and enamels
8	14	—	Traffic paint, quick dry primers and enamels
8	12	—	Traffic paint
8	12	—	Supplied in exempt solvent; traffic paints
7	12	—	Low cost industrial primers and enamels
7	5	—	Industrial air-dry or trade-sales finishes for interior use
8	10	—	High gloss, excellent brushing properties and compatibility with aliphatic solvents for aerosol applications; sufficient hydroxyl functionality for baking
8	10	50	Fast dry time with good gloss retention, hardness and exterior durability
8	8	—	Fast dry for traffic paint

Alkyds – Short Oil

PRODUCT	OIL TYPE	% SOLIDS (WEIGHT)	% SOLIDS (VOLUME)	DENSITY (LBS/GAL)	SOLVENTS	VISCOSITY (G · H)	REDUCED VISCOSITY (G · H)
CONVENTIONAL							
DURAMAC® 52-5252	Soya	50	42.7	8.30	X	Z ₁ - Z ₃	H - J @ 40% X
DURAMAC® 52-5284	TOFA	55	46.2	8.00	VM&P / i-BuOH	Z ₆ - Z ₇	F - I @ 40% X
DURAMAC® 207-1040	TOFA	50	43.0	8.30	X	Z ₂ - Z ₄	K - N @ 40% X
DURAMAC® 207-1985	TOFA	70	62.6	8.65	EGPE / EtOH	T - V	C - G @ 55% EGPE
BECKOSOL® 12-054	TOFA	50	42.0	8.32	X	Z ₂ - Z ₄	K - N @ 40% X
BECKOSOL® 12-093	TOFA	50	43.0	8.25	X	V - Y	C - E @ 40% X
BECKOSOL® 1133-A4-70	Soya	70	—	8.80	n-BuAc / A100	Z ₃ - Z ₅	—
BECKOSOL® 1133-X-60	Soya	60	—	8.45	X	Z _{3+3/4} - Z _{5+1/4}	—
BECKOSOL® 1365-X-60	Linseed	60	—	8.45	X	Z - Z ₂	B _{-3/4} - E @ 40% X
BECKOSOL® 1365-6X3-60	Linseed	60	—	7.97	Rule 66 exempt solvent blend	Z - Z ₂	B _{-3/4} - G _{+1/4} @ 40% X
BECKOSOL® 1453-X-50	TOFA	50	43.1	8.25	X	Z ₁ - Z ₃	F _{+1/2} - L @ 40% X
BECKOSOL® 12054-E2	TOFA	54	47.5	8.40	t-BuAc / A100	Z ₁ - Z ₃	—
BECKOSOL® 12093-A4-70	TOFA	70	—	8.91	n-BuAc	Z _{3+1/2} - Z _{5+1/2}	—
BECKOSOL® AC-230	Soya	50	—	8.20	X / n-BuOH	Z ₁ - Z ₃	J - M @ 40% X
BECKOSOL® AC-230-A4V-50	Soya	50	—	7.90	n-BuAc / VM&P / n-BuOH	Y - Z ₂	D - G @ 40% X
BECKOSOL® IA-441	Soya	55	—	8.25	T	W _{+1/2} - Y	Z _{9+3/4} @ 40% T
HIGH SOLIDS							
DURAMAC® 57-5742	TOFA	88	87.1	9.33	X	Z _{5.5} - Z _{6.5}	I - M @ 70% X
DURAMAC® 207-1575	TOFA	85	81.0	9.30	A100	Z _{4.5} - Z _{6.5}	—
DURAMAC® 207-2012	Fatty Acid Blend	80	75.6	8.90	n-BuAc / MAK	X - Z	K - M @ 70% n-BuAc
DURAMAC® 207-2706	TOFA	78	77.0	9.10	n-BuAc	T - V	—
BECKOSOL® 6193-K3-80	Sunflower	80	74.0	8.75	MPK / X	U - W	—
BECKOSOL® 91748-00	Soya	75	68.8	8.85	i-BuAc / i-PrOH / A100	Z _{3+1/2} - Z _{4+1/2}	—

GARDNER COLOR (MAXIMUM)	ACID VALUE (SOLID MAX)	OH VALUE (ON SOLIDS)	FEATURES AND BENEFITS
4	12	—	Good exterior gloss retention; compatible with urea and melamine resins; good air-dry properties and corrosion resistance; easily formulated into bake coatings that meet fast production finishing schedules
6	11	—	Low force dry curing with fast cure and high gloss; good pigment wetting, impact resistance and flexibility
6	12	140	Excellent baking finishes that exhibit outstanding hardness properties; good chemical and solvent resistance
7	10	—	Fast curing and low yellowing; excellent durability and high throughput
6	12	—	Standard short oil; high viscosity baking enamels with good initial color and very good exterior durability
6	4 - 10	—	Low viscosity industrial baking enamels with fast baking speed; excellent color retention
4	10	—	General purpose industrial coatings with low temperature cure; good color and gloss retention
4	10	—	General purpose industrial coatings with low temperature cure; good color and gloss retention
9	18 - 25	—	Meets Federal Spec TT-P-1757, Composition C, Corrosion Inhibiting Primer for Aircraft Use
9	18 - 25	—	Meets Federal Spec TT-P-1757, Composition C, Corrosion Inhibiting Primer for Aircraft Use. Cut in exempt solvents as defined by Rule 66
7	10	—	High drink alkyd for baking enamels
6	12	—	Same polymer as BECKOSOL® 12-054 supplied in tertiary butyl acetate and Aromatic 100.
6	4 - 10	—	Industrial coatings with low temperature cure; good color and gloss retention; fast baking speeds
7	10	—	Fast air dry and thermosetting enamels for drum enamels, aerosols and general industrial finishes
7	10	—	Fast air dry and thermosetting enamels for drum enamels, aerosols and general industrial finishes
8	20	—	Fast solvent release for non-coning traffic paint
7	10	152	Workhorse resin designed for baking systems; good cost/performance balance; can be formulated to 340 g/L VOC
7	10	152	Duramac 57-5742 in HAPS-free solvent.
7	3	81	Designed for use with isocyanate crosslinkers; high equivalent weight for low isocyanate demand (economical); melamine compatible; excellent exterior durability
7	12	—	Cut in a HAPS-free solvent designed for baking systems; good gloss retention; excellent balance of corrosion and humidity resistance
8	10	68	Designed for use with isocyanate crosslinkers; high equivalent weight for low isocyanate demand (economical); can be formulated to VOC = 420 g/L with HDO or IPDI prepolymers.
4	15 - 25	—	Very low HAPS, <0.3% for conversion varnishes, nitrocellulose modifier or baking enamels

Alkyds – Non-Oxidizing Oils

PRODUCT	OIL TYPE	% SOLIDS (WEIGHT)	% SOLIDS (VOLUME)	DENSITY (LBS/GAL)	SOLVENTS	VISCOSITY (G - H)	REDUCED VISCOSITY (G - H)
CONVENTIONAL							
DURAMAC® 52-5205	Coconut	60	52.6	8.55	X	Z ₃ - Z ₅	C - E @ 40% X
DURAMAC® 52-5222	Coconut	60	50.6	8.10	VM&P / i-BuOH	Z _{3.5} - Z _{5.5}	R - V @ 50% X
DURAMAC® 207-1108	Coconut	60	52.2	8.62	T / X	Y - Z ₂	—
DURAMAC® 207-1109	Coconut	70	62.1	8.74	i-BuOH / T / X	Z ₁ - Z ₃	—
DURAMAC® 207-1205	Coconut	70	63.2	8.92	n-BuAc	Z ₁ - Z ₃	Q - T @ 60% n-BuAc
DURAMAC® 207-1395	Coconut	60	49.5	8.10	VM&P / i-BuOH / X	Z ₂ - Z ₄	—
BECKOSOL® 12-021	Coconut	60	53.0	8.65	X / T	X - Z	J - M @ 50% T
BECKOSOL® 12-035	Coconut	60	52.0	8.65	X	Z ₁ - Z ₃	A - D @ 40% X
BECKOSOL® 90-095	Coconut	70	62.0	9.02	n-BuAc / X	Z ₁ - Z ₃	D - F @ 50% T
BECKOSOL® 91-470	Coconut	70	62.0	9.02	n-BuAc	Z ₁ - Z ₃	D - F @ 50% X
BECKOSOL® 98-364	Coconut / Soya	70	—	8.43	VM&P / i-BuOH / X	Z ₁ - Z ₃	A - B @ 50% X
BECKOSOL® 2477-X-65	Castor	65	58.5	8.60	X	X - Z	A2 - B @ 40% X
BECKOSOL® 2575-X-60	Coconut	60	52.0	8.65	X	Z ₂ - Z ₄	C - E @ 40% X
BECKOSOL® 12021-G4-70	Coconut	70	64.0	9.05	EGBE / A100	Z - Z ₃	—
BECKOSOL® 12035-E2	Coconut	64	56.0	8.75	t-BuAc / A100	Z ₁ - Z ₃	—
BECKOSOL® 91689-00	Coconut	70	—	8.86	T / X / n-BuOH	Z ₁ - Z ₃	—
HIGH SOLIDS							
DURAMAC® 207-2750	Coconut	75	68.2	8.78	IPA / Isobutyl Acetate / A100	Z ₂ - Z ₄	—
BECKOSOL® 90-185	Coconut	80	74.0	9.21	n-BuAc / MPK / X	Z ₄ - Z ₆	—
BECKOSOL® 91-586	Coconut	89	—	—	MPK/PMA	Z _{6+3/4} - Z _{7+3/4}	—
BECKOSOL® 1351	Castor	100	100.0	8.60	—	W _{+1/4} - Y	—
BECKOSOL® 91780-00	Coconut	75	—	8.95	IPA / Isobutyl Acetate / A100	Z ₁ - Z ₃	—

GARDNER COLOR (MAXIMUM)	ACID VALUE (SOLID MAX)	OH VALUE (ON SOLIDS)	FEATURES AND BENEFITS
2	8	175	High quality non-yellowing baking enamels and plasticizers for nitrocellulose lacquers
3	10	—	Non-drying, non-yellowing, high gloss alkyd for high quality baking finishes; lacquer plasticizing resin
2	8	175	Designed for use in high quality wood conversion varnishes; low color; can be used as a plasticizer for nitrocellulose lacquers; can be cured with isocyanate crosslinkers
2	7	175	Designed for use in high quality wood conversion varnishes; low color; can be used as a plasticizer for nitrocellulose lacquers; can be cured with isocyanate crosslinkers
3	8	175	Higher solids, high quality non-yellowing baking enamels and plasticizers for nitrocellulose lacquers
2	12	—	Designed for use in baking systems; good reactivity; high gloss and good exterior weathering
3	12	—	Standard coconut alkyd; plasticizer for nitrocellulose lacquers; light-colored baking enamels
3	12	—	Standard coconut alkyd; plasticizer for nitrocellulose lacquers; light-colored baking enamels
2	12	—	Plasticizer for nitrocellulose lacquers; light-colored baking enamels
4	12	—	High temperature baking enamels, light colored furniture lacquers
3	12	—	Wood finishes
6	10	125	Improves elongation and flexibility of nitrocellulose lacquers
3	10	—	Plasticizer for nitrocellulose lacquers; light-colored baking enamels
3	12	—	Good color and color retention in a baking enamel. Capable of 275 g/L VOC.
3	4 - 12	—	Standard coconut supplied in exempt solvent; plasticizer for nitrocellulose lacquers; light-colored baking enamels
2	7	—	Conversion varnishes; light colored furniture lacquers
3	26	—	High quality non-yellowing baking enamels; good exterior durability
3	12	—	Plasticizer for nitrocellulose lacquers; light-colored baking enamels
3	15	—	High bake white enamels, light colored furniture lacquers
5	10 - 15	165	Improves elongation and flexibility of nitrocellulose lacquers
3	4 - 12	—	Standard coconut supplied in low HAPS solvent; plasticizer for nitrocellulose lacquers; high bake white enamels

Alkyds – Chain-Stopped

PRODUCT	OIL TYPE	% SOLIDS (WEIGHT)	% SOLIDS (VOLUME)	DENSITY (LBS/GAL)	SOLVENTS	VISCOSITY (G - H)	REDUCED VISCOSITY (G - H)
CONVENTIONAL							
DURAMAC® 51-5110	Soya	50	41.3	7.70	MS / PMA	Z ₄ - Z ₆	S - V @ 35% MS
DURAMAC® 51-7634	Soya	60	50.5	8.00	X	Z ₂ - Z ₄	A - C @ 40% X
DURAMAC® 52-5290	TOFA	50	42.7	8.30	X	W - Z	F - I @ 40% X
DURAMAC® 52-7597	TOFA	50	40.5	7.80	VM&P / i-BuOH / T / X	Z ₁ - Z ₃	—
DURAMAC® 52-7733	TOFA	50	42.3	8.33	X	Z ₃ - Z ₅	N - P @ 40% X
DURAMAC® 52-7784	TOFA	65	56.3	8.45	MAK	T - X	K - N @ 60% MAK
DURAMAC® 204-1050	Soya	60	51.4	7.85	VM&P / T / IPA	Z ₃ - Z ₅	A1 - B @ 40% X
DURAMAC® 207-1213	TOFA	60	51.9	8.60	t-BuAc / MAK*	Z - Z ₂	L - P @ 40% t-BuAc
DURAMAC® 207-1228	TOFA	70	67.0	9.40	DMC/MAK*	Z ₄ - Z ₆	—
DURAMAC® 207-1246	TOFA	50	42.8	8.40	T / X	Z ₁ - Z ₅	H - K @ 40% T
DURAMAC® 207-1290	TOFA	55	49.0	8.40	t-BuAc / MAK*	W - Z	F - J @ 40% t-BuAc
DURAMAC® 207-1291	TOFA	60	57.0	9.21	DMC / MAK*	W - Z	—
DURAMAC® 207-1405	Soya	50	42.5	8.30	X	U - W	C - E @ 40% X
DURAMAC® 207-1406	Soya	50	42.5	8.30	X	U - Y	E _{+1/4} - H @ 40% X
DURAMAC® 207-1407	Soya	56	48.1	8.26	t-BuAc / MAK*	X - Z	—
DURAMAC® 207-7734	TOFA	60	52.3	8.71	n-BuAc / X	Y - Z ₁	—
BECKOSOL® 12-102	TOFA	50	43.0	8.28	X	X - Z	E - H @ 40% X
BECKOSOL® 91-156	Soya	60	—	8.10	X / T / VM&P / i-BuOH	Z ₂ - Z ₄	N - P @ 50% X

GARDNER COLOR (MAXIMUM)	ACID VALUE (SOLID MAX)	OH VALUE (ON SOLIDS)	FEATURES AND BENEFITS
6	12	62	Medium Chain-Stopped with excellent weatherability; high gloss and durable exterior coatings; fast dry to tape times; excellent adhesion and flexibility; good pigment wetting
6	12	—	Medium Chain-Stopped with fast dry, good color and gloss retention
6	12	112	Fast dry with good gloss for general industrial air-dry and baking finishes
8	11	—	Good dry time and appearance
6	10	145	Very fast dry, high drink alkyd for general industrial air-dry and baking applications
8	12	123	Higher solids; good gloss and hardness
6	12	—	Medium Chain-Stopped with fast dry, good pigment wetting and adhesion
7	12	—	HAPS-free; very fast air dry; easily formulated into baking enamels
8	12	—	High gloss and good hardness in fast air dry and force dry applications.
7	12	—	Fast air dry; low yellowing, good hardness
6	12	119	HAPS-free and exempt solvent; very fast dry with good gloss retention and good compatibility with medium oil alkyds
7	12	—	HAPS-free and exempt solvent; very fast dry with good gloss retention and good compatibility with medium oil alkyds
6	12	85	Superior exterior durability and very fast dry for machinery and implement coatings; can also be used in low temperature bake finishes
6	12	—	Implement finishes and other uses where high quality, fast dry and good durability are desired
6	12	85	Implement finishes and other uses where high quality, fast dry and good durability are desired. Supplied in exempt solvent.
8	12	—	High gloss and good hardness in fast air-dry and force-dry applications; high solvent drink
6	12	—	Standard chain-stopped; fast dry enamels, shopcoats, and conversion varnishes; good hardness and color; good exterior durability; rapid response with UF and MF resins
5	12	—	Fast set and through dry times for industrial and machinery enamels; good gloss and color retention

Alkyds – Chain-Stopped

PRODUCT	OIL TYPE	% SOLIDS (WEIGHT)	% SOLIDS (VOLUME)	DENSITY (LBS/GAL)	SOLVENTS	VISCOSITY (G · H)	REDUCED VISCOSITY (G · H)
CONVENTIONAL							
BECKOSOL® 91-297	Soya	65	59.0	8.57	X	Z ₃ - Z ₅	H - K @ 50% X
BECKOSOL® 91-383	Soya	55	47.5	8.46	A100 / X	Z _{2+1/2} - Z _{3+3/4}	—
BECKOSOL® 12102-E2	TOFA	55	47.0	8.45	t-BuAc / n-BuAc / A100	Z - Z ₂	—
BECKOSOL® 12103-X-50	Soya	50	43.0	8.30	X	U - W	C - E @ 40% X
BECKOSOL® 12108-E2-56	Soya	56	48.2	8.50	t-BuAc / A100	X - Z	—
BECKOSOL® 91790-00	Soya	50	42.0	7.62	LAMS / X	Z ₃ - Z ₅	A - D @ 40% X
BECKOSOL® AB-125	TOFA	50	—	8.40	X	Z ₂ - Z ₄	C - E @ 34% X
BECKOSOL® AB-125-E2	TOFA	55	—	8.64	t-BuAc / A100	Z ₃ - Z ₅	—
BECKOSOL® EP-2692	TOFA	50	—	8.16	X / VM&P	Z - Z ₄	F - I @ 40% X
HIGH SOLIDS							
DURAMAC® 57-5720	TOFA	75	68.3	8.65	MPK / n-BuAc / X*	Z - Z ₂	—
DURAMAC® 57-5731	Soya	75	69.3	8.80	MPK / n-BuAc / X*	Z ₁ - Z ₃	I - K @ 60% X
DURAMAC® 207-2707	Fatty Acid Blend	75	67.9	8.90	X / MPK	Z - Z ₂	G - H @ 60% X
DURAMAC® 207-2720	TOFA	75	69.8	8.90	n-BuAc / MAK*	Z ₂ - Z ₅	—
DURAMAC® 207-2725	DCO / Soya	75	68.2	8.90	X / MPK	Z - Z ₂	—
DURAMAC® 207-2742	Sunflower	75	69.0	8.99	n-BuAc / X	Z ₁ - Z ₃	H - I @ 60% X
DURAMAC® 207-2852	DCO / Soya	75	67.3	8.90	MAK	Z - Z ₃	F - I @ 60% MAK
BECKOSOL® 6421-X-75	Sunflower	75	69.1	8.95	X	Z _{5+1/2} - Z _{6+1/4}	—
BECKOSOL® 6422-K3-75	Sunflower	75	69.0	8.70	MPK	X _{+1/2} - Z _{+1/2}	—
BECKOSOL® 6424-A4K4-75	Soya / DCO	75	68.5	8.90	n-BuAc / MPK / X	Z ₁ - Z ₃	—
BECKOSOL® 6440-A4-85	Sunflower	85	82.3	8.65	n-BuAc	Z ₄ - Z ₅	—

GARDNER COLOR (MAXIMUM)	ACID VALUE (SOLID MAX)	OH VALUE (ON SOLIDS)	FEATURES AND BENEFITS
6	12	—	Medium oil chain-stopped; fast dry enamels, shopcoats, and conversion varnishes
7	8 - 14	—	Good dry and durability; high gloss for industrial and maintenance coatings
6	5 - 12	—	Non-HAPS, VOC exempt solvent version of BECKOSOL® 12-102
6	5 - 12	—	Good dry and durability; high gloss for industrial and maintenance coatings
6	12	—	Exempt solvent short oil Chain-Stopped for low temperature bake systems and machinery and implement coatings
4	6	—	Medium oil Chain-Stopped soya alkyd in low aromatic mineral spirits and xylene
5	10	—	Fast dry enamels, shopcoats, and conversion varnishes; good hardness and color; good exterior durability; rapid response with UF and MF resins
5	5 - 10	—	Exempt solvent version of BECKOSOL® AB-125
5	14	—	Fast dry, good gloss and color retention
12	10	66	Excellent dry rate with good hardness, gloss and color retention for general industrial applications; can be formulated to 420 g/L VOC
10	10	63	Good hardness, gloss and color retention with excellent viscosity reduction curve for industrial air-dry and baking applications
8	15	34	Short dry-to-handle time; fast cutback; low viscosity and good exterior durability; lower VOC is possible
10	10	66	HAPS-free version of DURAMAC® HS 57-5720
8	15	47	Designed to produce lacquer-like dry times; low viscosity at relatively low VOC
6	15	53	Good gloss and color retention with fast viscosity cutback for air-dry enamels
10	14	52	HAPS-free with excellent gloss and exterior durability; low viscosity at relatively low VOC
8	10	—	Fast dry; low VOC enamels and shopcoats
8	10	—	Fast dry; near HAPS-free; low VOC enamels and shopcoats
6	14	—	Fast dry; near HAPS-free and low MIR solvents; low VOC enamels and shopcoats
8	10	—	Fast dry; durable industrial finishes

Modified Copolymers

PRODUCT	MODIFIER	OIL TYPE	% SOLIDS (WEIGHT)	% SOLIDS (VOLUME)	DENSITY (LBS/GAL)	SOLVENTS	VISCOSITY (G - H)	REDUCED VISCOSITY (G - H)
CONVENTIONAL								
MACOPOL® 53-5303	VT	Soya	50	42.6	7.38	VM&P	Y - Z ₁	N - Q @ 40% VM&P
MACOPOL® 53-5356	VT	Linseed	60	54.2	7.45	VM&P	Z ₁ - Z ₃	C - F @ 40% VM&P
MACOPOL® 53-5359	Acrylic / Styrene	DCO	50	45.0	7.95	X	R - U	D - F @ 40% X
MACOPOL® 214-1003	VT / Styrene	Linseed	60	52.6	7.42	VM&P	Y - Z ₁	B - E @ 40% VM&P
MACOPOL® 214-1008	VT	Soya / DCO	60	53.4	7.70	MS	Z - Z ₂	—
MACOPOL® 214-1025	Styrene	Soya	60	53.7	8.12	X / VM&P	Z ₂ - Z ₅	G - K @ 40% X
MACOPOL® 214-1092	VT	Soya	60	52.3	7.65	VM&P	Z - Z ₂	C - F @ 40% VM&P
MACOPOL® 214-1260	VT / Styrene	Soya	60	51.5	7.60	VM&P	X - Z	—
MACOPOL® 214-1357	Acrylic / Styrene	Soya	60	52.3	7.65	VM&P / X	Z - Z ₂	E - G @ 40% VM&P
MACOPOL® 214-1408	VT	Soya / DCO	60	51.1	7.64	VM&P	Y - Z ₁	—
MACOPOL® 214-1428	VT / Styrene	Soya / Linseed	60	50.3	7.65	VM&P / MAK	Z - Z ₂	—
MACOPOL® 214-1481	VT	Soya	60	53.9	7.58	LAMS / A100	Z - Z ₂	E - G @ 40% LAMS
MACOPOL® 214-1524	VT / Acrylic	Soya	60	51.2	7.65	VM&P	Z - Z ₂	—
MACOPOL® 214-1530	Styrene	Soya	60	53.1	7.85	n-BuAc / VM&P	V - X	—
MACOPOL® 214-2160	Styrene	Tung / Soya	70	64.8	8.43	X	Z ₂ - Z ₄	F - H @ 50% X
AMBERLAC® 13-040	VT	Soya	50	40.0	7.35	VM&P	Z ₃ - Z ₅	—
AMBERLAC® 13-046	Acrylic	Soya	50	43.0	8.18	X	T - V	D - F @ 40% X
AMBERLAC® 13801-S	Acrylic	DCO	50	45.0	8.05	A100	L - Q	—
AMBERLAC® 13-802	Acrylic	DCO	50	44.0	8.00	X	N - R	—
AMBERLAC® 13802-E2	Acrylic	DCO	60	55.0	8.30	t-BuAc / A100	Z - Z ₂	—
AMBERLAC® 1074	VT	Linseed	60	—	7.40	VM&P	X _{+3/4} - Z ₁	—
AMBERLAC® 3704-V-60	VT / Styrene	Soya	60	54.7	7.50	VM&P / T	X - Z	—
HIGH SOLIDS								
MACOPOL® 57-5847	VT / Styrene	Soya / Linseed	80	77.0	8.30	X	Z ₂ - Z ₅	G - J @ 60% VM&P
MACOPOL® 214-1158	Styrene / Acrylic	Fatty Acid Blend	70	65.0	8.60	n-BuAc	Y - Z ₁	J - L @ 60% n-BuAc
MACOPOL® 214-2105	VT	Soya	80	77.6	8.20	X	Z ₃ - Z ₄	—
MACOPOL® 214-2122	Styrene / Acrylic	Fatty Acid Blend	70	63.4	8.50	X	Z - Z ₂	U - W @ 65% X
MACOPOL® 214-2758	VT / Styrene	Soya / Linseed	75	69.7	8.30	MAK	Z - Z ₃	J - M @ 65% MPK

GARDNER COLOR (MAXIMUM)	ACID VALUE (SOLID MAX)	FEATURES AND BENEFITS
6	8	Good gloss and adhesion to wood surfaces coupled with fast dry; good compatibility with aerosol propellants
5	8	Fast dry; rapid hardness and property development; good pigment wetting
8	10	Excellent exterior durability; fast dry and good adhesion to metal surfaces for automotive applications
5	10	Excellent gloss; good aliphatic solvent tolerance with fast solvent release in very hard films; capable of high pigment loading
5	5	Good hardness and dry properties for architectural applications
8	10	Good durability, gloss, and gloss retention for air and force-dry applications
5	8	Extremely fast dry and good adhesion to a variety of substrates; can be formulated into stain-blocking primers
6	10	Fast dry; good adhesion to wood; good gloss and compatibility with aerosol propellants
6	10	Extremely fast dry; good hardness development
5	6	Very fast air-dry; good scratch and mar resistance; can be used as stain blocking primer
6	8	Very fast air-dry; Good adhesion to wood, good compatibility with aerosol propellants
5	10	Extremely fast dry and good adhesion to a variety of substrates; can be formulated into stain-blocking primers
6	8	Fast dry to handle rate; high gloss; improved durability over VT-modified alkyd
8	10	Fast dry; good adhesion to wood; fast recoat and sanding times
7	9	Fast dry; good exterior durability for general industrial and implement coatings
6	14	Fast dry enamels, force-dry primers and hammertone finishes
5	14	General topcoats with fast dry; good exterior durability, gloss and color
5	14	Faster solvent evaporation; fast air dry and baking properties, excellent hardness and mar resistance
4	14	General topcoats with fast dry; excellent exterior durability, gloss and color
5	14	Amberlac 13-802 supplied in exempt solvent
4	6.7	Quick dry enamels, aerosol, sanding sealer and factory primers
6	14	High solids for lower VOC primers
10	15	340 g/L VOC formulas at good spray viscosity; suitable for wood or stain blocking primers; soluble in aliphatic hydrocarbon solvents
6	4	Fast dry; excellent exterior durability and good corrosion resistance; meets 420 g/L VOC with good application properties; HAPS-free version of MACOPOL® HS 214-2122
4	10	Extremely fast cutback with fast dry and good hardness development; can be formulated to meet VOC requirements below 360 g/L
7	4	Excellent durability, color and gloss retention; can be formulated to meet VOC requirements of 360 g/L
7	12	Quick dry with fast hardness development; good gloss and low VOC (360 - 420 g/L)

Alkyds – Phenolic-Modified

PRODUCT	OIL TYPE	% SOLIDS (WEIGHT)	% SOLIDS (VOLUME)	DENSITY (LBS/GAL)	SOLVENTS	VISCOSITY (G - H)	REDUCED VISCOSITY (G - H)
CONVENTIONAL							
REZIMAC® 52-5203	Linseed / Tung	50	42.2	8.35	X	X - Z	G - J @ 40% X
REZIMAC® 216-1074	Tung	54	47.9	7.40	MS	F - H	—
BECKOSOL® 10-015	Linseed	60	51.0	8.08	VM&P / X	Z ₂ - Z ₄	G - J @ 40% VM&P
BECKOSOL® 10-613	TOFA	60	50.0	7.78	VM&P / X	Z ₅ - Z _{8+1/2}	F - J @ 40% VM&P
BECKOSOL® 12-079	Linseed / Tung	50	42.0	8.29	X	W - Y	F - J @ 40% X
BECKOSOL® 13-204	Tung	50	45.0	7.90	A100	J - M	--
BECKOSOL® 663-X-50	Linseed / Tung	50	—	8.32	X	W _{+1/4} - Y	G _{+1/4} - K _{+1/4} @ 40% X
BECKOSOL® 663-6X3-50	Linseed / Tung	50	—	7.80	VM&P / T / i-BuOH	W _{+1/4} - Y _{+1/4}	B - E @ 40% X
BECKOSOL® 663-XX-50	Linseed / Tung	50	—	7.80	VM&P / X / i-BuOH	X _{+1/2} - Z _{+1/2}	B - E @ 40% X
BECKOSOL® 663-S-50	Linseed / Tung	50	—	8.34	A100 / LAMS	Z ₆ - Z ₇	W - Y @ 40% X
BECKOSOL® 3859-E1-65	Oxidizing	65	—	9.74	PCBTF / MAK	Z ₁ - Z ₃	—
BECKOSOL® 8076-M-66	Tung / Linseed	60	53.0	7.50	MS	L - N	C - F @ 50% MS
BECKOSOL® AC-000	Linseed / Tung	60	—	7.50	MS / Dipentene	M - Q	D - F @ 50% MS
HIGH SOLIDS							
REZIMAC® 57-5737	TOFA	75	68.1	8.72	n-BuAc / MPK / X*	Z - Z ₂	C - E @ 60% MPK
REZIMAC® 57-5754	TOFA	75	68.1	8.72	n-BuAc / MPK / X*	Z - Z ₂	C - E @ 60% MPK
REZIMAC® 207-2754	TOFA	75	67.3	8.90	MAK / n-BuAc	Z ₄ - Z ₆	—
REZIMAC® 207-2810	Soya	76	69.0	8.78	MPK / n-BuAc / X	Z - Z ₂	—
REZIMAC® 216-2134	Tung	75	70.0	7.70	MS	T - V	H - J @ 66% MS
BECKOSOL® 3758-M-85	Linseed / Tung	85	—	7.80	MS	Z ₁ - Z ₂	—
BECKOSOL® 3859-Z-80	Oxidizing	80	73.5	8.90	MPK / T / X	Z ₁ - Z ₃	—
WATER-REDUCIBLE							
REZIMAC® 74-7478	Fatty Acid Blend	75	69.6	8.65	EGBE / s-BuOH	Z ₆ - Z _{6.5}	—

GARDNER COLOR (MAXIMUM)	ACID VALUE (SOLID MAX)	FEATURES AND BENEFITS
12	35	Phenolic and rosin-modified alkyd with lacquer-like dry for general metal primers
8	—	Clear wood varnishes and aluminum pigmented finishes; good leafing properties; good chemical and abrasion resistance
10	20	Drum, toy and chassis enamels; fast drying; good water resistance
10	20 - 30	Drum, toy and chassis enamels; 1000% MS tolerance; fast drying; good water resistance
14	10 - 30	Lift resistant primers; drum, toy and chassis enamels; fast drying; good water resistance; meets Federal specification TT-P-664D
15	20	Modifier for long and medium oil alkyds to improve through dry, hardness, water resistance and recoatability
10	26 - 32	Lift resistant primers; drum, toy and chassis enamels; fast drying; good water resistance; meets Federal specification TT-E-515A and TT-P-664D
10	26 - 32	Lift resistant primers; drum, toy and chassis enamels; recommended resin for MIL-E-15090C, Type II, Rule 66 "Exempt" resin for TT-E-515A AND TT-P-664D
10	26 - 32	Toluene-free version of 663-6X3-50.
10	24 - 32	Aromatic 100 version of 663-6X3-50; mirror backing coatings.
10	14 - 23	Lift resistant primers; drum, toy and chassis enamels; fast drying; good water resistance; meets Federal specification TT-P-664D
15	30	Spar varnish, meet DOD-V-15218 Type II
12	33	Exterior spray varnishes, marine enamels
10	22	Rapid dry characteristics; excellent salt spray and outstanding topcoat lifting resistance; recommended for use in Federal specification TTP-664D high solids corrosion inhibiting primers
10	22	Excellent exterior durability, corrosion resistance and flexibility for industrial air-dry coatings; fast recoatability; resists lifting when topcoated
10	22	HAPS-free version of 57-5754
11	22	Fast-drying and low VOC; can be formulated to meet SSPC Paint 25 Spec and federal specification TT-P-664D; excellent non-lifting properties
9	—	Low viscosity for use in wood stains and varnishes; good adhesion and exterior durability
10	18	Phenolic modified drying oil; very effective fortifier in upgrading alkyds for adhesion, chemical resistance and exterior durability
10	14 - 23	Lift resistant primers; drum, toy and chassis enamels; fast drying; good water resistance; exempt solvent blend; meets Federal specification TT-P-664D
8	41	Good corrosion resistance for air and force-dry primers; minimal recoat window; resists lifting

Alkyds – Silicone-Modified

PRODUCT	OIL TYPE	% SOLIDS (WEIGHT)	% SOLIDS (VOLUME)	DENSITY (LBS/GAL)	SOLVENTS	VISCOSITY (G - H)	REDUCED VISCOSITY (G - H)
CONVENTIONAL							
REZIMAC® 62-6203	TOFA	50	42.0	8.25	X	M - O	A ₁ - B @ 40% X
REZIMAC® 62-6247	Soya	50	43.2	8.20	X	U - X	—
REZIMAC® 62-6260	Soya	60	50.7	7.90	MS	W - Y	C - F @ 45% MS
REZIMAC® 62-6283	Soya	50	41.4	7.60	MS	I - L	—
REZIMAC® 213-1136	Linseed	50	42.5	8.30	X	P - U	—
REZIMAC® 213-1285	Linseed / Soya	50	41.4	7.58	MS / VM&P	N - Q	—
HIGH SOLIDS							
REZIMAC® 57-5747	Soya	80	74.8	8.70	MAK / n-BuAc	Z - Z ₂	H - J @ 65% n-BuAc
REZIMAC® 57-5861	Soya	70	64.8	8.53	A100	T - W	G - J @ 62.5% A100
BECKOSOL® 4298S	Soya	80	76.0	8.77	A100 / X	Z ₂ - Z ₄	—
WATER-REDUCIBLE							
REZIMAC® 74-7435	Fatty Acid Blend	75	70.0	9.00	EGBE	Z ₅ - Z _{6+1/2}	—

GARDNER COLOR (MAXIMUM)	ACID VALUE (SOLID MAX)	FEATURES AND BENEFITS
8	20	Chain-stopped alkyd with good durability for air-dry and bake applications
11	6	Silicone alkyd copolymer with epoxy modification; good adhesion, chemical resistance and heat resistance for air-dry and bake applications
8	12	Good exterior durability and flexibility in air-dry applications; can be formulated to meet the requirements of TT-E-1593B and TT-E-490E
7	12	Good dry time with good gloss development and overall appearance; excellent color and gloss retention; good flexibility
6	15	Good heat resistance and gloss in air-dry applications
9	12	Excellent exterior color and gloss retention; high heat-resistant aluminum coatings, including those requiring TT-P-28G compliance
8	12	Excellent exterior durability with excellent gloss retention and flexibility, meets MIL-E-24635B
10	12	Excellent exterior durability with excellent gloss retention and flexibility; meets 380 g/L VOC restrictions; good heat resistance
7	10	Excellent exterior durability with excellent gloss retention and flexibility; MIL-E-24635A (SH) Type I or Type II
6	48	High gloss, good gloss and color retention with outstanding early water resistance; fast dry at high application solids; ideal for air-dry coatings requiring long-term exterior exposure; compatible with select latexes

Alkyds – Flat

PRODUCT	OIL TYPE	% SOLIDS (WEIGHT)	% SOLIDS (VOLUME)	DENSITY (LBS/GAL)	SOLVENTS	VISCOSITY (G - H)	REDUCED VISCOSITY (G - H)
CONVENTIONAL							
DURAMAC® 56-5633	TOFA	31	24.7	7.10	MS	W - Z	E - H @ 25% MS
BECKOSOL® 3101-ZP-40	Soya	40	—	7.41	MO / X	Z ₁ - Z ₃	F - H @ 40% MO

Alkyds – Specialty

PRODUCT	OIL TYPE	% SOLIDS (WEIGHT)	% SOLIDS (VOLUME)	DENSITY (LBS/GAL)	SOLVENTS	VISCOSITY (G - H)	REDUCED VISCOSITY (G - H)
CHLORINE-MODIFIED — HIGH SOLIDS							
BECKOSOL® 91-169	Safflower	76	—	9.55	A100	X - Z ₁	—

PRODUCT	OIL TYPE	% SOLIDS (WEIGHT)	% SOLIDS (VOLUME)	DENSITY (LBS/GAL)	SOLVENTS	VISCOSITY (G - H)
LATEX MODIFIERS — HIGH SOLIDS LONG OIL						
DURAMAC® 55-5501	Soya	99.25	99.0	8.40	X	Z ₁ - Z ₃
DURAMAC® 55-5543	TOFA	100	100.0	8.17	—	Z - Z ₃
DURAMAC® 201-2516	Soya	100	100.0	8.50	—	Z - Z ₂

PRODUCT	OIL TYPE	% SOLIDS (WEIGHT)	% SOLIDS (VOLUME)	DENSITY (LBS/GAL)	SOLVENTS	VISCOSITY (G - H)
OXAZOLINE-MODIFIED — CONVENTIONAL VINYL ESTER						
CHEMACOIL® 240-2101	Linseed	100	100.0	7.80	—	G - I

GARDNER COLOR (MAXIMUM)	ACID VALUE (SOLID MAX)	FEATURES AND BENEFITS
7	10	Good dry, enamel holdout, and soil removal
4	10	Interior flat finishes

GARDNER COLOR (MAXIMUM)	ACID VALUE (SOLID MAX)	FEATURES AND BENEFITS
7	6	Air drying fire-resistant coatings; designed for use in enamels meeting specification MIL-DTL-24607B

GARDNER COLOR (MAXIMUM)	ACID VALUE (SOLID MAX)	FEATURES AND BENEFITS
10	5	Very long oil alkyd modifier for exterior latex paints and stains to improve adhesion to chalky substrates; also used in oil-based exterior paints and stains
8	8	Modifier for adhesion improvement in latex paints; good color retention for exterior solvent-based paints and stains
8	12	Adhesion promoter for exterior latex paints; can be used as blending resin to increase solids and lower the VOC of conventional alkyd coatings; high gloss potential; good color retention

GARDNER COLOR (MAXIMUM)	ACID VALUE (SOLID MAX)	FEATURES AND BENEFITS
10	10	Chain-stopped alkyd with good durability for air-dry and bake applications

Alkyds – Water-Reducible

PRODUCT	OIL TYPE	% SOLIDS (WEIGHT)	% SOLIDS (VOLUME)	DENSITY (LBS/GAL)	SOLVENTS	VISCOSITY (G - H)	REDUCED VISCOSITY (G - H)
CHAIN-STOPPED							
DURAMAC® 74-7474	Fatty Acid Blend	75	69.1	8.80	s-BuOH / EGBE	Z ₆ - Z _{6+1/2}	U _{1/2} - W _{1/2} @ 60% s-BuOH
DURAMAC® 74-7495	Fatty Acid Blend	70	63.8	8.65	s-BuOH / EGBE	Z _{4+1/2} - Z ₆	—
DURAMAC® 207-1238	TOFA	70	65.0	8.80	EGBE	Z ₅ - Z _{7+1/2}	—
DURAMAC® 207-1551	Soya	75	69.1	8.80	EGBE / s-BuOH	Z ₅ - Z _{7+1/4}	M - Q @ 60% s-BuOH
DURAMAC® 207-3497	Fatty Acid Blend	70	64.3	8.93	EGBE	Z ₄ - Z ₆	X - Z @ 60% EGBE
DURAMAC® 207-3738	TOFA	70	64.0	8.70	EGBE / s-BuOH	Z ₅ - Z ₇	—
KELSOL® 3941-B2G2-70	TOFA	70	63.0	8.70	s-BuOH / PnP	Z _{6+1/4} - Z _{6+1/2}	—
KELSOL® 3941-G4-70	TOFA	70	64.6	8.85	EGBE	Z _{6+1/4} - Z _{6+1/2}	—
KELSOL® 3960-B2G-75	Oxidizing	75	69.4	8.65	s-BuOH / EGBE	Z _{5+1/2} - Z _{6+1/4}	—
KELSOL® 3960-B2G2-75	Oxidizing	75	69.4	8.65	s-BuOH / PnP	Z _{5+1/2} - Z _{6+1/4}	—
KELSOL® 3961-B2G-75	Oxidizing	75	69.0	8.80	s-BuOH / EGBE	Z _{5+3/4} - Z _{6+1/4}	—
KELSOL® 3964-B2G-70	Oxidizing	70	63.0	8.85	s-BuOH / EGBE	Z _{5+3/4} - Z _{6+1/4}	—
KELSOL® 3969-B2G-70	Oxidizing	70	63.0	8.71	s-BuOH / EGBE	Z ₆ - Z _{6+1/2}	—
KELSOL® 3969-G2-70	Oxidizing	70	64.0	8.83	PnP	Z _{6+1/2} - Z _{6+3/4}	—
KELSOL® 3969-G4-70	Oxidizing	70	63.0	8.85	EGBE	Z ₆ - Z _{6+1/2}	—

GARDNER COLOR (MAXIMUM)	ACID VALUE (SOLID MAX)	OH VALUE (ON SOLIDS)	FEATURES AND BENEFITS
7	43	82	Workhorse product with excellent gloss, salt spray and humidity resistance balanced with good dry rate for air and force-dry industrial DTM applications; compatible with select latexes; can be formulated for good dip tank stability
8	38	72	Superior gloss and gloss retention with corrosion and water resistance; very good dry rate for air and force- dry industrial applications; compatible with select latexes; can be formulated for good dip tank stability
8	38	60	Straight EGBE cut of DURAMAC® 207-3738 with higher flash point
9	37	82	Excellent gloss, corrosion resistance and humidity and water resistance with fast dry rates
8	38	72	Straight EGBE cut of DURAMAC® 74-7495 with improved open time and higher flash point
8	38	60	Good cost/performance balance for air-dry, force-dry or bake systems; excellent corrosion resistance, good initial gloss and package stability
8	36 - 40	86	Economical with good corrosion resistance
8	36 - 40	86	Economical with good corrosion resistance; faster dry time than KELSOL® 3940-G4-70
8	37 - 41	—	Excellent exterior durability
8	37 - 41	—	Excellent exterior durability
8	35 - 39	—	Excellent corrosion resistance with a very fast dry rate
6	38 - 42	—	Excellent corrosion resistance and hot hardness
8	36 - 40	85	Good balance of performance properties and value
8	36 - 40	85	Good performance and value
8	36 - 40	85	Good combination of corrosion, humidity and water resistance

Alkyds – Water-Reducible

PRODUCT	OIL TYPE	% SOLIDS (WEIGHT)	% SOLIDS (VOLUME)	DENSITY (LBS/GAL)	SOLVENTS	VISCOSITY (G · H)	REDUCED VISCOSITY (G · H)
SHORT OIL							
DURAMAC® 74-7451	TOFA	70	64.9	8.80	EGBE	Z ₄ - Z ₆	W - Y @ 60% EGBE
DURAMAC® 207-3119	TOFA	75	70.4	8.90	EGBE	Z ₅ - Z ₇	—
KELSOL® 3905-B2G-75	Oxidizing	75	69.7	8.55	s-BuOH / EGBE	Z _{4+1/2} - Z _{5+1/2}	—
KELSOL® 3906-B2G-75	Oxidizing	75	69.4	8.65	s-BuOH / EGBE	Z _{5+3/4} - Z _{6+1/4}	—
KELSOL® 3907-B2G2-75	Oxidizing	75	69.5	8.55	s-BuOH / PnP	Z ₆ - Z _{6+1/4}	—
KELSOL® 3907-G4-75	Oxidizing	75	69.5	8.70	EGBE	Z ₆ - Z _{6+1/2}	—
KELSOL® 3912-G4-75	Oxidizing	75	70.6	8.83	EGBE	Z _{5+3/4} - Z _{6+1/4}	—
MEDIUM OIL							
KELSOL® 3902-BG4-75	Oxidizing	75	69.2	8.55	n-BuOH / EGBE	Z _{5+1/2} - Z ₆	—
KELSOL® 3902-G4-70	Oxidizing	70	65.0	8.60	EGBE	Z _{4+1/4} - Z _{5+1/4}	—
KELSOL® 3910-B2G-75	Soya	75	70.0	8.60	s-BuOH / EGBE	Z _{5+1/2} - Z _{6+1/4}	—
KELSOL® 3910-G4-70	Soya	70	65.5	8.70	EGBE	Z _{3+3/4} - Z ₅	—
LONG OIL							
DURAMAC® 216-3610	Linseed / Tung	98	97.6	8.57	X*	Z ₄ - Z ₅	—
KELSOL® 15-173	Linseed	85	83.8	8.10	EGBE	G _{+1/4} - K _{+1/4}	—
KELSOL® 91-403	Linseed	70	63.0	7.60	KWIK-DRY® MS	B - D	—
KELSOL® 580-W-42	Sunflower	42	38.5	8.90	W	700-2500 cps	—
KELSOL® DV-1469-DPM-85	Linseed	85	83.8	8.18	DPM	I - M	—
KELSOL® 3922-HV-G-80	Oxidizing	80	78.2	8.65	PnP / DGBE	Z _{6+1/2} - Z _{6+3/4}	—
KELSOL® DV-5862	Oxidizing	70	68.5	8.50	EGBE	V _{+3/4} - X _{+3/4}	—

GARDNER COLOR (MAXIMUM)	ACID VALUE (SOLID MAX)	OH VALUE (ON SOLIDS)	FEATURES AND BENEFITS
8	50	—	Bake enamel formulations comparable to solvent-based formulations for general industrial applications; provides good hardness, flexibility and durability; dip tank stable
8	41	105	Low VOC; good gloss; economical with good balance of cost versus performance
8	38 - 42	46	Excellent blending resin for emulsions
8	39 - 43	46	Excellent dip tank stability
8	39 - 43	39	Good exterior durability and salt spray; fast dry
8	39 - 43	39	Good exterior durability and salt spray; fast dry; higher flash point
8	28 - 32	60	Capable of higher solids at dip tank viscosities
8	38 - 42	28	General purpose resin; good flexibility
8	38 - 42	28	General purpose resin; good flexibility
7	39 - 43	65	Economical with very good flexibility; high OH value for melamine crosslinking
7	39 - 43	65	Economical with very good flexibility; high OH value for melamine crosslinking
14	85	—	Solvent-based stain performance in a Water-Reducible polymer; excellent penetration and performance for interior and exterior wood and other porous substrates; excellent package stability
7	12	—	Chemically modified linseed oil. Opaque and semi-transparent stains, artist color, plywood marking paints
7	12	—	Chemically modified linseed oil. Opaque and semi-transparent stains, artist color, plywood marking paints
Milky	12 - 17	—	Cures rapidly whether air dried or baked, with or without melamine or urea crosslinkers
7	12	—	Exterior opaque and semi-transparent stains, artist colors and plywood marking
8	52 - 58	—	Architectural and industrial primers; semi-gloss and gloss systems; good shelf stability
8	52 - 58	—	Water-dispersed wood stains, exterior trim and trellis enamels, architectural gloss and semi-gloss brushing enamels.

Alkyds – Emulsions

PRODUCT	OIL TYPE	% SOLIDS (WEIGHT)	VOC (G/L)	DENSITY (LBS/GAL)	SOLVENTS	VISCOSITY (CPS @ 25° C)
LONG OIL						
BECKOSOL AQ® 101	Soya	55	14	8.80	W	500 max
BECKOSOL AQ® 112	Linseed	60	24	8.28	W	50 - 2000
MEDIUM OIL						
BECKOSOL AQ® 201	Soya	55	15	8.80	W	100 - 600
BECKOSOL AQ® 205	Soya	55	13	8.80	W	800 max
BECKOSOL AQ® 206	Oxidizing	55	15	8.90	W	50 - 500
CHAIN-STOPPED						
BECKOSOL AQ® 210	Soya	55	11	8.90	W	600 max
BECKOSOL AQ® 400	Soya	51	Negligible	8.95	W	1000 max
SHORT OIL						
BECKOSOL AQ® 405	Oxidizing	57	Negligible	9.00	W	500 max
MODIFIED						
BECKOSOL AQ® 510	Soya	61	Negligible	8.80	W	500 - 1500
BECKOSOL AQ® 521	Oxidizing	51.5	67	8.60	W	450
BECKOSOL AQ® 522	Oxidizing	50	8	8.60	W	600 max

% BIOBASED CONTENT	FEATURES AND BENEFITS
61	Good penetration for exterior and interior wood stains; APEO free
75**	Highest oil length for exterior wood stains; APEO free
54**	Economical architectural gloss, semi-gloss and eggshell wood trim enamels; transparent and semi-transparent stains; APEO free
52	Fast cure; stain blocking primers with good enamel holdout; high to satin gloss decorative finishes; APEO free
41	Fast cure; very high gloss for trim enamels; suitable for lower gloss systems; APEO free
34	Good corrosion resistance for industrial metal primers; APEO free
40	Shear stable for high pigment loading; non-highway pavement markings with excellent adhesion to a variety of road substrates including concrete, asphalt and aggregate; APEO free
36**	Good corrosion resistance and gloss for direct to metal coatings; APEO free
50	Acrylic modified; highest solids; architectural paints and primers; asphalt sealers; APEO free
54	Epoxy modified; porous concrete wet look sealers; APEO free
59	Premium porous concrete and stone wet look sealers; APEO free

Oils

<i>PRODUCT</i>	<i>% SOLIDS (WEIGHT)</i>	<i>% SOLIDS (VOLUME)</i>	<i>DENSITY (LBS/GAL)</i>	<i>SOLVENTS</i>	<i>VISCOSITY (G - H)</i>	<i>GARDNER COLOR (MAXIMUM)</i>
LONG OIL						
ADMEROL® 75-M-70	70	—	7.61	MS	S - V	11
ADMEROL® 351-M-70	70	—	7.80	MS	Z - Z ₂	13
ESSKOL® Y - Z	100	—	8.11	—	Y - Z	8



ACID VALUE (SOLID MAX)	FEATURES AND BENEFITS
8	Flexible dicyclopentadiene linseed copolymer which meets the requirements for many state aluminum paint specs and for Federal Specification TT-V-81f Aluminum Vehicle and TT-V-121g Spar varnish.
2	Dicyclopentadiene soya copolymer for metallic finishes, floor paint, varnishes and sealers
17	Linseed OIL-MODIFIED with maleic anhydride to improve dry time.

Polyesters – Liquid Polyesters

PRODUCT	% SOLIDS (WEIGHT)	% SOLIDS (VOLUME)	DENSITY (LBS/GAL)	SOLVENTS	VISCOSITY (G - H)	REDUCED VISCOSITY (G - H)	GARDNER COLOR (MAXIMUM)
CONVENTIONAL							
POLYMAC® 66-6613	60	51.5	8.75	X	V - X	D - G @ 45% X	8
POLYMAC® 66-6686	70	61.1	8.75	MAK	Z ₁ - Z ₄	—	5
POLYMAC® 220-1001	65	58.7	9.53	PMA	Z ₃ - Z ₄	—	2
POLYMAC® 220-1935	65	58.6	8.86	X / A150	Z ₁ - Z ₂	D - F @ 50% X	3
POLYMAC® 220-1959	65	58.6	8.86	A150	Z - Z ₂	—	3
AROPLAZ® 1720-Z-60	60	53.5	8.95	PMA / A150 / n-BuOH	H - U _{+3/4}	—	3
AROPLAZ® 5725-Z-65	65	58.0	8.80	A150 / PMA	Z _{+1/2} - Z _{1+1/2}	—	3
AROPLAZ® 6126-Z-65	65	57.2	9.10	A150	Z ₄ - Z ₅	—	3
AROPLAZ® 6129-Z-65	65	57.2	9.10	A150 / EGBE	Z - Z ₂	—	3
HIGH SOLIDS							
POLYMAC® 57-5763	100	100.0	9.70	—	Z ₅ - Z ₆	—	2
POLYMAC® 57-5776	85	82.7	9.30	PMA	Z ₄ - Z ₆	—	3
POLYMAC® 57-5782	95	93.5	8.65	MIBK	Z ₃ - Z ₅	—	2
POLYMAC® 57-5789	85	82.3	9.30	EEP	Z ₃ - Z ₅	A - C @ 60% X	3
POLYMAC® 220-2010	75	69.3	9.04	n-BuAc	Z ₁ - Z ₃	—	2
POLYMAC® 220-2015	75	67.3	8.90	MAK	Z _{1+1/2} - Z _{3+1/2}	—	2
POLYMAC® 220-2880	93	89.3	8.75	n-BuAc	Z - Z ₂	—	2
POLYMAC® 220-2882	97	96.4	8.80	n-BuAc	Z ₅ - Z ₇	—	5
AROPLAZ® 4294	100	100.0	9.64	—	Z _{6+3/4} - Z ₈	—	2
AROPLAZ® 6420	90	86.0	9.30	MAK	Z _{2+1/2} - Z ₅	—	2
AROPLAZ® 6820-K4-90	90	—	8.90	MAK	Z ₁ - Z ₃	—	4

ACID VALUE (SOLID MAX)	OH VALUE (ON SOLIDS)	EQUIVALENT WEIGHT	FEATURES AND BENEFITS
10	85	660	Excellent balance of flexibility and hardness; good chemical resistance with overbake resistance
6	128	440	Excellent hardness and flexibility with glossy appearance and exterior durability
4	173	324	Good gloss and color retention; good chemical and abrasion resistance; compatible with a wide variety of resins
10	29	1,934	Designed for coil coatings; good chemical resistance and hardness; excellent overbake resistance and flexibility
7.5	35	1,603	Designed for coil coatings; good flexibility, gloss, flow and leveling, and chemical resistance; good durability with excellent overbake resistance
5	50	1,122	Silicone-Modified; exterior coil coatings requiring the ultimate in durability
10	30	1,870	Linear saturated coil coating polyester; high hardness with good flexibility; good weatherability
10	50	1,122	Linear saturated coil coating polyester; excellent flexibility with good hardness development and overbake color stability; good gloss retention
10	40	1,403	Linear saturated coil coating polyester; excellent flexibility with good hardness development and overbake color stability; good gloss retention
5	250	224	Lowest VOC possible (180 g/L); excellent hardness; typical analysis will show 95% NVM due to glycol loss
10	178	315	Workhorse polyester with excellent chemical resistance, durability, hardness and good flexibility for industrial bake and 2K applications; can be formulated into FDA 175.300 approvable coatings
6	245	230	Good combination of hardness, flexibility and chemical resistance for industrial bake applications
10	153	370	Excellent chemical resistance, weathering and flexibility; good hardness for industrial bake and 2K applications; can be formulated to 340 g/L VOC
9	280	200	Aliphatic polyester with superior weatherability and excellent chemical resistance, including Skydrol; blending resin for acrylics and polyesters; can be formulated to 340 g/L VOC
5	280	200	Superior weatherability, durability and good balance of film properties, including Skydrol resistance; excellent blending resin for acrylics
10	206	275	Good hardness and chemical resistance for industrial bake applications
10	206	275	Good hardness and chemical resistance for industrial bake applications
4	288	195	Aliphatic polyester polyol with excellent gloss and color retention; excellent chemical resistance; ideal for two component flooring topcoats
3	312	180	Aliphatic polyester polyol with excellent chemical resistance and exterior durability; branched
5	142	395	Hydroxyl terminated polyester designed to be crosslinked in industrial baking enamels

Polyesters – Liquid Polyesters

PRODUCT	% SOLIDS (WEIGHT)	DENSITY (LBS/GAL)	PH	PARTICLE SIZE (NM)	VISCOSITY (CPS @ 25° C)	GARDNER COLOR (MAXIMUM)
DISPERSIONS						
HYDREAU® 290-4156	30	8.75	7.5	—	1,000 - 3,000	—
HYDREAU® 290-4254	45	9.05	7.5	30	—	2

PRODUCT	% SOLIDS (WEIGHT)	DENSITY (LBS/GAL)	PH	SOLVENTS	VISCOSITY (G - H)	GARDNER COLOR (MAXIMUM)
WATER-REDUCIBLE						
POLYMAC® 72-7203	75	67.9	8.90	s-BuOH / EGBE	Z ₃ - Z ₅	3
POLYMAC® 220-3204	75	69.3	9.20	EGBE	Z ₄ - Z ₆	3
AROPLAZ® 5293-B-75	75	69.0	8.97	n-BuOH	Y _{+1/2} - Z _{1+3/4}	3
AROPLAZ® 7070-B2G-85	85	80.0	9.30	s-BuOH / EGBE	Z ₇₊₃₋₄ - Z _{8+3/4}	3

ACID VALUE (SOLID MAX)	OH VALUE (ON SOLIDS)	FEATURES AND BENEFITS
53 - 58	164	Surfactant-free polyester dispersion for 2K coating systems with low isocyanate demand; can achieve near zero VOC; excellent gloss development and good film hardness
45	72	Surfactant-free polyester dispersion for baking systems; excellent adhesion to metal, flexibility and chemical resistance

ACID VALUE (SOLID MAX)	OH VALUE (ON SOLIDS)	EQUIVALENT WEIGHT	FEATURES AND BENEFITS
60	64	876	Excellent color retention, hardness and flexibility balanced with economics; workhorse for industrial baking enamels
60	64	876	Designed for use in industrial enamels; HAPS-free; excellent exterior durability
57 - 63	180	312	Excellent cure response with 20% to 30% amino crosslinker; excellent flexibility, impact resistance, stain and chemical resistance
56 - 68	75	752	High gloss, color and gloss retention, good flexibility, chemical resistance

Epoxies – Resins

PRODUCT	TYPE	% SOLIDS (WEIGHT)	DENSITY (LBS/GAL)	SOLVENTS	VISCOSITY (CPS @ 25° C)	GARDNER COLOR (MAXIMUM)
REACTIVE DILUENTS						
EPOTUF® 37-051	Aliphatic Polyfunctional	100	8.58	—	200 - 320	1
EPOTUF® 37-058	Aliphatic Monofunctional	100	7.47	—	20 max	1
SOLID RESIN						
EPOTUF® 37-002	Solid Bis-A Resin	100	9.90	—	250 - 340 @ 40% DEG	3
LIQUID RESIN						
EPOTUF® 37-138	Liquid Bis-F Resin	100	9.93	—	3000 - 4200	2
EPOTUF® 37-140	Liquid Bis-A Resin	100	9.70	—	10,500 - 13,500	1
EPOTUF® 91-836	Epoxy Novolac	75	9.13	MAK	330 - 1,000	3
WATER-BORNE LIQUID RESIN						
EPOTUF® 37-143	Liquid Bis-A Resin Dispersion	78	9.30	W	2,000 - 4,000	Milky
EPOTUF® 37-149	Type 7 Epoxy Dispersion	50	9.15	W / EGBD	1,000 - 3,000	Milky
DILUTED RESINS						
EPOTUF® 37-100	Aliphatic Polyfunctional	100	9.40	—	2,000 - 5,000	3
EPOTUF® 37-127	Aliphatic Monofunctional	100	9.20	—	500 - 800	1
EPOTUF® 37-128	Aromatic Monofunctional	100	9.30	—	500 - 1,000	2
EPOTUF® 37-130	Butyl Glycidyl Ether	100	9.45	—	500 - 700	2
SOLVENT-CUT RESINS						
EPOTUF® 38-501	Type 1	75	9.00	MIBK / X	4,630 - 14,800	3
EPOTUF® 38-502	Type 1	75	9.35	EEP	6,400 - 18,000	3
EPOTUF® 38-507	Type 1	75	9.10	T	4,630 - 14,800	3

EEW OR ACID (SOLID)	FEATURES AND BENEFITS
EEW = 665	High molecular weight aliphatic polyfunctional epoxy resin used as a modifier; improves adhesion; imparts flexibility and toughness; extends pot life; low viscosity
EEW = 295	Aliphatic monofunctional epoxy diluent based on Alkyl Glycidyl Ether C12-C14; low viscosity; low volatility and toxicity; allows high filler levels
EEW = 615	Solid glycidyl ether of Bisphenol A epoxy resin. Good chemical and corrosion resistance
EEW = 170	Undiluted liquid epoxy resin based on diglycidyl ether of Bisphenol-F (Bis-F); used alone or as a modifier for EPOTUF® 37-140; improves organic acid and solvent resistance; slows gel and thin film set times; greatly reduced crystallization potential
EEW = 185	Standard undiluted liquid epoxy resin based on Bisphenol-A (Bis-A); industry workhorse with good reactivity and resistance properties; high heat distortion temperature
EEW = 215	Modified epoxy Novolac; excellent corrosion and chemical resistance; highest heat distortion temperature
EEW = 200	Dispersion of liquid epoxy resin; can formulate compliant two component water-borne epoxy coatings when cured with EPOTUF® 37-680 and 37-685; freeze-thaw stable
HEW = 220	High performance protective coatings with melamine for bake or isocyanate for ambient cure. Good adhesion to steel and corrosion resistance
EEW = 220	100% reactive Bis-A epoxy based resin diluted 20% by weight with EPOTUF® 37-051; improves flexibility; extends pot life; good adhesion; medium viscosity
EEW = 200	100% reactive Bis-A epoxy based resin diluted 20% by weight with EPOTUF® 37-058; excellent toughness and flexibility; low color and viscosity
EEW = 200	100% reactive Bis-A epoxy based resin diluted 35% by weight with Phenol Glycidyl Ether C8-C10; excellent penetration; high filler loading; low viscosity
EEW = 185	100% reactive Bis-A epoxy based resin diluted 14% by weight with Butyl Glycidyl Ether; excellent flexibility; high filler loading; good penetration; low viscosity
EEW = 515	Solvent cut solid Bis-A epoxy resin; high molecular weight; fast dry; excellent toughness and impact resistance; good corrosion and chemical resistance
EEW = 465	Solvent cut solid Bis-A epoxy resin; high molecular weight; fast dry; excellent toughness and impact resistance; good corrosion and chemical resistance
EEW = 480	Solvent cut solid Bis-A epoxy resin; fast dry; good flexibility and impact resistance; good corrosion and chemical resistance

Epoxies – Resins

PRODUCT	TYPE	% SOLIDS (WEIGHT)	DENSITY (LBS/GAL)	SOLVENTS	VISCOSITY (CPS @ 25° C)	GARDNER COLOR (MAXIMUM)
MODIFIED RESINS						
EPOTUF® 37-151	Flexible	100	8.90	—	30,000 - 70,000	5
EPOTUF® 95-473	Urethane	60	8.60	MIBK / X / T / Cyclohexanone	550 - 1,290	3
EPOTUF® 98-411	Flexible	75	8.60	MEK	1,000 - 1,800	6
EPOTUF® G272-100	Elastomeric	100	8.97	—	500,000 - 900,000	14
EPOTUF® G293-100	CTBN	100	8.80	—	140,000 - 250,000	10
EPOTUF® G519-K2-70	CTBN	70	8.60	MIBK	4,000 - 10,000	9
SOLVENT-CUT EPOXY ESTERS						
EPOTUF® 38-406	Rosin Modified	60	7.70	MS	2,700 - 4,630	8
EPOTUF® 91-531	Epoxy Ester	55	8.10	X	1,500 - 2,700	6
EPOTUF® 91-853	Epoxy Ester	50	8.95	PCBTF / A100	1,000 - 2,600	10
REZIMAC® 12-1204	Epoxy Ester	60	7.75	MS	2,500 - 4,500	8
REZIMAC® 12-1222	Epoxy Ester	50	8.00	X	1,000 - 1,700	4
REZIMAC® 57-5839	Epoxy Ester	70	8.40	n-BuAc	1,300 - 2,300	8
WATER-REDUCIBLE EPOXY ESTERS						
EPOTUF® 38-690	Acrylic Modified	70	8.40	EGBE	14,800 - 38,800	7
EPOTUF® 38-692	Epoxy Ester	70	8.70	EGBE	9,000 - 15,000	8
EPOTUF® 38-699	Epoxy Ester	70	8.65	EGBE	9,000 - 15,500	8
EPOTUF® 91-263	Acrylic Modified	70	8.40	PnP	35,000 - 65,000	7
REZIMAC® 73-7331	Epoxy Ester	70	8.40	EGBE	12,500 - 18,000	8
WATER-DISPERSED EPOXY ESTERS						
EPOTUF® 38-694	Aqueous Dispersion	40	8.41	W / PnP / TEA	1,000 - 4,000	Milky
EPOTUF® 38-698	Acrylic Modified Aqueous Dispersion	42	8.50	W / PnP / TEA	500 max	Milky

EEW OR ACID (SOLID)	FEATURES AND BENEFITS
EEW = 500	Modifier for epoxies, 2K urethanes and baking polyester systems to improve flexibility, adhesion and weathering; very fast viscosity reduction curve; elongation up to 25%
EEW = 325	Urethane modified to provide improved adhesion, chemical and solvent resistance including aerospace hydraulic fluids
EEW = 485	Elastomer modified resin that produces flexible, impact resistant films when cured with conventional curing agents
EEW = 340	Elastomer modified resin designed as an additive or modifier to toughen epoxies, epoxy novolacs and PVC plastisols and to reduce brittleness
EEW = 340	Elastomer modified resin that produces flexible, impact resistant films when cured with conventional curing agents
EEW = 680	Elastomer modified resin that produces flexible, impact resistant films when cured with conventional curing agents
AV = 9 max	Good adhesion to steel; excellent toughness and abrasion resistance; good alkali resistance
AV = 6 max	Good hardness and abrasion resistance; good resistance to alkali, detergents, water and yellowing
AV - 8 max	Metal primers, rail car; reduced VOC due to exempt solvent content
AV = 10 max	Good hardness and adhesion; good abrasion and alkali resistance
AV = 3 max	Good chemical and corrosion resistance; good hardness and adhesion
AV = 3 max	HAPS-free; good corrosion and humidity resistance; very good gasoline resistance
AV = 54 - 60	Compatible with acrylic emulsions to improve corrosion resistance; fast air or force dry applications; excellent gloss, hardness and adhesion
AV = 45 - 49	Fast air or force dry primer applications; good corrosion resistance in thin films; good compatibility with inhibitive pigments
AV = 50 - 55	Fast air or force dry primer applications; good corrosion resistance in thin films; good compatibility with inhibitive pigments
AV = 52 - 62	HAPS-free; low VOC capability; excellent adhesion to a variety of substrates; fast air or force dry primers; good corrosion resistance
AV = 69 max	Fast dry; good corrosion and humidity resistance; good topcoat lifting resistance; adhesion to plastics
—	Pre-neutralized in HAPS-free solvents; low VOC capability; excellent hydrolytic stability; excellent corrosion resistance; excellent adhesion to wood, concrete and metal
—	Pre-neutralized in HAPS-free solvents; low VOC capability; bonds topcoat to concrete while increasing adhesion; good early water resistance

Epoxies – Curing Agents

PRODUCT	TYPE	% SOLIDS (WEIGHT)	DENSITY (LBS/GAL)	SOLVENTS	VISCOSITY (CPS @ 25° C)	GARDNER COLOR (MAXIMUM)
ALIPHATIC AMINES						
EPOTUF® 37-606	Adduct	100	8.15	—	200 - 400	5
EPOTUF® 37-611	Modified	100	8.05	—	5,500 - 8,500	3
EPOTUF® 37-614	Mannich Base	100	9.00	—	3,500 - 5,500	7
EPOTUF® 37-667	Modified	100	8.00	—	1,200 - 1,800	2
CYCLOALIPHATIC AMINES						
EPOTUF® 37-601	Adduct	100*	8.40	—	200 - 400	3
EPOTUF® 37-607	Adduct	100*	8.65	—	300 - 450	5
EPOTUF® 37-703	Modified	100*	8.60	—	40 - 100	1
WATER-BORNE POLYAMINE ADDUCTS						
EPOTUF® 37-680	Microgel Polyamine Adduct	42	8.90	W / EGPE	40 - 100	Milky
EPOTUF® 37-685	Microgel Polyamine Adduct	50	8.90	W / PGME	250 max	Milky
AMIDOAMINES						
EPOTUF® 37-620	Amide / Imidazoline	100	7.90	—	400 - 700	10
POLYAMIDES						
EPOTUF® 37-612	Amide / Imidazoline	100	7.90	—	10,500 - 19,000	10
EPOTUF® 37-618	Amide	70	7.70	X	884 - 2,290	12
EPOTUF® 37-621	Amide	60	7.49	IPA / T	1,000 - 2,800	11
EPOTUF® 37-625	Amide / Imidazoline	100	8.00	—	30,000 - 45,000	10
EPOTUF® 37-640	Imidazoline / Amide	100	8.30	—	9,000 - 15,000	10
EPOTUF® 37-650	Modified Amide / Imidazoline	100*	8.40	—	3,000 - 6,500	12

* Reflects approximate weight % in cured film per Method 24 / ASTM D 2369 ** C - Corrosive, NC - Non-Corrosive
 *** For FDA applications, contact Polynt product regulatory group for specific use limitation information.

<i>AHEW (SOLIDS)</i>	<i>AMINE VALUE (MG KOH/GM)</i>	<i>FEATURES AND BENEFITS</i>
85	365	Moderate pot life; good gloss and blush resistant films; low viscosity
189	315	Fast cure; good moisture and blush resistance; improves resiliency and flexibility of other amines
50	760	Good cure speed at low temperature and/or high humidity; good chemical resistance; compatible with epoxy novolacs
157	267	Fast cure; good moisture and blush resistance; improves resiliency and flexibility of other amines; 1:1 mix ratio by volume with EPOTUF® 37-140
85	350	Based on isophorone diamine intended for room temp curing; excellent chemical resistance; good mechanical strength characteristics; light color; low viscosity
85	385	Good acid resistance and adhesion to damp concrete; can be blended with aliphatic amines to improve chemical and/or low temperature performance
93	320	Good color stability; high gloss and carbamation resistance under adverse conditions of high humidity and low temperature; very low viscosity
563	80	Long pot life and fast dry time when cured with EPOTUF® 37-143; low odor; good yellowing resistance; excellent elevated temperature and freeze/thaw stability
160	334	Excellent corrosion resistance on metal substrates when cured with EPOTUF® 37-143; low odor; <100 g/L VOC capability; high hardness; wide recoat window; good in-can coating stability
94	425	Good general purpose amidoamine; wide range of mix ratios; capable of high pigment loading; bonds well to damp concrete; resilient and impact resistant
130	340	High reactivity; low crystallization potential; low exudation; moderate viscosity
150	240	Provides flexibility, long pot life and good overall properties with solid epoxy resin; fast dry; suitable for a wide variety of substrates
500	90	High molecular weight; long pot life; excellent adhesion to steel and concrete; excellent water resistance; good impact resistance
120	350	Good balance of hardness and flexibility; excellent corrosion resistance; good adhesion and impact resistance; wide mix ratio; medium viscosity
100	385	High imidazoline content; lower viscosity and longer pot life than EPOTUF® 37-625
130	230	No induction time; performance similar to high molecular weight traditional polyamide/solid epoxy systems; low viscosity

2K Non-Isocyanate

PRODUCT	TYPE	% SOLIDS (WEIGHT)	DENSITY (LBS/GAL)	SOLVENTS	VISCOSITY (STOKES)	VISCOSITY (G - H)
EPOXY RESINS						
AROFLINT® 608	Oxirane-Modified Ester	100	8.35	—	11	U _{+1/4} - X _{+1/2}

PRODUCT	TYPE	% SOLIDS (WEIGHT)	DENSITY (LBS/GAL)	SOLVENTS	VISCOSITY (STOKES)	VISCOSITY (G - H)
POLYESTER RESINS						
AROFLINT® 809	Acid Functional Polyester	71	10.85	MAK / PGME / IPA	2 - 6	H - T _{+3/4}
AROFLINT® 252-Z1-60	Acid Functional Polyester	60	9.47	MS / IBIB / A100	2.05	F _{+3/4} - J
AROFLINT® 404-XX-60	Acid Functional Polyester	60	10.05	n-BuAc / VM&P / n-BuOH / EB	5.5	R - U

GARDNER COLOR (MAXIMUM)	EEW (SOLID)	FEATURES AND BENEFITS
8	285	Aliphatic epoxy used to formulate 2K coatings with excellent weatherability; used for agricultural and transportation coatings

GARDNER COLOR (MAXIMUM)	AEW (SOLID)	FEATURES AND BENEFITS
4	432	HAPS compliant, low VOC capability, durability
5	524	Flexibility, durability
3	351	Adhesion, hardness, corrosion resistance

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

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

<i>PRODUCT</i>	<i>% SOLIDS (WEIGHT)</i>	<i>DENSITY (LBS/GAL)</i>	<i>COSOLVENT</i>	<i>VISCOSITY (CPS @ 25° C)</i>	<i>RESIN VOC (G/L)</i>	<i>MODULUS @ 100% (PSI)</i>
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
UV CURABLE POLYURETHANE DISPERSIONS						
<i>PRODUCT</i>	<i>% SOLIDS (WEIGHT)</i>	<i>DENSITY (LBS/GAL)</i>	<i>COSOLVENT</i>	<i>VISCOSITY (CPS @ 25° C)</i>	<i>RESIN VOC (G/L)</i>	<i>GLOSS (60° / 20°)</i>
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

Solution Acrylics

PRODUCT	% SOLIDS (WEIGHT)	% SOLIDS (VOLUME)	DENSITY (LBS/GAL)	SOLVENTS	VISCOSITY (G - H)	REDUCED VISCOSITY (G - H)	GARDNER COLOR / APHA (MAXIMUM)	ACID VALUE (SOLID MAX)
THERMOPLASTIC — CONVENTIONAL								
ACRYLAMAC® 16-0163	45	38.0	8.13	T	Z ₁ - Z ₄	—	1 / 150	3
ACRYLAMAC® 16-1066	50	44.0	8.10	T	W - Z	—	1 / 150	4
ACRYLAMAC® 231-1067	45	39.0	7.24	VM&P / X	W - Z ₁	—	2 / 300	6
ACRYLAMAC® 231-1195	50	32.0	7.20	Isopar G	W - Y	—	1 / 150	—
ACRYLAMAC® 231-1266	50	44.5	8.10	iso-BuAc	Z ₂ - Z ₅	—	1 / 150	4
ACRYLAMAC® 231-1366	50	44.3	8.25	n-BuAc	Z - Z ₃	—	1 / 150	6
THERMOSET — CONVENTIONAL								
ACRYLAMAC® 17-1100	60	54.3	8.65	PMA / T	Z ₁ - Z ₄	—	1 / 150	15
ACRYLAMAC® 232-1321	65	61.5	8.70	PMA / n-BuOH	Z ₃ - Z ₅	C - E @ 40% PMA	1 / 150	20
ACRYLAMAC® 232-1375	70	64.9	8.61	n-BuAc	Z ₃ - Z ₅	D - F @ 50% n-BuAc	1 / 150	16
ACRYLAMAC® 232-1700	60	53.2	8.45	X	Z - Z ₃	—	1 / 150	15
ACRYLAMAC® 232-1711	60	53.7	8.50	n-BuAc	Z ₁ - Z ₃	—	1 / 150	15

OH VALUE (ON SOLIDS)	EQUIVALENT WEIGHT	TG (°C)	FEATURES AND BENEFITS
—	—	—	Excellent adhesion and durability on many plastics, especially untreated polypropylene (PP) and thermoplastic olefin (TPO)
—	—	50	Fast dry times and excellent gloss; good color retention and good compatibility with other resins; excellent pigment dispersion vehicle
—	—	50	Fast dry times and excellent gloss; good color retention and good compatibility with other resins; excellent pigment dispersion vehicle
—	—	59	Designed for low odor, stain-blocking primer for 350 g/L VOC; excellent ink stain block and good sag resistance
—	—	50	Fast dry times and excellent gloss; good color retention and good compatibility with other resins; excellent pigment dispersion vehicle
—	—	50	Fast dry times and excellent gloss; good color retention and good compatibility with other resins; excellent pigment dispersion vehicle
87	645	56	Hydroxyl-functional polyol; outstanding weatherability, hardness, gloss and color retention for durable, long-lasting coatings
80	701	23	Designed for two-component, acrylic urethane coatings; good early water resistance, chemical resistance and weatherability
154	365	24	Hydroxyl-functional resin for coatings requiring weatherability and chemical resistance with excellent water and humidity resistance
87	645	56	Hydroxyl-functional polyol with excellent hardness, gloss and color retention; excellent appearance and durability
87	645	56	Excellent gloss and color retention for outstanding exterior durability; excellent appearance and protective properties

Solution Acrylics

PRODUCT	% SOLIDS (WEIGHT)	% SOLIDS (VOLUME)	DENSITY (LBS/GAL)	SOLVENTS	VISCOSITY (G - H)	REDUCED VISCOSITY (G - H)	GARDNER COLOR / APHA (MAXIMUM)	ACID VALUE (SOLID MAX)
THERMOSET — HIGH SOLIDS								
ACRYLAMAC® 232-1329	80	74.1	8.80	MAK	Z ₃ - Z ₅	—	1 / 100	15
ACRYLAMAC® 232-2314	80	76.2	8.72	n-BuAc	Z ₃ - Z ₅	C - E @ 60% n-BuAc	1 / 150	8
ACRYLAMAC® 232-2315	80	76.2	8.75	t-BuAc / n-BuAc*	Z ₃ - Z ₅	—	1 / 150	8
ACRYLAMAC® 232-2328	90	88.3	8.61	n-BuAc	Z ₃ - Z ₅	D - H @ 70% n-BuAc	1 / 100	8
ACRYLAMAC® 232-2350	80	76.3	8.72	n-BuAc	Z ₃ - Z ₅	—	1 / 150	6.5
ACRYLAMAC® 232-2780	70	62.5	8.60	MAK	Z - Z ₂	—	1 / 100	8
AROLON® 6473	72	67.0	8.64	n-BuAc	X _{+1/2} - Z _{4+1/4}	—	1 / 150	8
THERMOSET — WATER-REDUCIBLE								
ACRYLAMAC® 232-3312	71	66.4	8.72	EGBE	Z ₆ - Z ₉	F - K @ 40% EGBE	1 / 150	85
AROLON® 559-G4-70	70	66.0	8.75	EGBE	Z _{5+3/4} - Z _{6+1/4}	—	2 / 300	70
THERMOSET CARBOXYL FUNCTIONAL — CONVENTIONAL								
ACRYLAMAC® 232-1128	55	49.3	8.45	EGBE	X - Z ₂	—	1 / 150	65
ACRYLAMAC® 232-1176	41	36.4	8.00	A150 / EGBE	Z ₁ - Z ₃	—	1 / 60	40
ACRYLAMAC® 232-1185	75	68.6	8.48	n-BuOH / n-BuAc	Z ₅ - Z ₇	—	2 / 300	110
ACRYLAMAC® 232-1188	55.5	49.9	8.40	A150 / EGBE	9,000 - 14,500 cps	—	1 / 60	66
ACRYLAMAC® 232-1189	55.5	49.9	8.45	A150 / EGBE	4,300 - 6,300 cps	—	1 / 60	66

OH VALUE (ON SOLIDS)	EQUIVALENT WEIGHT	TG (°C)	FEATURES AND BENEFITS
140	400	24	Hydroxyl-functional resin in HAPS-free solvent for 2K acrylic urethane coatings. Faster cure response with excellent water and humidity resistance and weatherability
70	800	19	Hydroxyl-functional resin with low isocyanate demand designed for use in high performance industrial maintenance topcoat applications; can be formulated to 340 g/L VOC
70	800	19	t-Butyl acetate version of ACRYLAMAC® HS 232-2314
244	230	20	Very high solids polyol producing hard, durable and chemically resistant finishes; sole resin or modifier in applications requiring excellent abrasion resistance in 250 g/L VOC formulations
68	825	22	Hydroxyl-functional resin with low isocyanate demand, superior water resistance and gloss retention; excellent choice for 340 g/L VOC maintenance and marine topcoat applications
135	416	66	Designed for 420 g/L VOC two component acrylic polyurethane aerospace clear coats; passes 30 day Skydrol LD4 soak; excellent exterior durability, adhesion, flexibility and buffability
172	326	32	Designed for 420 g/L VOC two component acrylic polyurethane aerospace clear coats; passes 30 day Skydrol LD4 soak; excellent exterior durability, adhesion, flexibility and buffability
59	951	27	Versatile resin for spray, dip or flow coatings that are baked
34	—	—	High gloss; good balance of hardness and flexibility; excellent shelf stability
—	935	5	Can be formulated into FDA approvable coatings for direct food contact under 21 CFR 175.300; excellent chemical resistance and metal protection properties; excellent balance of hardness and flexibility
—	1,476	25	Designed for to crosslink with epoxy resins for metal applications. Excellent overbake properties, abrasion resistance and hardness.
—	510	14	Designed for industrial electrocoating or dip tanks where chemical, stain and corrosion resistance are required; provides stable low VOC systems when crosslinked with melamine, urea or epoxy resins
—	905	23	Soft, flexible resin that can be formulated into FDA approvable coatings for direct food contact under 21 CFR 175.300; excellent adhesion and chemical resistance; high gloss
—	905	3	Soft, flexible resin that can be formulated into FDA approvable coatings for direct food contact under 21 CFR 175.300; excellent adhesion and chemical resistance; high gloss

Latex

<i>PRODUCT</i>	<i>% SOLIDS (WEIGHT)</i>	<i>% SOLIDS (VOLUME)</i>	<i>DENSITY (LBS/GAL)</i>	<i>PH</i>	<i>TG (°C)</i>
ACRYLIC LATEXES					
AQUAMAC® 450	50.0	47.2	8.80	8.5	10
AQUAMAC® 510	50.0	47.1	8.82	8.5	-5
AQUAMAC® 720	45.0	41.3	8.90	9.0	40
SYNTHEMUL® 40-412	50	—	8.70	9.0	12
SYNTHEMUL® 40-418	51	48.0	8.85	9.0	21
SELF-CROSSLINKING					
AQUAMAC® 575	45.6	43.1	8.70	8.5	-5

<i>PRODUCT</i>	<i>% SOLIDS (WEIGHT)</i>	<i>% SOLIDS (VOLUME)</i>	<i>DENSITY (LBS/GAL)</i>	<i>PH</i>	<i>TG (°C)</i>
STYRENE ACRYLICS					
AQUAMAC® 260	55.0	52.0	8.90	8.5	5
AQUAMAC® 440	45.0	43.3	8.60	7.5	23
AQUAMAC® 541	45.0	43.9	8.50	8.5	-10
AQUAMAC® 570	45.0	43.3	8.60	9.0	32
AQUAMAC® 700	45.0	42.6	8.70	8.5	58
AQUAMAC® 705	50.0	47.8	8.70	8.5	19
AQUAMAC® 737	47.5	46.4	8.50	8.5	3
AQUAMAC® 740	47.5	45.5	8.65	8.5	40
AROLON® 820-W-49	49.0	46.0	8.80	8.5	13
AROLON® 845-W-45	45.0	43.0	8.75	8.5	67
AROLON® 847-W-42	42.0	39.8	8.52	8.0	23
AROLON® 850-W-45	45.0	43.0	8.65	7.9	37
AROLON® 860-W-45	45.0	42.0	8.85	8.0	59
AROLON® 5900	42.0	39.0	8.83	7.5	24
VINYL ACRYLICS					
AQUAMAC® 580	56.0	52.5	9.10	4.7	9
SYNTHEMUL® 40-143	65.0	62.0	9.10	5.0	16
SYNTHEMUL® DX-101-90	55.0	—	8.91	6.0	12

MFFT (°C)	PARTICLE SIZE (NM)	FEATURES AND BENEFITS
18	195	Excellent abrasion resistance and adhesion; good hardness and exterior durability
1	130	Low Tg latex capable of near zero VOC flat coatings; good exterior durability and adhesion
30	160	Excellent thin film corrosion resistance and compatibility with reactive pigments in primer formulations; can achieve high gloss for interior applications; good adhesion to galvanized steel
5	—	General purpose exterior house paints and semi gloss enamels; traffic paints; capable of formulating to 100-150 g/L VOC; excellent exterior durability, mechanical stability, and alcohol compatibility
23	—	Interior and exterior semi gloss; capable of formulating to 150-200 g/L VOC; excellent block resistance; good wet adhesion; very good gloss development
-2	95	APE-free, all acrylic latex capable of achieving 50 g/L VOC compliant formulations; excellent adhesion to a variety of substrates; superior block resistance; very good chemical resistance; performs well in concrete and architectural coatings

MFFT (°C)	PARTICLE SIZE (NM)	FEATURES AND BENEFITS
16	215	Developed for highly pigmented systems such as non-specification traffic paints, marking paints and concrete/masonry coatings; dries quickly
32	100	Workhorse product exhibiting outstanding all-around performance including block resistance, corrosion resistance, good adhesion and gloss development; can be formulated to 150 g/L VOC
-3	115	Can be formulated to 50 g/L VOC for stain block primer with the use of ZnO; formulated coatings exhibit excellent tannin stain blocking and very good ink stain block properties
36	95	APE-free resin designed for concrete waterproofers; great adhesion to concrete and excellent blush resistance; can be formulated to 100 g/L VOC; passes hydrolytic pressure test TTP-1141A, par.4.3.8
58	115	High Tg latex with good corrosion and weathering resistance; produces hard, tough films with high gloss
32	115	Workhorse latex for industrial maintenance coatings; capable of achieving 100 g/L VOC; outstanding corrosion resistance; excellent weathering and early water resistance; good flexibility and superior gloss
-2	120	APE-free resin designed for industrial maintenance coatings at 50 g VOC or lower; excellent corrosion resistance; good early water and block resistance
62	110	DTM topcoat and primer coatings with high gloss and good corrosion and water resistance
8	—	Maintenance primers with good adhesion to galvanized steel; anti-corrosive pigment stability
63	—	Wood varnishes with fast air dry; excellent chemical resistance
20	—	Industrial maintenance finishes with excellent corrosion and humidity resistance
47	—	Plastic coatings with excellent adhesion to plastics
90	—	Wood varnishes and blending resin for PUDs; block resistant; excellent mechanical stability; crosslinkable
—	—	Acrylic polyol emulsion designed to be reacted with polyisocyanates. OHN = 84 on solids.
9	295	APE-free latex with excellent scrub resistance and gloss development; good block resistance, thickening efficiency and formulation latitude for interior architectural coatings
11	—	Interior flat and satin finishes; provides good low temperature touch-up; higher solids
12	300	Interior flat and satin finishes; superior hiding power, flow and leveling

Powders

PRODUCT	ACID VALUE	OH VALUE* (ON SOLIDS)	DENSITY VISCOSITY (CP)**	TG (°C)	RESIN / CURATIVE RATIO
CARBOXYL-TERMINATED – HYBRID POLYESTER: INTERIOR USE					
POLYMAC® 2510	85 - 100	—	3,100 - 5,600	72	45 / 55 50 / 50 60 / 40
CARBOXYL-TERMINATED – TGIC CURED: EXTERIOR USE					
POLYMAC® 5040	30 - 36	—	6,200 - 7,200	68	93 / 7
POLYMAC® 5050	32 - 38	—	3,000 - 3,800	59	95 / 5
POLYMAC® 5650	30 - 35	—	3,700 - 5,600	61	93 / 7
POLYMAC® 5900	46 - 52	—	3,300 - 4,300	67	90 / 10
CARBOXYL-TERMINATED – PRIMID® CURED: EXTERIOR USE					
POLYMAC® 5050	32 - 38	—	3,000 - 3,800	59	95 / 5
HYDROXL-TERMINATED – ALCURE® POLYISOCYANATE CURED: EXTERIOR USE					
POLYMAC® 3020	5 - 9	116	3,100 - 4,300	55	63 / 37
POLYMAC® 3110	11	290	2,100 - 3,000	48	50 / 50
POLYMAC® 3160	15	40	3,700 - 4,900	54	82 / 18
POLYMAC® 3220	4	40	3,700 - 5,600	58	82 / 18
HYDROXL-TERMINATED – HYDROXYL FUNCTIONAL FOR URETHANE SYSTEMS					
FINE-CLAD® M-8076	3 - 5.5	43	5,000 - 6,500	66	78 / 22
HYDROXL-TERMINATED – BIFUNCTIONAL & CARBOXYL FUNCTIONAL FOR GMA ACRYLIC SYSTEMS					
FINE-CLAD® M-8402	13 - 15	22	3,000 - 5,000	63	Various
HYDROXL-TERMINATED – SUPER-DURABLE RESIN FOR EXTENDED EXTERIOR EXPOSURE					
POLYMAC® 6140	30 - 36	—	3,400 - 4,400	63	93 / 7
BISPHENOL-A FUMUARATE					
FINE-TONE® T-382ES	21	39	3,100	56	—

NOTE: Bake schedules are suggested times and must be determined by the user.

BAKE SCHEDULES	FEATURES AND BENEFITS
25 min @ 180°C / 356°F 15 min @ 204°C / 400°F	Uncatalyzed polyester; good flow; excellent shelf stability; highly reactive
20 min @ 180°C / 356°F 10 min @ 204°C / 400°F	High Tg; catalyst-free; good flow; excellent anti-yellowing capability
20 min @ 160°C / 320°F 10 min @ 180°C / 356°F	Excellent flexibility; good exterior durability; 0-T bend capability with 93 / 7 TGIC; low gloss capability when used with Casamid® 2228
20 min @ 180°C / 356°F 10 min @ 204°C / 400°F	Catalyst-free; excellent flow; good exterior durability; designed for “wet-look” clears
10 min @ 204°C / 400°F	Good solvent resistance and hardness
20 min @ 160°C / 320°F 10 min @ 180°C / 356°F	Excellent flexibility; good exterior durability; low gloss capability when used with Casamid® 2228
10 min @ 204°C / 400°F	Excellent stain, detergent and solvent resistance
15 min @ 204°C / 400°F	Designed to be extruded with POLYMAC® 3220 for low gloss polyurethane coatings; can be melt-mixed with other OH polyesters to enhance hardness and chemical resistance
10 min @ 204°C / 400°F	Excellent flow; very good physical properties
10 min @ 204°C / 400°F	Provides low gloss when combined with POLYMAC® 3110
20 min @ 177°C / 351°F 10 min @ 204°C / 400°F	PCM high flexibility urethane coatings; 0-T bend
10 min @ 204°C / 400°F 20 min @ 175°C / 347°F	Bifunctional polyester; superdurable multi cure matte system; one shot matte finishes
15 min @ 204°C / 400°F	Cures with TGIC at 93 / 7; good general purpose resin; requires 5-7% isocyanate curative for full physical properties
—	Designed to be extruded with POLYMAC® 3220 for low gloss polyurethane coatings; can be melt-mixed with other OH polyesters to enhance hardness and chemical resistance

Powders

<i>PRODUCT</i>	<i>EQUIVALENT WEIGHT</i>	<i>% NCO FOR CURE</i>	<i>TG (°C)</i>	<i>RESIN / CURATIVE RATIO</i>
POLYMERIC ISOCYANATE CURATIVES				
ALCURE® 4400	302	14	58	82 / 18
ALCURE® 4402	280	15	58	83 / 17
ALCURE® 4430	333	12.6	55	81 / 19
ALCURE® 4431	333	12.6	55	81 / 19
ALCURE® 4450	275	15.3	64	84 / 16
ALCURE® 4470	212	19.8	58	87 / 13

NOTE: Bake schedules are suggested times and must be determined by the user.



<i>BAKE SCHEDULES</i>	<i>FEATURES AND BENEFITS</i>
10 min @ 204°C / 400°F	Polymeric aliphatic isocyanate; excellent flow; good overall performance
10 min @ 204°C / 400°F	Higher reactivity than ALCURE® 4400; equivalent performance to higher trimer content
20 min @ 180°C / 356°F	Very good chemical resistance; polymeric aliphatic isocyanate; lower temperature cure than ALCURE® 4400
20 min @ 180°C / 356°F	Reduced yellowing and improved UV resistance versus ALCURE® 4430
20 min @ 160°C / 320°F	Polymeric aromatic isocyanate for low temperature cure; considerable savings over aliphatic curatives; not recommended for long-term UV exposure; high Tg
30 min @ 160°C / 320°F	Polymeric aliphatic isocyanate; lower temperature cure than ALCURE® 4400; e-caprolactam-free; triazole-blocked

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 ϵ -caprolactam and triazole.
Blocking Agent	A chemical, such as ϵ -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 (T_g)	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 Embrittlement	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.
T_g	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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