



Product Overview North America

Powder Coating Resins



Together we shape the world of powder

DSM is the world's leading supplier of innovative resins for powder coatings, committed to the powder coating industry. Together with you, we are dedicated to developing new powder coating solutions that help make the planet a cleaner, greener place. Whether you need a powder coating that is easy to spray and creates less waste, or one that shrugs off the scratches and bumps endured in everyday life, working with you we can make a world of difference in the coating industry. And that difference is a better, cleaner industry that helps brighten up lives.

Brightening up lives across the value chain

Our innovative resins brighten up life for our customers. And they include the people who actually apply coatings, as well as those who buy the finished products. We help customers develop formulas for specific functions and better performance. With today's technology, coatings can be applied in thinner layers and cured at lower temperatures to speed up the process and reduce energy costs. Moreover, all our powder coating resins are non-hazardous, making the coater's job healthier and happier.

Of course, it is the consumer who finally gets to appreciate the beauty of the end product; a durable, high gloss lustre that will not fade in the sun. A long-life, environmentally friendly coating, designed to resist scratching and corrosion and which bears no harm to the planet. All of which helps create brighter lives for generations to come.

Committed to powder coatings

In the 1960s our scientists created polyester powder coating resins technology. And that pioneering tradition, we are proud to say, continues today. Combining state of the art Research and Development facilities with profound market insights we create coating solutions that touch people's lives. But which, at no point in their lifecycle, cause unnecessary harm to people or planet. Solutions which add value while leaving a lighter footprint in the world.



Innovation and inspiration

DSM mixes bright science with an inquisitive mind to discover solutions in powder coating resins that will inspire you. Our powder coating resins portfolio is high-performance and cost-effective. Sustainable solutions for a range of extremely challenging applications, from domestic appliances to heavy duty machinery.

But making an excellent product is not the only reason why we are committed to the powder coating industry. By continually searching for innovative ideas, we seek to contribute to shaping the coatings industry as a whole. Of course this means we invest in new systems for new applications, but it also means thinking 'out of the box', beyond the traditional metal surfaces, to explore the potential of other powder coating substrates such as wood and plastic. A journey that ultimately creates aesthetic, functional,

and sustainable solutions to make life even brighter in the future.

DSM supplies a comprehensive product range including:

- Superdurable outdoor resins
- Value engineered resins
- Radiation curing resins
- Low temperature curing resins
- Corrosion protection resins
- Superior flow resins
- Low gloss / dry blend resins
- Powder in mold coating resins.
- Hydroxylated resins for isocyanate crosslinkers
- Carboxylated resins for epoxy / TGIC and other glycidylester crosslinkers
- Carboxylated resins for HAA (β -Hydroxyalkylamide) crosslinkers
- Carboxylated resins for epoxy free indoor applications

Your global partner

With five manufacturing centers in the Netherlands, Spain, the United States and Greater China we are never far from your business. And, we have marketing, sales and technical service hubs on three continents. So wherever you are, and whatever your market or application, our talented team are there to support you.

To find out more about how our bright science can brighten you life, contact your DSM Account Manager, Technical Application Manager or visit www.dsmcoatingresins.com



DSM Coating Resins product portfolio for powder coatings

Application segment	Curing speed
	slow cure
	fast cure

Uralac® resins for TGIC cure				
Industrial and architectural	P 3400 (93/7)	P 4800 (95/5)		
		P 6103 (94/6)		
		P 3900 (93/7)		
Architectural		P 5240 (93/7)	P 2220 (90/10)	P 6701 (93/7)
		P 6401 (93/7)		
Superdurable	P 6600 (93/7)			P 3280 (93/7)
	P 6680 (93/7)			
	P 5500 (90/10)			
	P 5525 (90/10)			

Uralac® resins for HAA (β-Hydroxyalkylamide) cure				
Industrial		P 541 (96/4, Veranda™)		
		P 7604 (96/4), Corres™		
Industrial and architectural		P 781 (96.5/3.5), HiTone™		P 3210 (95/5), EasyCure™
		P 835 (96.5/3.5)		
		P 812 (95/5)		
Architectural		P 833 (97/3)	P 870 (93/7)	P 3220 (93/7), EasyCure™
		P 837 (97/3)	P 877 (93/7)	
		P 782 (96/4), HiTone™		
		P 780 (95/5), HiTone™		
		P 865 (95/5)		
Superdurable	P 883 (97/3)			P 3230 (93/7), EasyCure™
	P 800 (96/4)			
	P 5500 (92/8)			
	P 5525 (92/8)			

Application segment	Curing speed
	slow cure
	fast cure

Uralac® resins for Isocyanate cure				
Industrial and architectural		P 1620 (85/15)	P 1535 (80/20)	
Architectural		P 5504 (80/20)		
Superdurable		P 1680 (85/15)		
		P 1580 (70/30)		

Polyester resin / Epoxy resin	Uralac® resins for Epoxy resin cure			
70 / 30	P 2450	P 4235	P 772, HiTone™	P 3270
	P 5030			
	P 770, HiTone™			
	P 775, HiTone™			
60 / 40	F 5340	P 4240		P 3160
	P 760, HiTone™	P 5042		
	P 761, HiTone™	P 6040		
50 / 50	P 5998			P 3250
				P 5142

Uralac® resins for low gloss coatings (dry blends)		
HAA (β-Hydroxyalkylamide) cure	Architectural	P 833 / P 870
		P 837 / P 877
	Superdurable	P 800 / P 5500
		P 883 / P 5500
TGIC	Industrial	P 2220 / P 4800

Uralac® resins for superdurable coatings	
HAA (β-Hydroxyalkylamide) cure	P 800
	P 883
	P 3230
	P 5500
	P 5525
TGIC	P 3280
	P 5500
	P 5525
	P 6600
PUR	P 6680
	P 1580

Uralac® resins for low bake/fast cure		
Hybrid 70/30	P 3270	
Hybrid 50/50	P 3250	
TGIC	P 3280	
HAA (β-Hydroxyalkylamide) cure	P 3210	
	P 3220	
	P 3230	

Uracross® system for UV cure	
Composite wood (MDF)	P 3125 / P 3307

This overview gives the key properties of a broad selection of resins. The product specifications were correct at the time of printing but may change from time to time. We recommend that you contact your local Sales Office for comprehensive information on our full range of products.

Uralac® resins for TGIC cure

Carboxylated Powder Coating Resins											
Product name	Acid value TM 2400	Viscosity TM 2727	Tg TM 2076	Ratio PE / TGIC	Tribo	Exterior durability	Cure cycle 160°C	Cure cycle 180°C	Cure cycle 200°C		Remarks
Uralac® P 4800	24-28	45-80	65	95/5		+		15'	10'		Good mechanical properties; low level TGIC
Uralac® P 6103	28-32	23-53	57	94/6	•	+			10		Non Blooming at 160C
Uralac® P 3280	33-37	5-35	55	93/7		++++	20'				Fast cure superdurable
Uralac® P 3400	32-38	55-95	68	93/7		++			15'		Slow cure rate, very good flow, high Tg, economical resin
Uralac® P 3900	32-38	40-70	64	93/7		+			10'		Non blooming > 160°C
Uralac® P 5240	32-38	35-55	64	93/7		+++			12'		Good flow
Uralac® P 6401	32-38	26-46	58	93/7	•	++		20'	10'		Medium cure rate; very good flow
Uralac® P 6600	30-36	25-65	58	93/7		++++			15'		Very good
Uralac® P 6680	31-35	25-75	62	93/7		++++			10'		Reduced system cost
Uralac® P 6701	32-38	26-46	58	93/7	•	++	15'		6'		Low temperature; fast cure combined with good flow
Uralac® P 2220	50-54	30-55	59	90/10		+++		12'	8'		High cross-link density, good surface hardness, suitable for dry blend mat (with P 4800)
Uralac® P 5500	46-54	37-67	58	90/10		++++			15'		Superdurable type; high TGIC content; limited flexibility but good adhesion
Uralac® P 5525	49-54	0-15	51	90/10		++++			15'		Superdurable type; high TGIC content; extremely smooth

Uralac® resins for HAA (β-Hydroxyalkylamide) cure

Carboxylated Powder Coating Resins											
Product name	Acid value TM 2400	Viscosity TM 2727	Tg TM 2076	Ratio PE / HAA	Tribo	Exterior durability	Cure cycle 170°C	Cure cycle 180°C	Cure cycle 200°C		Remarks
Uralac® P 833	19-22	36-96	58	97/3	•	+++	15'	10'	6'		Low level HAA for architectural purpose; low gloss in dry blend formulation with Uralac® P 870
Uralac® P 837	19-23	30-70	56	97/3	•	+++		10'			Low level HAA, low gloss in dry blend with Uralac® P 877
Uralac® P 883	18-22	27-57	59	97/3	•	++++		15'	10'		Superdurable low level HAA; low gloss in dry blend formulation with Uralac® P 5500
Uralac® P 781, HiTone™	21-26	40-80	57	96.5/3.5	•	++	15'	10'			Superior flow and high loading capacity; general industry type
Uralac® P 835	20-24	40-80	57	96.5/3.5	•	++	15'	10'	6'		Low level HAA for general purpose; dry blend low gloss in combination with Uralac® P 870
Uralac® P 541, Veranda™	26-30	17-47	54	96/4	•	+		12'	8'		Epoxy free hybrids alternative; limited outdoor durability; excellent staining resistance
Uralac® P 7604, Corres™	26-30	25-65	56	96/4	•	+		12'	8'		Same corrosion protection as pre-treatment or epoxy primer; but with lesser costs and better environmental foot print; general industrial type
Uralac® P 782, HiTone™	26-30	22-62	54	96/4	•	+++		12'			Superior flow and high loading capacity; low level crosslinker; architectural type
Uralac® P 800	26-30	21-41	61	96/4	•	++++		15'	8'		Superdurable type; good water & chemical resistance
Uralac® P 3210, EasyCure™	32-38	10-50	53	95/5	•	++	15' 155°C	6'	3'		Low bake; non blooming; architectural performance achievable in light colours
Uralac® P 780, HiTone™	34-38	12-32	56	95/5	•	+++	15'	10'	6'		Superior flow and high loading capacity; architectural type
Uralac® P 812	33-37	15-45	57	95/5	•	++	15'	10'	6'		General purpose with extreme good flexibility
Uralac® P 865	33-37	12-32	56	95/5	•	+++	15'	10'	6'		Good flow; architectural type & powder stability
Uralac® P 3220, EasyCure™	50-55	10-50	55	93/7		+++	15' 155°C	6'			Low bake; non blooming; architectural performance achievable in all colours
Uralac® P 3230, EasyCure™	50-54	20-30	50	93/7	•	++++	15' 155°C				Low bake; non blooming; superdurable performance achievable in all colours
Uralac® P 870	50-54	30-55	59	93/7	•	+++	10' 170°C 15' 160°C				Low temperature architectural type; low gloss in dry blend formulation with Uralac® P 835 or Uralac® P 833; very low temperature cure (150-160°C)
Uralac® P 877	50-54	30-55	59	93/7	•	+++	10'				Low gloss in dry blend with Uralac® P 837
Uralac® P 5525	49-54	0-15	51	92/8		++++		15'			Superdurable type; good chemical resistance, extremely smooth

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Uralac® resins for Isocyanate cure

Hydroxylated Powder Coating Resins											
Product name	Hydroxy value TM 2432	Viscosity TM 2727	Tg TM 2076	Ratio resin/ NCO		Tribo	Exterior durability		Cure cycle 180°C	Cure cycle 200°C	Remarks
Uralac® P 1620	24-32	110-150	66	85/15			+			10'	Resin for wrinkle, aligator finish
Uralac® P 1680	25-35	10-30	58	85/15			+++++			10'	Superdurable type; suitable for ACE applications
Uralac® P 1535	36-43	23-43	56	80/20			+			15'	Very good flow and outdoor durability
Uralac® P 5504	38-45	35-60	56	80/20			+++			10	Standard architectural, good flow, suitable for uretdion cure
Uralac® P 1580	75-95	8-28	51	70/30			+++++			10'	Superdurable type; anti-graffiti; very good flow, suitable for ACE

Uralac® resins for Epoxy cure

Carboxylated Powder Coating Resins											
Product name	Acid value TM 2400	Viscosity TM 2727	Tg TM 2076	Ratio PE / Epoxy	TMA-free	Tribo		Cure cycle 160°C	Cure cycle 180°C	Cure cycle 200°C	Remarks
Uralac® P 2450	32-38	55-95	68	70/30	•				15'	10'	Standard 70/30 hybrid, High Tg, good overbake resistance
Uralac® P 3270	32-38	15-35	54	70/30	•			12' 30' 145°C		10'	Fast curing 70/30 hybrid
Uralac® P 4235	33-37	20-60	54	70/30	•	•			12		Medium cure with good flow and yellowing properties
Uralac® P 5030	32-38	17-37	53	70/30	•				15'	10'	Superior flow and high loading capacity; suitable for thin film
Uralac® P 770, HiTone™	33-39	15-40	54	70/30	•					10'	Superior flow and high loading capacity; suitable for thin film; more reactive version of Uralac® P 770
Uralac® P 772, HiTone™	33-39	15-40	54	70/30	•			15' 170°C	10'		High Tg version of Uralac® P 770; superior flow and high loading capacity
Uralac® P 775, HiTone™	33-39	31-71	60	70/30	•					10'	Good price performance resin for general purpose
Uralac® P 3160	48-55	16-36	58	60/40				10'	4'	3'	Fast cure, low bake with excellent flow
Uralac® P 4240	50-54	25-55	56	60/40		•			15'		Good Flow, industry standard
Uralac® P 5042	52-58	20-40	57	60/40					12'	8'	Slow cure, excellent flow, industry standard
Uralac® F 5340	48-58	7-27	50	60/40						15'	Non technical grade, especially designed for coatings approved for contact with drinking water, not catalysed
Uralac® P 6040	52-58	18-38	57	60/40					15'	8'	Slow cure, excellent flow, industry standard
Uralac® P 760, HiTone™	48-58	16-46	55	60/40					15'	10'	Superior flow and high loading capacity; suitable for thin film
Uralac® P 761, HiTone™	52-58		57	60/40					15'	8'	Superior flow and high loading capacity
Uralac® P 3250	70-85	7-17	55	50/50				6' 160°C 30' 130°C			Fast curing, low bake
Uralac® P 5142	69-79	18-38	58	50/50				10' 160°C 25' 140°C			Slow cure, excellent flow
Uralac® P 5998	69-79	18-38	58	50/50						10'	Slow cure, excellent flow

Uralac® resins for UV-cure

Hydroxylated Powder Coating Resins											
Product name	Hydroxy value TM 2432	Viscosity TM 2727	Tg TM 2076	Melting traject TM 2076	Ratio PE / P 3307	Tribo					Remarks
Uracross® P 3125	45-60	5-30	45		83/17	•					Suitable for heat sensitive substrates like: composite wood (MDF) in combination with Uracross® P 3307, good flow
Crosslinker											
Uracross® P 3307				90-110°C	83/17						Suitable for heat sensitive substrates like: composite wood (MDF), high scratch resistance, high solvent resistance less oxygen inhibition than UV Acrylics

- TM 2400** Acid value, mg KOH necessary to neutralise the acidic constituents in 1g polyester resin
TM 2727 Viscosity of PCR using the Brookfield CAP 2000+H Viscometer at 160 °C, reported in Pa.s
TMA-free Free from trimellitic anhydride (TMA)
TM 2076 Glass transition temperature (°C), determined by differential scanning calorimetry at a heating rate of 5°C/min (DSC Mettler TA 3000)
TM 2432 Mg KOH necessary to neutralise the quantity of acetic acid required to react with the hydroxyl groups in polyester 1g resin
TM 2051 Epoxy equivalent weight

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Highlights of Innovation Products

Uralac® Value Engineered Hybrids	
P 4235, P 4240	Low system cost hybrids

Uralac® Veranda™	
P 541	Epoxy replacement, low cost industrial HAA, increased outdoor durability

Uralac® HiTone™ Interior	
P 760, P 761	Superior flow at high filler level
P 770, P 772, P 775	
Uralac® HiTone™ Exterior	
P 780, P 781, P 782	Superior flow at standard and high fill level

Uracross® Powder in Mold Coating	
P 750 (indoor applications)	Powder in mold Coating to replace multi-step and costly liquid coating process
P 755 (outdoor application)	
P 3307 (cross linker)	

Uralac® Corres™	
P 7604	Improved corrosion protection, epoxy primer replacement

Uralac® EasyCure™ Interior	
P 3160	Low bake hybrid with superior flow
Uralac® EasyCure™ Exterior	
P 3210, P 3220, P3230	Low bake HAA resin with superior flow

Uralac® Dry Blend Matte	
P 837, P 877	Excellent outdoor durability, excellent mechanical properties and good gloss consistency

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