Uralac® Crelan®

Uralac® polyester resins & Crelan® isocyanate crosslinkers for powder coatings

Product Overview Europe

covestro

Shaping a sustainable coatings future together

Covestro is a leading supplier of high-quality, polyester powder coating resins and isocyanate crosslinkers for a wide range of end market applications. These products, when used in the right powder coating formulation, determine the specific properties of formulated powder coatings, which are typically applied by electrostatic spray. To achieve the required powder coating system with the needed requirements, you just select the right **Uralac®** polyester resin and/or **Crelan®** isocyanate crosslinker. These solutions are developed to address direct market demands, and also future end-market needs. So, whether you need a powder coating that is easy to spray and creates less waste, or one that resists scratches and bumps endured in everyday life, our resins cater to your requirements. By combining high-performance products with outstanding environmental responsibility, we offer the best possible solutions for people today – and for generations to come.

Commitment to the powder coating market
Covestro has pioneered the powder coating industry since the 1960s. Today, we continue to be one of the global market leaders thanks to our ongoing commitment to our customers and their markets, our consistent resin quality, and environmental responsibility. Our high quality formulas and consistent processes ensure that you receive reliable and stable products that offer superior properties, including flexibility, hardness, durability, resistance to heat and chemicals, anti-corrosion, and transfer efficiency.

Globally, our proven product quality is matched by the high professional standards of our technically experienced team, who are dedicated to providing our customers with unique solutions to their formulating challenges. For over 50 years, we have fostered strong and valuable customer relationships, which have supported the development of products that time over time meet and exceed market requirements.

Sustainability as a key focus
At Covestro, we see sustainability not just as an opportunity, but as a long-term business focus. Every day, we are dedicated to the development of new powder coating solutions that help make the planet a cleaner place and reduced ecological impact. Over the past few years, we have developed unique powder coating resins that allow for lower curing temperatures, which result in a smaller carbon footprint, and will open the door to new applications for powder coatings. In addition, with powder coating solutions we can shift away from traditional solvent-based coating technologies.

Resin development to address market trends
In order to keep on meeting evolving powder coating requirements across our global markets, we invest significantly in the development of our product portfolio. All of our product developments and improvements are focused on meeting specific market developments today and for the future. Our product portfolio supports a broad spectrum of market segments, that include a wide array of substrates from various metals and glass fiber pultrusions to heat-sensitive applications.

In line with this market-oriented development approach, Covestro supplies a comprehensive product range, including:
- Outdoor resins for general industry, architectural, superdurable and hyperdurable applications
- Low-temperature or fast-curing resins
- Corrosion resistant resins
- Resins for good esthetics
- Resins for low gloss coatings (dry blends or one shot matte)
- Isocyanate curing hydroxyl resins
- TGIC, HAA and epoxy curing carboxylated resins
- Glycidyl ester curing carboxylated resins
- Food contact carboxylated resins
- Epoxy-free carboxylated indoor resins
- Value-engineered resins
- Carboxylated resins for heat-sensitive substrates
- Isocyanate crosslinkers

Covestro will grow the market for coatings with more sustainable solutions that match the needs of these market segments:
- Architectural
- Automotive
- ACE/heavy machinery
- Furniture
- General industry
- Domestic appliances
- IT

Thinking globally, acting regionally
With five manufacturing centers located in the Netherlands, Spain, the United States, Taiwan and China Mainland, as well as marketing and sales hubs on three continents, we are never far from your business. What's more, our technical team is able to leverage global expertise to deliver valuable advice for your particular business. So wherever you are, and whatever your market or application is, our team is there to support you.
To find out more about our powder coating solutions, contact your Covestro Account Manager, your Technical Application Manager, or visit **www.covestro.com.**

Covestro Coating Resins product portfolio for powder coatings

Uralac® resins for low gloss coatings (dry blends)

HAA	Industrial	P 3213/ P 3218
		P 835/ P 873
	Architectural	P 3223/ P 3228
		P 833/ P 870
		P 831/ P 870
	Architectural+	P 833/ P 880
	Superdurable	P 3233/ P 3238
		P 883/ P 6800
		P 8830/ P 8885
PT 910	Architectural	P 3485/ P 2240
TGIC	Architectural	P 4800/ P 2220
		P 4905/ P 2240
	Superdurable	P 800/ P 6800
Hybrids	Indoor	P 5881/ P 3150
		P 5881/ P 3050

Uralac® resins for low gloss coatings (one shot matte)

PUR	Superdurable	P 1625/ P 1675, OSM
HAA	Industrial	P 8014/ P 8019, OSM

Uralac® resins for high pigment loading

Hybrid 60/40	Indoor	P 765, Hitone
Hybrid 70/30		P 772, HiTone
		P 777, HiTone
HAA	Architectural	P 782, HiTone
		P 785, HiTone

Uralac® Veranda resins for epoxy replacement

HAA	Industrial	P 541, Veranda

Uralac® resins for food and drinking water applications

Hybrid 60 /40		F 5340, Food grade

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Uralac® resins for low bake/fast cure

Hybrid 70/30			P 3775, EasyCure
Hybrid 50/50	Indoor		P 3050, EnGain
			P 3150, EnGain
			P 3250, EnGain
HAA	Industrial		P 3213/ P 3218, EasyCure
			P 3214, EasyCure
			P 3215, EasyCure
	Architectural		P 3223/ P 3228, EasyCure
			P 3225, EasyCure
	Superdurable		P 3230, EasyCure
			P 3231, EasyCure
			P 3232, EasyCure
			P 3233/ P 3238, EasyCure
TGIC	Architectural		P 3227, EasyCure

Uralac® resins for clear coatings (flow agent inside)

HAA			P 879
PT 910			P 3489

Uralac® Corres resins for good corrosion resistance

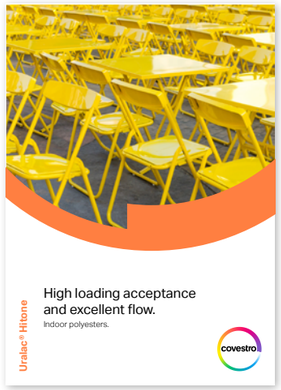
Hybrid	Indoor		P 7630
HAA	Industrial		P 7604
	Architectural		P 7610
	Superdurable		P 7684
TGIC	Industrial		P 7620

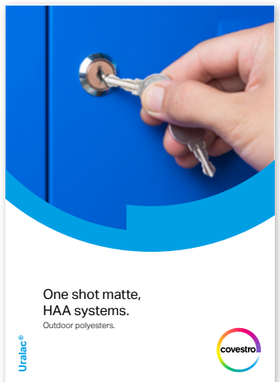
Uralac® resins for good blanching resistance

HAA	Architectural		P 8240
			P 8250
			P 8253
			P 8855

Uralac® masterbatch flow agent

Clear coatings			P 3488





Uralac® resins for HAA (ß-Hydroxyalkylamide) cure

Carboxylated Powder Coating Resins	PRODUCT NAME	RATIO PE / HAA	SUITABLE FOR DRYBLEND	TRIBO*	ACID VALUE TM-2400	VISCOSITY TM-2727	Tg TM-2076	CURE CYCLE 160°C**		CURE CYCLE 180°C**	CURE CYCLE 200°C**	REMARKS
Industrial	Uralac® P 8391	96.5/3.5			19-23	50-90	59			10'		
	Uralac® P 541, Veranda	96/4		•	26-30	17-47	56			12'		Epoxy free hybrids alternative, limited outdoor durability, excellent staining resistance
	Uralac® P 7604, Corres	96/4		•	26-30	25-65	58			15'		GI resin, Same corrosion protection as pre-treatment or epoxy primer
	Uralac® P 812	95/5		•	33-37	15-45	61			10'		General purpose with good flexibility in thick layers
	Uralac® P 8014, OSM	96/4			24-26	26-48	60			10'		Low AV resin for OSM combination with **Uralac® P 8019**
	Uralac® P 8019, OSM	90/10			66-74	20-55	58			10'		High AV resin for OSM combination with **Uralac® P 8014**
	Uralac® P 873	90/10	•	•	69-79	18-38	57	15'				Low temperature /fast cure GI grade, suitable for low gloss in dry blend formulation with **Uralac® P 835**
Architectural and Industrial	Uralac® P 835	96.5/3.5	•	•	20-24	40-80	60			10'		Low level HAA for general purpose, dry blend low gloss in combination with **Uralac® P 870**
	Uralac® P 8395	96/4		•	23-27	85-125	68			12'		Low level HAA for architectural purpose and good powder stability
	Uralac® P 875	95/5			33-37	13-23	58				10'	Excellent flow, good degassing properties and high film build
	Uralac® P 879	95/5		•	33-37	13-23	54				10'	For clear coatings (flow agent included), excellent flow, high film build
Architectural	Uralac® P 831	97/3	•	•	18-22	20-60	55			12'		Low level HAA for architectural purpose, can be used for dry blending low gloss with **Uralac® P 877**
	Uralac® P 833	97/3	•	•	19,5-22,5	36-96	62			10'		Low level HAA for architectural purpose, low gloss in dry blend formulation with **Uralac® P 870**
	Uralac® P 821	96.5/3.5		•	20-24	30-70	58			12'		Low level HAA for architectural purpose, excellent flow, improved powder stability compared to **Uralac® P 823**
	Uralac® P 8282	96.4/3.6		•	23-27	10-50	56			15'		Architectural grade with excellent degassing properties and excellent flow/appearance properties
	Uralac® P 838	96.4/3.6		•	24-26	26-48	60			10'		Low level HAA for architectural purposes, good grindability, suitable for dry blend low gloss with **Uralac® P 870**
	Uralac® P 7610, Corres	96/4			26-30	30-60	58			15'		Architectural resin, Same corrosion protection as pre-treatment or epoxy primer
	Uralac® P 782, HiTone	96/4		•	26-30	22-62	58			12'		Superior flow and high loading capacity, low level crosslinker, architectural type
	Uralac® P 8240, Non-blanching	96/4		•	28-32	20-60	55			10'		Low crosslinker level, architectural grade with excellent resistance to blanching
	Uralac® P 815	95/5		•	33-37	26-46	62			10'		General purpose with good exterior durability (architectural) and processebility
	Uralac® P 785, HiTone	95/5		•	34-36	10-40	60			10'		High Tg P 780, superior flow and high loading capacity
	Uralac® P 865	95/5		•	33-37	12-32	56			10'		Good flow, architectural type
	Uralac® P 8651	95/5		•	31-35	20-40	58			10'		Good flow, architectural type and good powder stability
	Uralac® P 8652	95/5		•	29-33	25-65	58			10'		Good flow and flexibility, architectural type with good powder stability
	Uralac® P 867	95/5		•	33-37	33-55	64			10'		Architectural type with improved powder stability, anti-drip, high Tg resin, good blanching resistance
	Uralac® P 868	95/5		•	32-36	10-40	59			10'		Robust, architectural type
	Uralac® P 895	95/5		•	32-38	5-45	57			15'		Good flow, improved exterior durability compared to **Uralac® P 865**
	Uralac® P 8250, Non-blanching	95/5		•	33-37	15-55	60			12'		Architectural type with excellent resistance to blanching
	Uralac® P 8253, Non-blanching	95/5		•	33-37	30-70	63			12'		Architectural grade with excellent resistance to blanching and increased flexibility
	Uralac® P 2240	93/7	•	•	51-56	75-115	69	15'				Low temperature, fast cure for high Tg coatings, improved humidity resistance; Can be used in dryblend systems with **Uralac® P 3485**
	Uralac® P 870	93/7	•	•	50-54	30-55	58	15'				Low temperature architectural type, low gloss in dry blend formulation with **Uralac® P 835** or **Uralac® P 833**
	Uralac® P 880	90/10	•	•	72-78	10-18	51			10'		Architectural+ type low gloss dry blend in combination with **Uralac® P 800** or **Uralac® P 833**, superdurable performance in light colors
	Uralac® P 878	88/12	•	•	85-105	40-100	70			10'		High Av, high Tg, excellent paper release when used in sublimation technology; Can be used as 3 component in dry blends to adjust gloss
Superdurable	Uralac® P 883	97/3	•	•	18-22	27-57	63				10'	Superdurable low level HAA, low gloss in dry blend formulation with **Uralac® P6800**
	Uralac® P 8830	97/3	•	•	18-22	20-60	58			15'		Low level HAA superdurable grade for medium cure, can be used for dry blending low gloss with **Uralac® P 8885**
	Uralac® P 7684, Corres	96/4			26-30	10-50	61			15'		SD resin, Same corrosion protection as pre-treatment or epoxy primer
	Uralac® P 800	96/4	•	•	26-30	21-41	61			15'		Superdurable type, good water & chemical resistance
	Uralac® P 885	95/5		•	33-37	28-48	53			15'		Superdurable type, improved flexibility for superdurable grade
	Uralac® P 8851	95/5		•	33-37	70-110	60			15'		Superdurable type, improved flexibility for superdurable grade and good powderstability
	Uralac® P 8855, Non blanching	95/5			33-37	15-55	60			12'		Superdurablel type with excellent resistance to blanching
	Uralac® P 6800	94/6			41-46	25-65	64			15'		Superdurable type, low gloss in dry blend formulation with **Uralac® P 883**
	Uralac® P 8885	91,5/8,5	•	•	58-62	70-110	67	15'		6'		High level HAA superdurable grade for low bake or fast cure, can be used for dry blending low gloss with **Uralac® P 8830**

* Tribo chargeable when processed under controlled conditions
** Total oven time

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Uralac® EasyCure resins for low temperature HAA (ß-Hydroxyalkylamide) cure

Carboxylated Powder Coating Resins	PRODUCT NAME	RATIO PE / HAA	SUITABLE FOR DRYBLEND	TRIBO*	ACID VALUE TM-2400	VISCOSITY TM-2727	Tg TM-2076	CURE CYCLE 160°C**		CURE CYCLE 180°C**		REMARKS
Industrial	Uralac® P 3213, EasyCure	96/4	•	•	23-27	40-80	51	12'		6'		Low level HAA industrial grade for low bake or fast cure, can be used for dry blending low gloss with **Uralac® P 3218**
	Uralac® P 3210, EasyCure	95/5		•	32-38	10-50	54	10'		6'		Low bake, excellent flow, non blooming, Industrial type
	Uralac® P 3214, EasyCure	95/5		•	31-35	20-60	58	10'		6'		Low bake/fast cure, excellent flow, non blooming, Industrial type with good powder stability
	Uralac® P 3215, EasyCure	95/5		•	34-38	25-65	63	10'		6'		EasyCure industrial grade for low or fast cure and good storage stability
	Uralac® P 3218, EasyCure	89/11	•	•	69-79	20-60	61	12'		6'		High level HAA industrial grade for low bake or fast cure, can be used for dry blending low gloss with **Uralac® P 3213**
Architectural	Uralac® P 3223, EasyCure	97/3	•		18-22	85-125	55	12'		6'		Low level HAA archtectural grade for low bake or fast cure, can be used for dry blending low gloss with **Uralac® P 3228**
	Uralac® P 3225, EasyCure	95/5			33-37	15-35	58	12'		6'		Low bake/Fast cure, excellent flow, non blooming at cure, and architectural grade
	Uralac® P 3228, EasyCure	92/8	•		56-60	15-55	57	12'		6'		High level HAA architectural grade for low bake or fast cure, can be used for dry blending low gloss with **Uralac® P 3223**
Superdurable	Uralac® P 3233, EasyCure	97/3	•		18-22	40-80	57	12'		6'		Low level HAA superdurable grade for low bake or fast cure, can be used for dry blending low gloss with **Uralac® P 3238**
	Uralac® P 3230, EasyCure	93/7		•	50-54	20-30	50	12'		6'		Low bake, good flow, non blooming, superdurable type
	Uralac® P 3231, EasyCure	93/7		•	49,5-53,5	20-60	56	12'		6'		Low bake/ Fast cure, good flow, non blooming, superdurable type, higher Tg version **Uralac® P 3230**
	Uralac® P 3232, EasyCure	93/7			49,5-53,5	20-60	60	12'		6'		Low bake/ Fast cure, good flow, non blooming, superdurable type, higher Tg version **Uralac® P 3231**
	Uralac® P 3238, EasyCure	92/8	•		46-60	15-45	64	12'		6'		High level HAA superdurable grade for low bake or fast cure, can be used for dry blending low gloss with **Uralac® P 3233**

Uralac® resins for PT 910/ PT 912 (Glycidyl ester) cure

Carboxylated Powder Coating Resins	PRODUCT NAME	RATIO PE / PT 910 OR PT 912		TRIBO*	ACID VALUE TM-2400	VISCOSITY TM-2727	Tg TM-2076			CURE CYCLE 200°C**	REMARKS
Industrial	Uralac® P 3490	93/7		•	25-30	75-115	69			10'	Good flexibility in time, non blooming at 160°C, industrial type
Architectural and Industrial	Uralac® P 3485	93/7		•	25-30	75-115	68			10'	General purpose, architectural and industrial quality
	Uralac® P 3489	93/7		•	25-30	75-115	68			20'	For clear coatings (flow agent included), excellent flow, architectural and industrial type
	Uralac® P 3494	93/7		•	24-28	62-102	68			10'	Non tribo version **Uralac® P 3495**, Architectural Type, improved flexibility in pigmented formulations, for clear coatings in combination with **Uralac® P 3488**
	Uralac® P 3495	93/7		•	24-28	62-102	68			10'	Architectural Type, improved flexibility in pigmented formulations, for clear coatings in combination with **Uralac® P 3488**
	Uralac® P 3497	92/8		•	29-33	32-62	63			15'	Architectural Type, good flexibility and good flow
Superdurable	Uralac® P 3480	94/6		•	20-25	60-130	63			12'	Superdurable type, good chemical resistance, limited flexibility

Uralac® masterbatch flow agent

Powder Coating Resins with flow agent	PRODUCT NAME	ACID VALUE TM-2400	VISCOSITY TM-2727	Tg TM-2076	FLOW ADDITIVE			REMARKS
	Uralac® P 3488	29-37	30-70	62	5%			Flow control agent master batch (5wt%) for clear coatings

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** Total oven time

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Uralac® resins for TGIC (Triglycidyl Isocyanurate) Cure

Carboxylated Powder Coating Resins	PRODUCT NAME	RATIO PE / TGIC	SUITABLE FOR DRYBLEND	TRIBO*	ACID VALUE TM-2400	VISCOSITY TM-2727	Tg TM-2076	CURE CYCLE 160°C**		CURE CYCLE 180°C**	CURE CYCLE 200°C**	REMARKS
Industrial	Uralac® P 7620, Corres	93/7			32-37	55-95	70				10'	GI resin, Same corrosion protection as pre-treatment or epoxy primer
Architectural and Industrial	Uralac® P 4905	96/4	•		18-22	75-115	63				12'	Low level TGIC, suitable for structure, suitable for dryblend matt with **Uralac® P 2240**
	Uralac® P 4800	95/5	•		24-28	45-80	61				10'	Good mechanical properties, low level TGIC, suitable for dryblend matt with **Uralac® P 2220**
	Uralac® P 2400	93/7			32-38	55-95	68				10'	Standard TGIC resin, good cure-flow balance, high Tg
	Uralac® P 3227, EasyCure	93/7			33-37	15-45	60	10'				Low bake/Fast cure, excellent flow, non blooming at cure, and architectural grade
	Uralac® P 3400	93/7			32-38	55-95	68				13'	Slow cure resin, very good flow, high Tg, economical resin
	Uralac® P 6310	93/7			32-36	20-60	65				10'	Architectural grade with good mechanicals
	Uralac® P 2220	90/10	•		49,5-53,5	30-55	58				8'	High cross-link density, good surface hardness, suitable for dryblend matt with **Uralac® P 4800**
Architectural	Uralac® P 5200	93/7			32-38	35-55	65			15'		Good flow-cure balance, high Tg and good exterior durability
	Uralac® P 5201	93/7		•	32-38	35-55	65			15'		Good flow-cure balance, high Tg and good exterior durability
	Uralac® P 5301	93/7		•	32-38	35-55	64				15'	Excellent flow, high Tg, high degassing limit
	Uralac® P 6300	93/7			33-37	65-105	69				12'	Architectural grade with good flow and high Tg
	Uralac® P 6336	93/7			31-35	40-80	69				10'	Good flow-cure balance, very high Tg and good exterior durability
	Uralac® P 6701	93/7		•	32-38	26-46	59	15'				Low temperature, fast cure combined with good flow, suitable for textured
Superdurable	Uralac® P 6620	93/7			30-36	10-20	62				15'	Superdurable grade, high degassing limit with good flow
	Uralac® P 5500	90/10			46-54	37-67	60				15'	Superdurable type, high TGIC content, limited flexibility but good adhesion

Uralac® resins for Isocyanate cure

Hydroxylated Powder Coating Resins	PRODUCT NAME	RATIO PE / NCO		TRIBO*	HYDROXY VALUE TM-2432	VISCOSITY TM-2727	Tg TM-2076	CURE CYCLE 160°C**			CURE CYCLE 200°C**	REMARKS
Industrial	Uralac® P 1630	85/15			27-33	35-95	62				10'	Low OHV resin, excellent flow, good flexibility and good yellowing resistance
Architectural and Industrial	Uralac® P 1420	80/20		•	40-50	25-75	53				8'	Architectural and industry uretdion type
	Uralac® P 6504	80/20			35-45	42-62	64				10'	Robust industrial OH resin
	Uralac® P 4215	80/20			38-48	25-65	57				15'	Excellent flowing resin with good chemical resistance and high Tg
	Uralac® P 5504	80/20			38-45	35-60	58				10'	Standard architectural uretdion type, excellent flow
Superdurable	Uralac® P 1675, OSM	86/14			28-32	15-45	54				10'	Superdurable grade, low OHV resin, especially designed for One shot matte coatings with **Uralac® P 1625**
	Uralac® P 1680	85/15			25-35	10-30	55				15'	Superdurable grade, low OHV resin, especially designed for low crosslinker content and robust properties
	Uralac® P 1550	80/20			38-45	12-27	57				15'	Superdurable grade, high OHV resin, especially designed for hyperdurable combination with fluoropolymers
	Uralac® P 1580	70/30			75-90	8-28	52				15'	Superdurable type, anti-graffiti, very good flow, suitable for ACE
	Uralac® P 1625, OSM	45/55			220-240	20-30	51				10'	Superdurable grade, high OHV resin, especially designed for One shot matte coatings with **Uralac® P 1675**

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Uralac® resins for Epoxy resin cure

Carboxylated Powder Coating Resins Polyester / Epoxy	PRODUCT NAME	RATIO PE / EPOXY	TMA-FREE	SUITABLE FOR DRYBLEND	TRIBO*	ACID VALUE TM-2400	VISCOSITY TM-2727	Tg TM-2076		CURE CYCLE 160°C**	CURE CYCLE 180°C**	CURE CYCLE 200°C**	REMARKS
80/20	Uralac® P 5881	80/20	•	•	•	18-23	60-110	57				10'	Resin with good flow and flexibility, also suitable for low gloss coatings (dry blends), easy to matte
75/25	Uralac® P 4810	75/25	•	•	•	24-28	36-71	57		15'			Low temperature, low acid value hybrid resin, also suitable for low gloss coatings
70/30	Uralac® P 2681	70/30	•		•	32-38	25-65	64				8'	High Tg, very good flow, good price performance resin for general purpose
	Uralac® P 3450	70/30	•			34-40	40-70	55		15'			Fast curing 70/30 hybrid, suitable for structure
	Uralac® P 3775, EasyCure	70/30	•		•	34-38	15-45	58		12'		6'	Fast cure, non-blooming, high flexibility
	Uralac® P 4135	70/30	•		•	32-38	20-40	57			10'		Good price performance resin for general purpose, very good flow
	Uralac® P 4235	70/30	•		•	33-37	20-60	52			15'		Good price performance resin for general purpose, good appearance, suitable for textures
	Uralac® P 5070	70/30	•			32-38	22-39	52			10'		Fast cure hybrid resin for general purpose, good yellowing resistance
	Uralac® P 5071	70/30			•	32-38	22-39	52			10'		Tribo enhanced version of **Uralac® P 5070**
	Uralac® P 5077	70/30	•			33-37	25-65	59			15'		Good flowing hybrid with high Tg and good flexibility
	Uralac® P 5741	70/30	•			33-37	10-50	54			10'		Robust 70/30 resin, suitable for mix crosslinker curing with HAA
	Uralac® P 6777	70/30	•		•	32-38	17-37	55		15'		4'	Low temperature, fast cure with good flow and non-yellowing resistance
	Uralac® P 7630, Corres	70/30	•			34-38	20-60	55			12'		Hybrid resin, same corrosion protection as epoxy primer, good flexibility
60/40	Uralac® P 3765	60/40			•	49-53	20-50	58			10'		Medium cure, non-blooming, good appearance
	Uralac® P 5263	60/40			•	48-58	16-46	57				10'	Good flowing standard hybrid resin
	Uralac® P 5266	60/40			•	48-58	13-33	50		15'			Low temperature, fast cure, good flexibility
	Uralac® P 5268	60/40			•	48-58	16-46	55			10'		Faster curing **Uralac® P 5263** type, gas oven stability
	Uralac® F 5340, Food grade	60/40				48-58	7-27	50			15'		Non-technical grade, slow cure and external catalyst needed, suitable for FDA applications
	Uralac® P 6047	60/40				46,5-52,5	15-35	53			12'		Good flowing hybrid resin with good pigment wetting and flexibility
	Uralac® P 765, HiTone	60/40				48-58	10-60	60				10'	High Tg version of **Uralac® P 760**
55/45	Uralac® P 6055	55/45				55-65	22-52	59				10'	Excellent flow and suitable for metallic applications
50/50	Uralac® P 3050, EasyCure	50/50		•		70-85	20-50	67		3'/150°C			High Tg grade for good storage stability, low or fast cure, Suitable for heat sensitive substrates
	Uralac® P 3150, EasyCure	50/50				80-90	10-50	63		30'/135°C, 6'/160°C		4'	Low bake or fast cure resin with high Tg for indoor applications
	Uralac® P 3250, EasyCure	50/50		•		70-85	7-17	53		30'/135°C, 6'/160°C		4'	Low bake, suitable for low temperature curing systems and heat sensitive substrates
	Uralac® P 5125	50/50			•	70-80	45-75	63				8'	General purpose type, good flow, good matting properties and good storage stability
	Uralac® P 5127	50/50				69-79	18-38	58			10'		General purpose type, good flow and good storage stability
	Uralac® P 5128	50/50			•	69-79	18-38	58					Tribo enhanced version of **Uralac® P 5127**
	Uralac® P 5981	50/50			•	69-79	18-38	58		15'			High reactivity, fast cure version of **Uralac® P 5127**

* Tribo chargeable when processed under controlled conditions
** Total oven time

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.

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

Crelan® Isocyanate Crosslinkers

The Crelan® products from Covestro are a range of high – performance crosslinkers, used in polyurethane powder coatings.

The Crelan® isocyanates are used primarily in polyester/ polyurethane systems but also in Fluorocarbon polyurethane and OH-Acrylic/ polyurethane systems. The Crelan® products are manufactured in world – class facilities. They are available as small, almost colorless flakes which are easy to handle.

Crelan® product line for powder isocyanate crosslinkers

Crelan® Blocking agent – free crosslinker	AVAILABILTY EMEA	APAC	NMA	BASIS	NCO [%] (APPROX.)	EEW (APPROX.)	CURE CYCLE**	Tg-VALUE		REMARKS
EF 403	X	X	X	IPDI	13,5	310	10'-15' 200 °C	45-55 °C		**This blocking agent** – free crosslinker is based on uretdione chemistry. It emits neither blocking agents or water during the crosslinking reaction. When combined with suitable hydroxyl – bearing polyester resins, the low – melt viscosity of the hardener results in outstanding leveling, good outdoordurability, chemical resistance and gloss, in both clear and pigmented coatings. The EF 403 is very suitable for OSM-PU-systems.

Crelan® Caprolactam – blocked crosslinkers	AVAILABILTY EMEA	APAC	NMA	BASIS	NCO [%] (APPROX.)	EEW (APPROX.)	CURE CYCLE**	Tg-VALUE		REMARKS
VP LS 2256	X	X	X	IPDI	15,0	280	10'-15' 180 °C	46-58 °C		**This product is a caprolactam** – blocked aliphatic – based isocyanate. Coatings based on this product are characterized by their excellent flow properties, excellent outdoordurability and high gloss in combination with good anti – corrosive properties in both clear and pigmented coatings. VP LS 2256 is very suitable for OSM-PU-systems.
UI	X	X		IPDI	11,5	365	10'-15' 190 °C	60-65 °C		**This specialty product is based on a caprolactam** – blocked aliphatic isocyanate. The product is charaterized by excellent flow properties, high flexibility, high gloss and good stability in outdoor weathering. UI is also used to improve the flexibility or chemical resistance of hybrid powder coatings when added in low concentrations to react with the rest OH-value of the polyester resin.
NI-2			X	IPDI	15,0	280	10'-15' 190 °C	55-60 °C		**This product is a caprolactam** – blocked aliphatic – based isocyanate which provides coatings with smooth, wet – look appearance at low film builds. NI-2 is developed for powder coatings with an excellent flow and corrosion resistance.
NW-5			X	H12MDI	12,7	333	10'-15' 170 °C	48-58 °C		**This product is based on H12MDI** and provides the formulator with smooth, higher performing films that require a lower deblocking temperature. NW-5 is a more reactive isocyanate with an out standing performance in flexibility, outdoor durability chemical resistance and corrosion properties.

** Total oven time, cure cycle is an indication and based on non catalysed resins, cure cycles can be shortend by the addition of a tin catalyst

Covestro Deutschland AG
Kaiser-Wilhelm-Allee 60
51373 Leverkusen
Germany

www.covestro.com

[1] Please see the "Guidance on Use of Covestro Products in a Medical Application" document.

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