

# Advanced polymer technologies for can and coil.





### Building a circular future, together.

The demand for more circular solutions is rising at a faster pace than ever before as the world collectively strives to tackle today's global challenges. Climate change, population growth, urbanization, digitalization and mobility are pushing players from every sector to find more sustainable solutions and to lay the foundations for climate neutrality by driving a Circular Economy. The challenge is not only to create these circular solutions, but also to maintain quality, durability and productivity.

Innovation is key to satisfying these demands and creating added value for customers, society and the environment by turning targets into realities. At Covestro, our long-standing expertise in aliphatic and aromatic polyisocyanates and more sustainable resins goes handin-hand with our purpose to constantly push boundaries in the search for future-oriented solutions. Through joint solutions, alternative raw materials, innovative recycling, and harnessing renewable energy, we're enabling coatings and adhesives producers to meet the circular challenge, here and now. We're expanding our portfolio to include bio-based or recycled raw materials in coatings, adhesives, and specialty areas from cosmetics to textiles and 3D printing. Thanks to our mass balancing approach, we're helping close the loop by gradually replacing fossil fuels with ISCC-certified renewable resources. Our drop-in solutions ensure the high quality, consistent performance and easy processing that keep your production running smoothly. And we're constantly working to provide the global support, facilities and supply chain security you need to forge yet more circular innovations in infrastructure, automotive, furniture and more.

Material solutions can help turn circular targets into realities. Let's make the world a brighter place, together.





### Can and coil.

Based on our strong collaborative partnerships with customers and our unique understanding of materials science and applications, we provide creative solutions for metal coating markets worldwide. Inspired breakthroughs that meet our customers' challenges and improve people's lives – now and for many generations to come.

We have long expertise in materials science, applications and in the value chain for metal packaging (can) and pre-coated metal (coil). Our portfolio covers a diverse range of resins and crosslinkers, from solventborne to waterborne, for pre-coated metal applications like construction and facades, and for metal packaging, including interior (food) and exterior can applications. Our broad technology expertise spans polyesters, acrylics, alkyds, and urethane chemistries. Our customer partnerships allow us to efficiently develop new products and improve existing ones to meet your toughest requirements, and do this in a way that's more sustainable. For instance, improved sustainability with enhanced properties like improved durability for facade panels, preferably using more sustainable and renewable building blocks. Offering tailor-made BPA-NI solutions for interior food cans. Sustainability is our main driver, making our products future-proof and prepared for the challenges ahead of us.

### Product Selection Guide Can coating raw materials

### Product Selection Guide Coil coating raw materials

	Chemistry	Remark	Product		Chemistry	Remark	Product
	[	High flexibility Universal	Uralac <sup>®</sup> SN833 S2-55 ND Uralac <sup>®</sup> SN842 S2-60 ND	г	HMW polyester	Flexible, adhesion &	Uralac® SH970 S2E5-40 ND Uralac® SH973 S1E5-40
	Polyester	General line High solids	Uralac <sup>®</sup> SN808 S2G3-50 ND Uralac <sup>®</sup> SN852 S2F-60 ND		Corrosion resistance	Uralac <sup>®</sup> SH974 S1E5-40	
White base coat	HMW polyester	Universal DRD	Uralac <sup>®</sup> SN885 S2G3-60 ND Uralac <sup>®</sup> SH976 S1E5-40		Polyester	corrosion resistance Flexible primer	Uralac® SN833 S2-55 ND
	Acrylated polyester	Water-based can	Uradil™ SZ260 G3-65		Г	Superdurable – RUV-3	Uralac <sup>®</sup> SN804 S2-65 ND
ſ	Special alkyd resin	General line	Uralac <sup>®</sup> AN625 S1-60		_	Superdurable – RUV-4 Standard durable – RUV-3	Uralac <sup>®</sup> SN806 S2G3-66 ND Uralac <sup>®</sup> SN831 S2G3-60 ND
Overprint varnish	Epoxy ester	Yellowing resistance	Uranox™ EE3 S2-50 ND Uranox™ EE4 S2-50 ND	Topcoat	Polyester	Semi-superdurable – RUV3–RUV4 Standard durable – RUV-3	Uralac <sup>®</sup> SN837 S2G3-65 ND Uralac <sup>®</sup> SN844 S2G3-60 ND
	Polyester	High solids EE3 Flexiblity	Uranox™ EE7 S2G3-57 ND Uralac <sup>®</sup> SN881 GG4-55		_	High yield – RUV2–RUV-3 Standard durable,	Uralac® SN857 S1G3-70 Uralac® SN885 S2G3-60 ND
	_	High solids	Uralac® SNR05 S2G3-65 ND			TIEXIDIE - RUV-3	
	Polyester	Hardness, chemical resistance	Uralac <sup>®</sup> SN856 S2G3-50 ND Uralac <sup>®</sup> SN898 S2G3-55 ND	Domestic appliances	Polyester	Flexible Good in-combination isocvanate	Uralac <sup>®</sup> SN833 S2-55 ND Uralac <sup>®</sup> SN833 S2-55 ND Uralac <sup>®</sup> SN831 S2G3-60 ND
Interior – BPA-NI		Adhesion and reactivity DRD	Uralac <sup>®</sup> SH973 S1E5-40 Uralac <sup>®</sup> SH976 S1E5-40				
l	HMW polyester	Universal Easy open ends	Uralac <sup>®</sup> SH979 S1F-45 Uralac <sup>®</sup> SH980 S1F-50	Backing coat	Polyester	With foam adhesion Without foam adhesion	Uralac <sup>®</sup> SN805 S2G3-65 ND Uralac <sup>®</sup> SN989 S1F-60
		Chemical resistance, high Tg	Uralac <sup>®</sup> SH992 S1-45 Uralac <sup>®</sup> SH993 S1-45				
				Blocked polyisocyanate	IPDI – MEKO blocked	Hardness & chemical	Desmodur® BL 3175
Specialties	Epoxy phosphate ester Polyester	Adhesion water-based Flexibiizer	Uradil™ DD80 Uralac® SN865 S2-75 ND	crosslinkers	HDI – DMP blocked	Excellent thermal yellowing resistance	Desmodur <sup>®</sup> PL 350
ſ	HDI – MEKO blocked	Flexibility and sterilization	Desmodur <sup>®</sup> BL 3175	L	PDI – DMP blocked	Partially bio-based	Desmodur <sup>®</sup> eco BL 7175
Blocked polyisocyanate crosslinkers	IPDI – Caprolactam blocked	Food contact (FCN 695)	Desmodur <sup>®</sup> BL 2078/2				
	HDI – Caprolactam blocked	Water-based, flexible	Baybond® XL 3674				

### Can

	SUPPLY FORM		VISCOSITY (Pa.s) 23°C	Y C	Tg (℃)		ACID VALU	E		FLEXIBILIT	TY ST	ERILIZATIO	N	SIZING		CLEAR VARNISH	3-P GE	IECE CAN NERAL LI	IS & NE	TUBES	
Solventborne saturated polyester and alkyd resins		SOLID CONTENT 9	6	MOLECULAR WEIGHT (Mn)		OH-VALUE (APPROX.)			MAIN FEATURES		HARDNESS	6 W	ET ON WE	T.	WHITE BAS COAT	E	INTERIOR BPA-NI	N A	AEROSOLS	; E	B&B CANS
Uralac® AN625 S1-60	S1	60	3.7–5.2	3,000	0	86	5–10	Short oil alkyd resin based on saturated fatty acids for overprint varnish	OPV, yellowing resis. wet on wet	2	5	5	5			•••	••	•••			
Uralac® AN637 S2-60 ND	S2 ND	60	2.5-4.0	4,500	16	17	2–10	Short oil alkyd resin based on versatic acids for overprint varnish	OPV flexibility	5	2	5	5			•••		•••			
Uralac® SN805 S2G3-65 ND	S2G3 ND	65	2.6–3.6	3,000	0	110	4–8	Saturated polyester resin for general purpose	High solids	2	3	5	1		••		••	•••			
Uralac® SN808 S2G3-50 ND	S2G3 ND	50	2.0–2.8	5,200	28	40	2–5	Saturated polyester resin for white base coat	General Line	4	4	5	2		•••			•••			
Uralac® SN825 M1-50 ND	M1 ND	50	4.2–5.6	5,000	50	10	8–10	Saturated polyester resin for aerosols	Adhesion on aliminium	4	5	5	2		•••	••			•••		
Uralac® SN833 S2-55 ND	S2 ND	55	3.6-4.6	6,000	32	22	3–5	Saturated polyester resin for flexible white base coat	Deep draw, flexibility	5	3	5	2		•••			•••	••		
Uralac® SN842 S2-60 ND	S2 ND	60	12.5–16.5	4,000	25	25	5–10	Saturated polyester resin for general purpose	Flexibility, block resistance	5	3	5	3		•••			•••	••	•••	
Uralac® SN852 S2F-60 ND	S2F ND	60	4.5-6.5	4,300	21	45	4–7	Saturated polyester resin for white base coat	Good compatibility BPA-NI	4	3	5	2		•••		••	•••			
Uralac® SN856 S2G3-50 ND	S2G3 ND	50	1.4–2.0	4,000	58	55	0–5	Saturated polyester resin for interior BPA-NI	Hardness chemical BPA-NI	3	5	5	2		••	••	•••	•••			
Uralac <sup>®</sup> SN881 GG4-55	GG4	55	1.1–1.3	4,500	16	25	0-4	Saturated polyester resin for overprint varnish	OPV, flexibility, wet on wet	5	2	5	5			•••		•••	••		
Uralac <sup>®</sup> SN885 S2G3-60 ND	S2G3 ND	60	5.5-8.5	5,000	29	20	1–4	Saturated polyester resin for white base coat	General Line	4	3	5	2		•••	•	••	•••	•		
Uralac <sup>®</sup> SN898 S2G3-55 ND	S2G3 ND	55	1.6–2.1	5,000	7	24	0–3	Saturated polyester resin for interior BPA-NI	Flexibilizer BPA-NI mix resin	5	2	4	2				•••	•••			
Uralac <sup>®</sup> SN908 S2E5-50 ND	S2E5 ND	50	1.8–2.6	5,000	51	24	3–8	Saturated polyester resin for aerosols	Good adhesion on aluminium	3	5	5	1	•	•••			•	•••	•	
Uralac® SN908 S1E5-50	S1E5	50	1.8–2.6	5,000	51	24	3–8	Saturated polyester resin for aerosols (not intentionally added naphtalene)	Good adhesion on aluminium	3	5	5	1	•	•••			•	•••	•	
Uralac® SH970 S2E5-40 ND	S2E5 ND	40	3.5–4.5	15,000	67	7	0-4	High molecular weight saturated polyester BPA-NI	Mix resin high Tg	5	5	5	1	•			•	••	••		
Uralac <sup>®</sup> SH973 S1E5-40	S1E5	40	3.8–4.7	20,000	65	7	8–10	High molecular weight saturated polyester BPA-NI	Reactive	5	5	5	1	•			•••	••			
Uralac <sup>®</sup> SH976 S1E5-40	S1E5	40	3.5-4.5	15,000	40	7	0–3	High molecular weight saturated polyester BPA-NI	Flexible BPA-NI compatibility	5	4	5	1	•••	••		•••	•••		•	
Uralac <sup>®</sup> SH979 S1F-45	S1F	45	3.5–5.0	11,000	55	7	5–9	High molecular weight saturated polyester BPA-NI	Universal BPA-NI	5	5	5	1		••		•••	•••			
Uralac <sup>®</sup> SH980 S1F-50	S1F	50	1.7–2.3	9,000	14	20	0–3	High molecular weight saturated polyester BPA-NI	Flexible BPA-NI	5	3	4	3			•	•••	•••			
Uralac <sup>®</sup> SH992 S1-45	S1	45	1.0–1.8	8,000	93	10	0–3	High molecular weight saturated polyester BPA-NI	Chemical resistance BPA-NI	5	5	5	1				•••	•••			
Uralac <sup>®</sup> SH993 S1-45	S1	45	2.4–3.3	10,000	93	4	0–3	High molecular weight saturated polyester BPA-NI	Chemical resistance BPA-NI	5	5	5	1				•••	•••			

### Can

	SUPPLY FORM		VISCOSIT (Pa.s) 23°C	( ;	T <sub>g</sub> (°C)		ACID VALU	E	F	LEXIBILIT	Y STE	RILIZATIC	N	SIZING	,	CLEAR VARNISH	3-F Gl	PIECE CAN ENERAL L	√S & .INE	TUBES	
Water dilutable (acrylate saturated polyester resi	ed) n	SOLID CONTENT	%	MOLECULAR WEIGHT (Mn)	2	OH-VALUE (APPROX.)			MAIN FEATURES	ŀ	IARDNESS	W	ET ON WET	r V	/HITE BASE COAT		INTERIOR BPA-NI		MONOBLOC AEROSOLS	E	3&B CANS
Uradil™ SZ250 M1-40	M1	40	2.0–9.0	3,000	31	40	50-55	Acrylic modified saturated polyester resin for B&B	Good retort, low co-solvent	4	5	5	3		•	•••					•••
Uradil™ SZ260 G3-65	G3	65	4.0–11.0	2,500	24	17	57–63	Acrylic modified saturated polyester resin for B&B	Good flow	4	5	3	3		•••	••					•••
Acrylic modified saturat polyesters	ed																				
Uralac® SC890 S2G3-50 ND	S2G3 ND	50	0.8–1.0	3,500	33	35	45–50	Acrylic modified saturated polyester resin	Good flow	4	5	4	2		•••						•••
Epoxy esters																					
Uranox™ EE3 S2-50 ND	S2 ND	50	18–28	6,000	30		0–5	Epoxy ester resin for overprint varnish	OPV, Good yellowing resistance	3	4	5	5			•••		•••			
Uranox™ EE4 S2-50 ND	S2 ND	50	2.2-2.8	6,000	13		0–4	Epoxy ester resin for overprint varnish	OPV, flexibility	4	3	5	5			•••		•••			
Uranox™ EE7 S2G3-57 ND	S2G3 ND	57	2.6-4.1	5,400	18		0-4	Epoxy ester for high solids overprint varnish	OPV, higher solids EE3	3	3	5	5			•••		•••			
Specialties																					
Uradil™ DD80		73	6.9–10.1				45–55	Epoxy phosphate ester for water-based coatings	Adhesion promoter water-based	4	5	5			••	••			••		•••
Uralac® SN865 S2-75 ND	S2	75	6.0–7.0	4,500	-17	22	3–7	Saturated polyester resin to obtain a more flexible coating	Flexibilizer	5	1	3	2	•	•			•	•		
Crosslinkers																					
Desmodur® BL 3175	S1	75	2–4					HDI crosslinker blocked with MEKO	Flexible	5	5	5		•	•••	•••		•••	•		•
Desmodur® BL 2078/2	S1	60	1.7					IPDI crosslinker blocked with caprolactam	Food contact (FCN 695)	3	5	5		•	•••	••	•••	•••	••		•
Desmodur® BL 3272	F	72	2.7					HDI crosslinker blocked with caprolactam	High film thicknness	5	5	5		••	•••	•••		•••	•		•
Baybond® XL 3674	W	30	< 1					Waterborne dispersion HDI crosslinker blocked with caprolactam	Water-based, flexible	5	5	5		••	•••	•••		•••	•		••





Remark 1 = not good, 5= excellent

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### Coil

	FORM		VISCOSI I Y (Pa.s) 23°C		Tg (°C)	Δ	ACID VALUE	Ξ	DESCRIPTION			SUBSTRATE	I	HARDNESS	6	EXTERIOR	ŀ	APPLIANCES	З В	ACKING COAT
Solventborne resins		SOLID CONTENT 9	6 V	10LECULAR VEIGHT (Mn)	R )	OH-VALUE (APPROX.)	S	TRUCTURI	E		MAIN FEATURES		FLEXIBILITY	W	EATHERABILI	TY	TOPCOAT INTERIOR		PRIMER	
Uralac® SH970 S2E5-40 ND	S2E5 ND	) 40	3.5–4.5	15,000	67	7	0–4	L	High molecular weight saturated polyester for primer coating		Corrosion protection	Steel, HDG	5	5	2		•	•	•••	
Uralac® SH973 S1E5-40	S1E5	40	3.8–4.7	20,000	65	7	8–10	SB	High molecular weight saturated polyester for primer coating		Corrosion protection	Steel, HDG	5	5	2		•	•	•••	
Uralac® SN989 S1F-60	S1F	60	3.5–7.0	4,500	51	23	1–4	L	Standard molecular we saturated polyester for primer coating	ght	Corrosion protection	Steel, HDG	3	4	2		•	•	•••	••
Uralac <sup>®</sup> SN804 S2-65 ND	S2 ND	65	4.2–4.7	3,000	23	35	0–4	SB	Saturated polyester re for topcoat superdural	in e	Superdurable	Steel, HDG, alu	3	4	5	•••	••			
Uralac® SN805 S2G3-65 ND	S2G3 NE	0 65	2.6–3.6	3,000	0	110	4–8	В	Saturated polyester re for topcoat with high re and for back coating	in ctivity	High solid	Steel, HDG, alu	2	4	4	••	•			•••
Uralac® SN806 S2G3-66 ND	S2G3 NE	66	1.8-3.0	3,200	14	37	0–1	SB	Saturated polyester res for outdoor durable top	n coat	Superdurable	Steel, HDG, alu	3	4	5	•••	••			
Uralac® SN830 S2-60 ND	S2 ND	60	4.0-4.7	4,500	26	28	3–6	L	Saturated polyester re topcoat domestic app	in for ances	Domestic appliance	HDG, alu	4	4	4	•••	•	•••	••	
Uralac® SN831 S2G3-60 ND	S2G3 NE	0 60	2.7–3.6	5,000	25	32	2–5	SB	Saturated polyester resin for topcoat		All round	Steel, HDG, alu	4	4	4	•••	•		••	
Uralac® SN833 S2-55 ND	S2 ND	55	3.6-4.6	6,000	32	22	3–5	L	Saturated polyester resin for flexible topco domestic appliances	t and	Flexible	HDG, alu	4	3	3	••	••	•••	••	
Uralac® SN837 S2G3-65 ND	S2G3 NE	0 65	4.0-6.0	4,000	23	40	0–3	SB	Saturated polyester resin for flexible and hi durable coatings	h	Flexible	HDG, alu	4	3	4	•••	••			
Uralac® SN844 S2G3-60 ND	S2G3 NE	60	2.8–3.2	4,000	19	32	0–4	SB	Saturated polyester resin for topcoat		Flex, aging, cold flex	Steel, HDG, alu	4	4	3	•••	•		•	
Uralac <sup>®</sup> SN857 S1G3-70	S1G3	70	2.7–3.4	2,500	8	50	2–5	L	Saturated polyester resin for high yield top	pat	High yield, flex	Steel, HDG, alu	4	2	3	••	••			
Uralac® SN865 S2-75 ND	S2	75	6.0–7.0	4,500	-17	22	3–7	L	Saturated polyester resin for blending to of a more flexible coating	ain	Flexibilizer		5	1	3	•	•	•	•	•
Uralac® SN867 S2E5-60 ND	S2E5 ND	60	4.2-4.8	6,000	-10	15	0–3	L	Saturated polyester resin for blending to of a more flexible coating	ain	Flexibilizer		5	1	3	•	•	•	•	•
Uralac® SN885 S2G3-60 ND	S2G3 NE	60	5.5–8.5	5,000	29	20	1–4	L	Saturated polyester resin for flexible topco	t	Good adhesion alu	Alu	5	3	3	•••	••		•	

## Coil

	SUPPLY FORM		(Pa.s) 23°C	Y C	T <sub>g</sub> (℃)		ACID VA	LUE	DESCRIPTION		SUBST	RATE	ŀ	HARDI	NESS
Waterborne resins		SOLID CONTENT 9	% \\	MOLECULA WEIGHT (Mr	R I)	OH-VALUE (APPROX.)		STRUCTU	RE	MAIN FEATURES			FLEXIBILITY		WE
Uradil™ SZ250 M1-40	M1	40	2.0–9.0	3,000	31	40	50–5	5 SB	Waterborne saturated polyesters for topcoat and primer applications	Corrosion protection			3	3	í
Crosslinkers															
Desmodur® BL 3175	S1	75	3.3						HDI crosslinker blocked with MEKO	Flexible			5	4	
Desmodur <sup>®</sup> BL 4265	S1	65	11						IPDI crosslinker blocked with MEKO	Hardness & chemical resistance			4	5	,
Desmodur <sup>®</sup> PL 350	M1	75	4.3						HDI crosslinker blocked with DMP	Excellent thermal yellowing resistance			5	4	ł
Desmodur® eco BL 7175	M1	75	10						PDI crosslinker blocked with DMP	Partially bio-based, bio-content approx. 32%* in supply form			5	4	ł

\*14C measurement according to ASTM-D6866 standard

### Abbreviations

DMP

branched resin
dibasicester
methoxypropylacetate
propyleneglycol monomethylether
butylglycol
dipropylene glycol monomethylether
linear resin
mixture of solvents
naphthalene depleted
solvent naphta 100
solvent naphta 150 ND
solvent naphta 200 ND
slightly branched resin
water
hexamethylene diisocyanate
isophorone diisocyanate
pentamethylene diisocyanate
methylethylketoxime

dimethylpyrazol





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

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