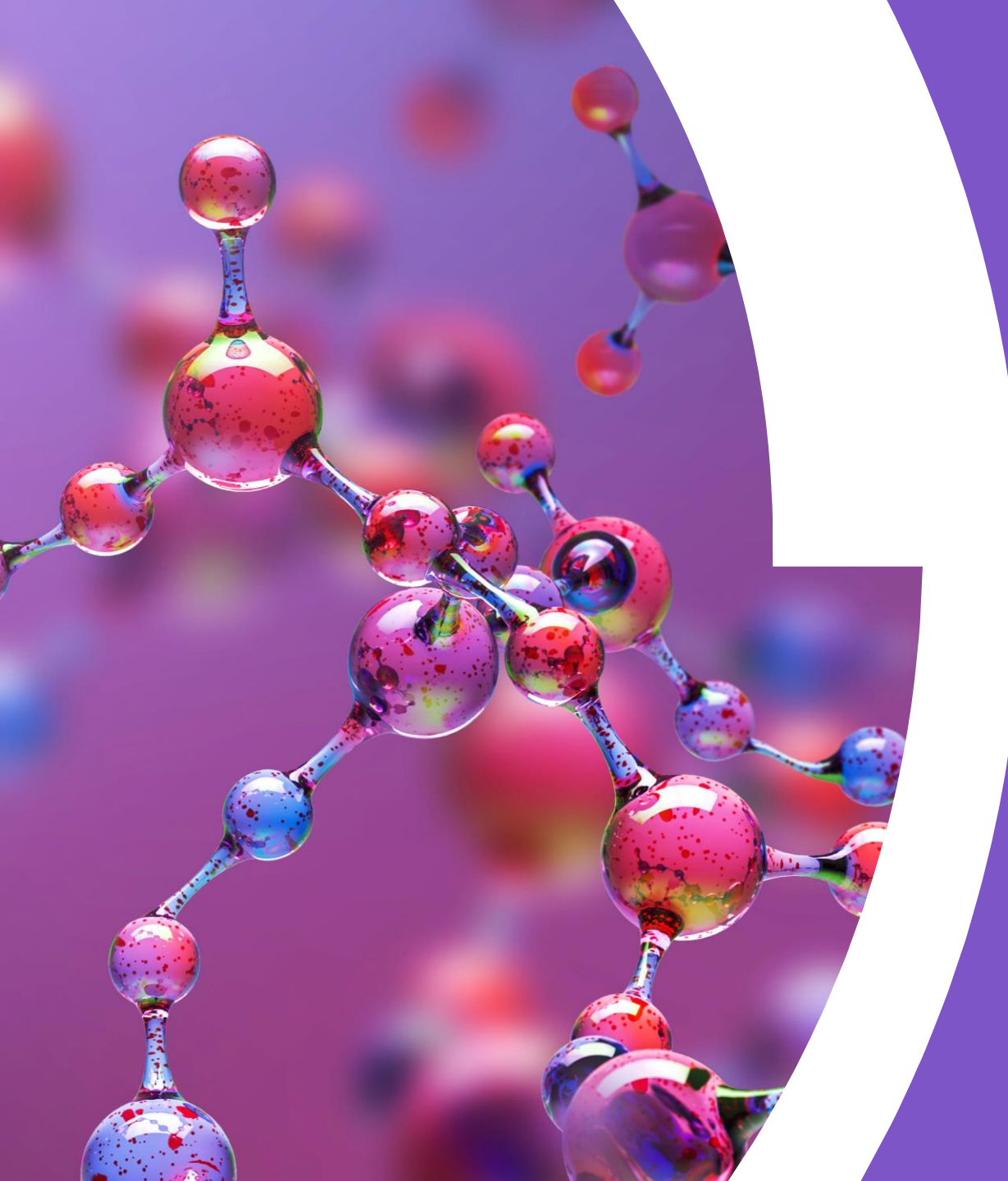




#STATUSNEXT



Raw materials for high performance adhesives

A broad portfolio for adhesive
formulations



“We will
be fully
circular”

Towards a Circular Economy

Covestro transforms its activities



**Joint
solutions**



**Innovative
recycling**



**Renewable
energy**



**Alternative raw
materials**

Extract raw materials, produce, consume, throw away: current business models often work like a one-way street. But this linear economy of ‘take, make, waste’ production and consumption isn't compatible with the challenges the world faces today.

We must find new ways of putting our world's limited resources to good use, making circularity our new guiding principle: viewing [used products](#) as a resource and recycling everything we can along the value chain.

Circularity also means exploring alternative sources of sustainable raw materials, such as [biomass](#). Overall, companies need to design efficient cycles that use [renewable energy](#), enabling a truly circular economy.

With our 4 strategic pillars, we are directing our activities towards climate neutrality, fossil independency and reducing plastic waste. With this, we are transforming our industry towards a circular economy.

Availability of raw materials promoting alternative feedstock utilization is increasing

Already today, we can offer for a broad range of our raw materials portfolio alternatives that are reducing the dependency on fossil resources by promoting the use of non-fossil feedstocks.

Please contact your Covestro sales representative for further details and available options.

Feedstock origin



Isocyanates

-  PDI
-  IPDI
-  TDI
-  MDI

Polyols

-  Polyester
-  Polyether

-   Aliphatic
-  Aromatic

 Crosslinker

 Resins

-   PU-dispersions
-   PU-prepolymers
-   Acrylic disp.
-   Polyester resins

ADH Formulation

Additives

Extender and pigments

Organic solvents or water

Adhesive polymer backbone

Chain-of-custody model:



Segregation: Bio-content measurable via $^{12}\text{C}/^{14}\text{C}$ method



Mass Balance: ISCC PLUS certified following the trace-the-atom option

Global reach with regional set-up

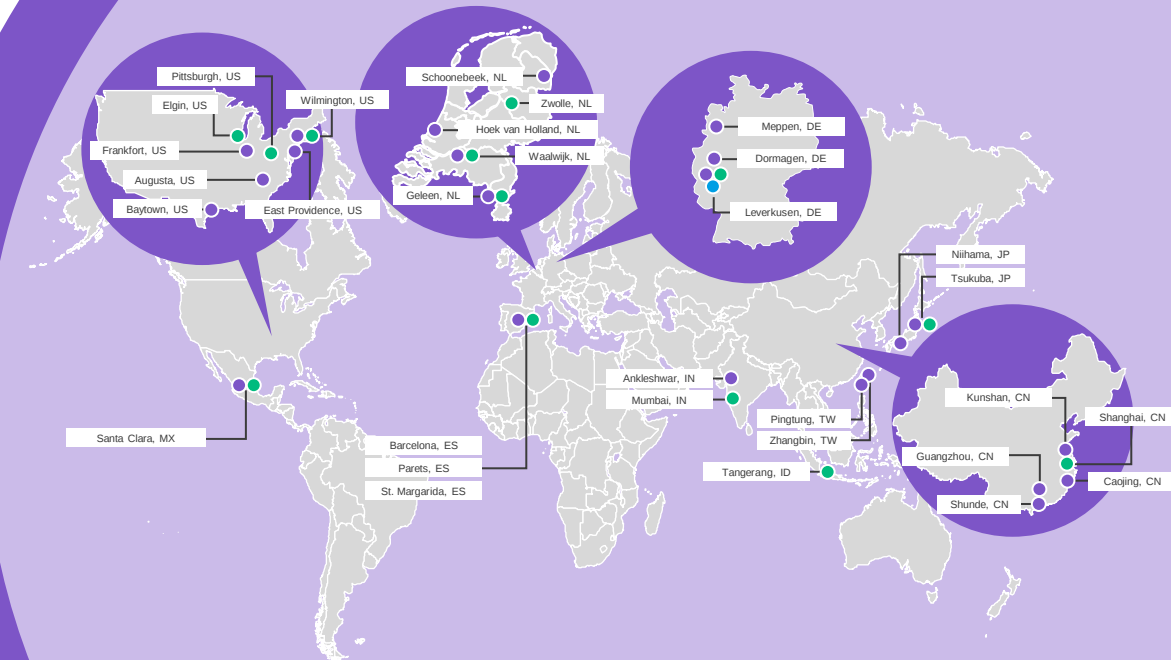
Safeguarding your supply with our global production network

Covestro maintains production facilities across three main regions to serve customers:

- EMLA (Europe, Middle East, Latin America, Africa)
- NA (North America: Canada, Mexico, United States)
- APAC (Asia and Pacific)



Product availability may vary by region where Covestro is represented. For availabilities of specific products in your region, please refer to our [Product Finder](#) or contact your Covestro sales representative.



- Production Site
- R&D/Application Development Site
- Global Headquarters

Portfolio overview



Raw materials for solvent-borne, solvent-free & hot melt adhesives*

Polyisocyanates

Desmodur®

Polyester polyols

Baycoll®, Desmophen®, NeoRez®

Polyether polyols

Acclaim®, Desmophen®

Chlorinated rubber

Pergut®

Polyurethane resins

Desmomelt® U

Acrylic resins

NeoCryl® B

Polyurethane prepolymers

Desmodur® E

Silane-terminated polyurethanes

Desmoseal® S



Raw materials for water-borne adhesives*

Polyurethane dispersions

Dispercoll® U, NeoRez®

Polyacrylic dispersions

Discovery®, NeoCryl®

Polychloroprene dispersions

Dispercoll® C

Polyisocyanates

Bayhydur®, Desmodur®

Polycarbodiimides

Desmodur®

Nano-silica dispersions

Dispercoll® S

Raw materials for solvent-borne, solvent-free and hotmelt adhesives

Toolbox for the formulation of
high-performance adhesives



Building blocks



Crosslinkers



Resins

Aliphatic polyisocyanates for reactive solvent-borne & solvent-free adhesives

Monomeric diisocyanates are used as building blocks for polyurethane dispersions and prepolymers. HDI, H₁₂MDI, IPDI and PDI deliver on special performance requirements such as UV- or hydrolytic stability.

Monomeric aliphatic products	Type	NCO content [wt.%]	Viscosity @ 25°C [mPa*s]	Comments
<u>Desmodur® H</u>	HDI	≥49.7	~3	For polyurethane polymers with higher flexibility and weathering resistance
<u>Desmodur® CQ PDI</u>	PDI	≥54.2	~10	PDI building block (~68% alternative share via bio-based carbon count; ¹² C/ ¹⁴ C measurable) for polyurethane polymers with higher flexibility and weathering resistance
<u>Desmodur® I</u>	IPDI	≥37.5	~10	For polyurethane polymers with optical clarity, higher hardness and chemical resistance
<u>Desmodur® CQ I</u>	IPDI	≥37.5	~10	IPDI building block promoting the use of alternative feedstocks (~55% alternative share attributed via the mass balance approach)
<u>Desmodur® W</u>	H ₁₂ MDI	≥31.8	~30	For polyurethane polymers with optical clarity, weathering resistance and excellent mechanical properties

Aliphatic polyisocyanate crosslinkers for reactive solvent-borne & solvent-free adhesives

PDI & HDI based crosslinkers for high performance 2K adhesive formulations with UV stability and excellent resistance properties. Desmodur® ultra grades contain <0.1% residual monomer and enable adhesive manufacturers to offer improved industrial hygiene standards to their customers.

Low monomer PDI based crosslinkers	Non-volatile content [wt.%]	NCO content [wt.%]	Viscosity @ 23°C [mPa*s]	Functionality	Comments
<u>Desmodur® CQ ultra N 7400</u>	100	~23.0	~1,900	~3.7	~28% bio-based carbon, lower viscosity, properties close to Desmodur® ultra N 3600
<u>Desmodur® CQ ultra N 7200</u>	100	~22.6	~3,200	~3.7	~28% bio-based carbon, properties close to Desmodur® ultra N 3300
<u>Desmodur® CQ ultra N 7300</u>	100	~21.9	~9,500	~3.7	~68% bio-based carbon, standard crosslinker for 2K PU adhesives

Low monomer HDI based crosslinkers

<u>Desmodur® ultra N 31100</u>	100	~19.5	~550	~2.5	Low viscosity crosslinker, low functionality
<u>Desmodur® ultra N 3900</u>	100	~23.5	~730	~3.2	Low viscosity crosslinker, higher functionality
<u>Desmodur® ultra N 3600</u>	100	~23.0	~1,200	~3.2	Low viscosity crosslinker
<u>Desmodur® ultra N 3300</u>	100	~21.8	~3,000	~3.5	Standard crosslinker for 2K PU adhesives
<u>Desmodur® ultra N 3800</u>	100	~11.0	~6,000	~3.8	Crosslinker for highly elastic adhesives
<u>Desmodur® ultra N 3700</u>	100	~20.0	~16,000	~3.9	High functional crosslinker for fast curing



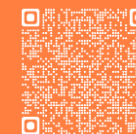
Aliphatic polyisocyanate crosslinkers for reactive solvent-borne & solvent-free adhesives

HDI & IPDI based crosslinkers for high performance 2K adhesive formulations with UV stability and excellent resistance properties. Desmodur® ultra grades contain <0.1% residual monomer and enable adhesive manufacturers to offer improved industrial hygiene standards to their customers.

HDI based crosslinkers	Non-volatile content [wt.%]	NCO content [wt.%]	Viscosity @ 23°C [mPa*s]	Functionality	Comments
<u>Desmodur® N 3400</u>	100	~21.8	~150	~2.5	Uretdione structure suitable for 1K formulations
<u>Desmodur® N 3200</u>	100	~23	~2,500	~3.5	Biuret with lower viscosity profile
<u>Desmodur® N 100</u>	100	~22	~10,000	~3.8	Biuret with high compatibility to branched polyols
<u>Desmodur® N 3500</u>	100	~19.5	~35,000	>5	High functional crosslinker for fast curing 2K PU adhesives

Low monomer IPDI based crosslinkers

<u>Desmodur® ultra Z 4470 BA</u>	~70 in BA	~11.9	~600	~3.5	Isocyanurate for excellent chemical resistance
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Specialty and aromatic crosslinkers for reactive solvent-borne adhesives

TDI & HDI based crosslinkers for balancing application performance and reaction speed. Desmodur® ultra grades contain <0.1% residual monomer and enable adhesive manufacturers to offer improved industrial hygiene standards to their customers.

TDI based crosslinkers	Non-volatile content [wt.%]	NCO content [wt.%]	Viscosity @ 23°C [mPa*s]	Functionality	Comments
<u>Desmodur® RC</u>	~35 in EA	~7	~3	N.A.	TDI isocyanurate for rapid curing, high heat resistance, bonding of rubber materials
<u>Desmodur® ultra IL EA</u>	~51 in EA	~8	~700	~4.5	TDI isocyanurate crosslinker
<u>Desmodur® ultra L 75</u>	~75 in EA	~13.3	~1,600	~2.7	TDI/TMP adduct, universal crosslinker for solvent-borne adhesives

TDI/HDI based crosslinkers

<u>Desmodur® ultra RN</u>	~40 in EA	~7.2	~11	N.A.	TDI isocyanurate for rapid curing, high heat resistance, bonding of rubber materials
<u>Desmodur® HL EA</u>	~60 in EA	~10.5	~1,100	~4.4	Highly functional HDI/TDI isocyanurate

Tris (p-isocyanatophenyl) thiophosphate crosslinker

<u>Desmodur® RFE</u>	~27 in EA	~7.2	~3	N.A.	For universal application, good adhesion on glass
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Aromatic polyisocyanates for reactive solvent-borne & solvent-free adhesives

Monomeric diisocyanates are used as building blocks for polyurethane prepolymers. TDI and MDI deliver state-of-the-art performance for PU adhesives.

Monomeric TDI products	NCO content [wt.%]	Viscosity @ 25°C [mPa*s]	Comments
<u>Desmodur® T 65 N</u>	≥48	~3	Unique TDI isomer ratio: ~67% 2,4'-TDI : ~33% 2,6'-TDI
<u>Desmodur® T 80</u>	≥48	~3	High 2,4'-TDI isomer content (~80%), excellent flowability
<u>Desmodur® T 100</u>	≥48	~3	Pure 2,4'-TDI (>99%) for the production of prepolymers with high reactivity rate and low monomer content

Monomeric MDI products

<u>Desmodur® LS 2424</u>	~33.6	~12	MDI mixture with high 2,4'-MDI isomer (~55%) for prepolymers with reduced viscosity and monomer content
<u>Desmodur® 2460 M</u>	~33.6	~12	Color stabilized MDI mixture with high 2,4'-MDI isomer (~55%) for low viscous, low monomer prepolymers
<u>Desmodur® CD-S</u>	~29.5	~35	Modified monomeric MDI, liquid at room temperature, storage-stable at low temperatures
<u>Desmodur® 44 M liquid</u>	~33.6	~4 @40°C	High 4,4'-MDI isomer content (≥98%), solid at room temperature. Additional supply forms available (i.e. fused, flakes)
<u>Desmodur® PF</u>	~32.0	~600	Modified monomeric 4,4'-MDI

These products represent only a selection of the entire TDI and MDI portfolio. For an overview, visit our Product Finder at [Covestro](#).



Aromatic polyisocyanates for reactive solvent-borne & solvent-free adhesives

Polymeric MDI (pMDI) grades offer high molecular weight and functionality for high strength adhesives with excellent durability. Used as component in 2K reactive adhesives or as building blocks for polyurethane prepolymers.



These products represent only a selection of the entire pMDI portfolio. Our Product Finder at [Covestro](#) provides an overview.

Polymeric MDI products	NCO content [wt.%]	Viscosity @ 25°C [mPa*s]	Functionality	Equivalent weight	Gel time with castor oil [min]	Comments
Desmodur® VK 5	~32.5	~23	~2.2	~130	~60	High 2,4'-MDI content, good compatibility with polyethers
Desmodur® VK 10	~31.5	~90	~2.6	~135	~40	High 2,4'-MDI content, low pMDI content, good compatibility with polyethers, 1&2K adhesives
Desmodur® VK 10 L	~31.5	~90	~2.6	~135	~50	High 2,4'-MDI content, low pMDI content good compatibility with polyethers, 1&2K adhesives
Desmodur® VL R 10	~31.5	~120	~2.8	~135	~45	Standard 2K adhesives, low viscosity
Desmodur® VKS 20	~31.5	~200	~2.9	~135	~45	Standard 2K adhesives, low acidity
Desmodur® VKS 20 F	~31.5	~200	~2.9	~135	~40	Standard 2K adhesives, high acidity
Desmodur® 44 V 40 L	~31.0	~400	~3.0	~135	~50	Standard 2K adhesives, high functionality
Desmodur® 44 V 70 L	~31.3	~680	~3.2	~135	~50	Standard 2K adhesives, highest functionality

Polyether polyols for reactive solvent-borne & solvent-free adhesives

Linear polyether polyols are utilized as building blocks for NCO- and silane-terminated prepolymers in adhesive and sealant applications.



These products represent only a selection of the entire polyol portfolio. Our Product Finder at [Covestro](#) provides an overview.

Linear polyether diols	OH value [mg KOH/g]	Viscosity @ 25°C [mPa*s]	Molecular weight [g/mol]	Comments
Desmophen® 1262 BD	~260	~70	~430	Low reactive, low molecular weight
Desmophen® 1110 BD	~112	~140	~1,000	Low reactive
Desmophen® 1111 BD	~111	~155	~1,000	Low mono alcohol polyether, low reactivity, odorless, good compatibility with pMDI
Desmophen® 2060 BD	~56	~310	~2,000	Low reactive, good compatibility with pMDI
Desmophen® 2061 BD	~56	~345	~2,000	Low mono alcohol polyether, low reactivity, odorless, good compatibility with pMDI
Desmophen® 4028 BD	~28	~870	~4,000	High reactive, good compatibility with pMDI
Desmophen® 5168 T	~28	~870	~4,000	Reactive polyether, good compatibility with pMDI
Acclaim® Polyol 4200	~28	~980	~4,000	Low mono alcohol polyether, low reactivity, odorless, good compatibility with pMDI
Acclaim® Polyol 8200 N	~14	~2,800	~8,000	Low mono alcohol polyether, low reactivity, odorless
Acclaim® Polyol 12200 N	~10	~6,000	~12,000	Low mono alcohol polyether, low reactivity, odorless
Acclaim® Polyol 18200 N	~6	~23,000	~18,000	Low alcohol polyether, low reactivity, odorless

Polyether polyols for reactive solvent-borne & solvent-free adhesives

Branched polyether polyols are utilized as building blocks for NCO- and silane-terminated prepolymers suitable for adhesives and sealants with advantages in hydrolysis resistance and flexibility.



These products represent only a selection of the entire polyol portfolio. Our Product Finder at [Covestro](#) provides an overview.

Polyether triols	OH value [mg KOH/g]	Viscosity @ 25°C [mPa*s]	Molecular weight [g/mol]	Comments
Desmophen® 4011 T	~500	~180	~300	Low reactive, low molecular weight
Desmophen® 1400 BT	~400	~370	~420	Low reactive, good compatibility with pMDI
Desmophen® 1380 BT	~385	~600	~440	Low reactive
Desmophen® 1381 BT	~385	~600	~440	Low reactive, lower acidity than 1380 BT
Desmophen® 3061 BT	~56	~500	~3,000	Reactive polyether
Desmophen® 4042 BT	~45	~790	~3,700	Low mono alcohol polyether, low reactivity, odorless
Desmophen® 5034 BT	~35	~860	~4,800	Reactive polyether
Desmophen® 5031 BT	~28	~1,160	~6,000	Reactive polyether, higher molecular weight
Acclaim® Polyol 6300	~28	~1,470	~6,000	Low mono alcohol polyether, low reactivity, odorless

Polycarbonate polyols for reactive solvent-borne & solvent free and hotmelt adhesives

Polycarbonate polyols are utilized as building blocks where softness and toughness meet flexibility combined with high-end resistance to improve PU systems with respect to hydrolysis, oxidative and thermal resistance performance.

Polycarbonate polyols	OH content [%]	Viscosity @ 23°C / *75°C [mPa*s]	Equivalent weight [g/mol]	Solidification [°C]	Comments
<u>Desmophen® C 1100</u>	~3.3	~3,200	~515	~15	Symmetric building block for flexible and weather-resistant sealants, self-healing, good compatibility
<u>Desmophen® C 1200</u>	~1.7	~16,500	~1,000	~16	Symmetric building block for flexible and weather-resistant sealants, self-healing, good compatibility
<u>Desmophen® C 2102</u>	~3.3	~410*	~515	33-62	Symmetric building block for flexible and weather-resistant sealants, self-healing
<u>Desmophen® C 2202</u>	~3.3	~2,300*	~1,000	39-52	Symmetric building block for flexible and weather-resistant sealants, self-healing
<u>Desmophen® C XP 2613</u>	~1.7	~3,500*	~1,000	~6	Asymmetric building block, highly reactive, partial liquid for flexible and weather-resistant sealants

Polyester polyols for reactive solvent-borne & solvent-free adhesives

Polyester polyols are utilized as building blocks where softness and toughness meet flexibility combined with high-end resistance to improve PU systems with respect to hydrolysis, oxidative and thermal resistance performance.



These products represent only a selection of the entire polyester portfolio. Our Product Finder at [Covestro](#) provides an overview.

Linear polyesters with aliphatic building blocks

	OH value [mg KOH/g]	Viscosity @ 75°C [mPa*s]	Molecular weight [g/mol]	Comments
<u>Baycoll® AD 2055</u>	~56	~630	~2,000	Amorphous, good hydrolysis resistance, slip agent compatibility
<u>Baycoll® AD 5027</u>	~28	~2,800	~4,000	Crystalline, good hydrolysis resistance and slip agent compatibility

Linear polyesters with aromatic building blocks

<u>Baycoll® CD 2084</u>	~84	~120	~1,340	Bifunctional, suitable for flexible packaging adhesives
<u>Baycoll® AD 2047</u>	~55	~7,000	~1,020	For polyurethane polymers with excellent adhesion, good hydrolysis resistance, slip agent compatibility

Branched polyester with aromatic building blocks

<u>Baycoll® AV 2113</u>	~109	~650	~1,650	Amorphous, highly branched, good hydrolysis resistance
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High molecular weight polyesters for reactive solvent-borne adhesives

High molecular weight polyester resins are recommended for lamination adhesives. With their excellent adhesion to a broad range of film substrates (incl. PET, CPP, PE, Aluminum) and their hydrolytic and temperature resistance, our NeoRez® PL grades in combination with suitable isocyanate crosslinkers meet the requirements of retort applications.

High molecular weight polyesters	Non-volatile content [wt.%]	OH value [mg KOH/g]	Viscosity @ 23°C [mPa*s]	Comments
<u>NeoRez® PL-806 XP</u>	~70 in EA	~17.0	~3500	High molecular polyester for the formulation of solvent-based laminating adhesives, designed to be crosslinked with low levels of aliphatic hardeners
<u>NeoRez® PL-845</u>	~40 in EA	<8.0	~1,000	Low viscous high molecular polyester for the formulation of solvent-based laminating adhesives with excellent initial bond strength



Aliphatic prepolymers for reactive solvent-borne, solvent-free and hotmelt adhesives

Prepolymers based on aliphatic diisocyanates can be used to formulate adhesives with high requirements regarding discoloration stability. Desmodur® ultra qualities perform with < 0.1% monomer content.

HDI based prepolymers	NCO content [wt.%]	Viscosity @ 23°C [mPa*s]	Functionality	Equivalent weight [g/mol]	Comments
<u>Desmodur® ultra E 30600</u>	~6.0	~2,500	~4.0	~700	2K adhesive applications
<u>Desmodur® ultra E 30500</u>	~12.5	~4,250	~2.0	~335	Largely linear NCO prepolymer for elastic weather resistant adhesives

IPDI based prepolymer

<u>Desmodur® VP LS 2371</u>	~3.7	~9,800	~2.0	~1,100	1K sealants
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These products represent only a selection of the entire prepolymer portfolio. Our Product Finder at [Covestro](#) provides an overview.



Silane terminated prepolymers for solvent-free adhesives and sealants

Silane-terminated polyurethanes (STP) combine the advantages of a polyurethane backbone and silane-based curing mechanism, such as excellent cohesive strength and good adhesion properties. They cover the complete application range from low modulus sealants up to structural adhesives.

Silane terminated aliphatic polyurethane prepolymers	Viscosity @ 23°C [mPa*s]	Molecular weight	Comments
<u>Desmoseal® S XP 2774</u>	50,000	Very high	For low modulus sealants with very high elongation. Starting formulation available which has been classified according to ISO 11600-F-25 LM (ift Rosenheim)
<u>Desmoseal® S XP 2636</u>	40,000	High	For low modulus sealants and elastic adhesives with high elongation
<u>Desmoseal® S 2876</u>	25,000	Medium	For elastic adhesives and high-modulus sealants with medium elongation
<u>Desmoseal® S XP 2821</u>	20,000	Low	For structural adhesives with high tensile strength and lap shear strength without added plasticizer
<u>Desmoseal® S XP 2749</u>	5,100	Low	For adhesives with high hardness without added plasticizer



Aromatic prepolymers for reactive solvent-borne, solvent-free and hotmelt adhesives

Aromatic prepolymers are NCO-functional reaction products derived from isocyanates and polyols. The wide variability of the isocyanate content and functionality enables adjusting precisely the viscosity of the prepolymers and the mechanical properties of the finished products.

TDI based prepolymers	NCO content [wt.%]	Viscosity @ 23°C [mPa*s]	Functionality	Equivalent weight [g/mol]	Comments
<u>Desmodur® E 14</u>	~3.3	~6,800	~2.5	~1,270	For 1K sealants
<u>Desmodur® ultra E 15</u>	~4.4	~7,000	~2.0	~955	Low monomer content (<0.1), for 1K sealants

Blocked TDI based prepolymer	NCO content [wt.%]	Viscosity @ 23°C [mPa*s]	Comments
<u>Desmocap® 14 CNB</u>	~2.7	~25,000	Flexibilizer for epoxy resins, ~29% bio-based carbon

These products represent only a selection of the entire prepolymer portfolio. Our Product Finder at [Covestro](#) provides an overview.



Aromatic prepolymers for reactive solvent-borne, solvent-free and hotmelt adhesives

Aromatic prepolymers are NCO-functional reaction products derived from isocyanates and polyols. The wide variability of the isocyanate content and functionality enables adjusting precisely the viscosity of the prepolymers and the mechanical properties of the finished products.



These products represent only a selection of the entire polyester portfolio. Our Product Finder at [Covestro](#) provides an overview.

MDI based prepolymers	NCO content [wt.%]	Viscosity @ 23°C/*25°C [mPa*s]	Functionality	Equivalent weight [g/mol]	Comments
<u>Desmodur® E 29</u>	~24.0	~220*	~2.2	~175	1K primer for flooring applications
<u>Desmodur® E 21</u>	~16.0	~5,400*	~2.8	~260	1K wood bonding (D4), 2K adhesives
<u>Desmodur® E XP 2723</u>	~15.4	~1,500*	~2.3	~270	1K assembling adhesives, 2K adhesives
<u>Desmodur® E 23</u>	~15.4	~1,800	~2.1	~270	1K wood bonding (D4), 2K flexible packaging adhesives
<u>Desmodur® E XP 2727</u>	~15.3	~800	~2.0	~275	For 1 and 2K polyurethane and polyurea adhesives & sealants
Desmodur® E XP 2715	~15.1	~950 (@70°C)	~2.0	~280	Precursor for low monomer 1K PUR hot melts, high 2,4'-MDI content
<u>Desmodur® E XP 2762</u>	~14.3	~4,500	~2.1	~295	1K wood bonding (D4) – higher reactivity compared to E 23, 2K adhesives
<u>Desmodur® E 22</u>	~8.6	~2,800	~2.0	~490	1K bonding of rubber pellets, 2K adhesives
Desmodur® E 21300	~5.6	~8,250 (@50°C)	~2.0	~750	Precursor for low monomer 1K PUR hot melts
Desmodur® ultra E 21500	~2.6	<15,000	~2.5	~1,600	Residual monomer content < 0.1%, for 1K and 2K PU adhesive formulations
<u>Desmoseal® M 280</u>	~2.1	~33,000	~2.7	~2,000	1k sealants, 1K elastic adhesives

Polyurethane powders for solvent-borne & hotmelt adhesives

Desmomelt® U is a new class of non-yellowing polyurethane (PU) adhesive raw materials. Supplied as a coarse powder or pellet it provides the bonding characteristics of well-known and proven solvent- or water-based heat activation PU adhesives in a 100% solid form.

Aliphatic polyurethane powders	Crystallization speed	Viscosity @ 23°C ¹ [mPa*s]	Heat activation [°C]	Comments
<u>Desmomelt® U 410</u>	++	~35	~55	Lower molecular weight polyester polyurethane
<u>Desmomelt® U 320*</u>	+	~125	~65	Medium molecular weight polyester polyurethane
<u>Desmomelt® U 230</u>	o / +	~400	~75	Higher molecular weight polyester polyurethane

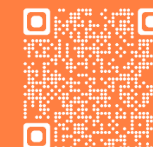
¹15 wt% in methylethylketone (MEK) / water (16:1), (23°C, #62, 30 rpm)

*Sub grades: U 320 F: sieved through 100 µm; U 320 M: sieved through 500 µm, U 320 P: pellets



For more information, please visit our Solution Center:

[Desmomelt U aliphatic polyurethane powders for adhesives | Covestro AG](#)



Acrylic beads and polyurethane powders for hotmelts

Solid NeoCryl® B acrylic beads are utilized for the formulation of hotmelt adhesives.



The products listed below represent only a selection of our acrylic beads portfolio. Our Product Finder at [Covestro](#) provides an overview.

Acrylic based beads	Acid value [mg KOH/g]	Viscosity @ 150°C 50 wt% in polyol ¹ [mPa*s]	T _g [°C]	Molecular weight [g/mol]	Comments
NeoCryl® B-725	~6	~5	~61	~50,000	Solid BMA copolymer, easy solubility
NeoCryl® B-810	~7	~4	~59	~55,000	Solid BMA copolymer, easy solubility
NeoCryl® B-885	~5.5	~9	~85	~45,000	Solid MMA copolymer, good chemical resistance

¹e.g. [ARCOL® POLYOL PPG 1000](#) | [Covestro](#)





Powder of chlorinated rubber-based raw materials for solvent-borne adhesives

Fast-drying fine-powdered chlorinated polymers for solvent-borne contact adhesives for simple 1K application and improved adhesion between metals (steel) and rubber. All grades of our adhesive raw materials based on chlorinated rubber are supplied with a low content of toluene ($\leq 2.5\%$) and extremely low content of CCl_4 ($< 0.005\%$).

Fine powder of chlorinated rubber	Type	Solution ¹ Viscosity @ 23°C [mPa*s]	Chlorine content [% by weight]	Comments
<u>Pergut® S 20</u>	Polyisoprene	~20	≥ 64.5	Primer preparation or as additive for SB-CR contact adhesives to improve i.e. initial bond strength and chemical resistance
<u>Pergut® S 40</u>	Polyisoprene	~42	≥ 64.5	Additive for SB-CR contact adhesives to improve setting rate
<u>Pergut® S 90</u>	Polyisoprene	~92	≥ 64.5	Additive for SB-CR contact adhesives to improve setting rate and binder for adhesives, e.g. for swimming pools
<u>Pergut® S 130</u>	Natural rubber	~150	≥ 64.5	Primer and adhesion promotor for rubber to metal bonding
<u>Pergut® S 170</u>	Polyisoprene	~165	≥ 64.5	Primer and adhesion promotor for rubber to metal bonding

¹18.5% in Toluene

Water-borne performance

Raw materials for high performance water-borne adhesive formulations



Crosslinkers



Resins





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A broad portfolio of raw materials for water-borne adhesives



Acrylic & PU dispersions

NeoCryl® Decovery®
NeoRez® Dispercoll®



Water compatible crosslinker

Desmodur®
Bayhydur®



Heat activation bonding



Contact bonding



Continuous lamination

Polychloroprene dispersions for contact adhesives

Water-borne dispersions of 2-chlorobutadiene polymer with varying crystallization tendency.

Polychloroprene dispersions	Non-volatile content [wt.%]	pH	Crystallization	Gel content	Comments
<u>Dispercoll® C 74</u>	~58	~13	Medium	Medium	Provides a medium rate of crystallization featuring heat resistance and long open time
<u>Dispercoll® C 84</u>	~55	~13	Fast	Very low	Highly crystalline polymer with fast development of high strength bond
<u>Dispercoll® C 2325</u>	~55	~12	Fast	Low	Highly crystalline polymer with hydroxyl functionality for crosslinking
<u>Dispercoll® C VP LS 2372/1</u>	~58	~13	Slow	Low	Outstanding adhesion to non-polar substrates with hydroxyl functionality for crosslinking

Nano SiO₂ dispersions with small particle size for improved drying behavior and initial tack

Nano-silica additives for Dispercoll® C	Non-volatile content [wt.%]	pH	Average particle size [nm]	Spec. Surface [m²/g]	Comments
<u>Dispercoll® S 3020</u>	~30	~3	~15	~160	Enhances bond strength and heat resistance, provides strong thickening effect when compounded with ZnO
<u>Dispercoll® S 3030/1</u>	~30	~10.5	~9	~300	Enhances bond strength and heat resistance, provides strong thickening effect when compounded with ZnO
<u>Dispercoll® S 4020</u>	~40	~10	~15	~160	Viscosity thickening effect between S 4510 and S 3030/1
<u>Dispercoll® S 4510</u>	~45	~10	~30	~90	Moderate reinforcing effect, low to medium viscosity

Polyacrylate dispersions for adhesive applications

Alkali soluble polyacrylate dispersions for labeling and DIY adhesive applications

Acrylic dispersions	Non-volatile content [wt.%]	pH	Viscosity @ 23°C [mPa*s]	MFFT [°C]	Tg [°C]	Acid value [mg KOH/g]	Comments
<u>Decovery® SP 6400</u>	~40	~5.5	~20	0	~1	~71	~35% bio-based carbon, high clarity and flexibility
<u>NeoCryl® BT-63</u>	~30	~2.8	~50	N.A.	~38	~267	For glue stick applications, photographs and fabrics, low odor
<u>NeoCryl® BT-207</u>	~43	~2.8	~25	N.A.	~10	~200	Synthetic alternative to casein, suitable for high-speed bottle labeling
<u>NeoCryl® XK-39</u>	~45	~2.2	~60	~57	~67	~129	Rheology modifier, blending resin for increasing block resistance

Polyacrylate dispersions for flexible film and paper lamination

Acrylic styrene dispersions	Non-volatile content [wt.%]	pH	Viscosity @ 23°C [mPa*s]	MFFT [°C]	Tg [°C]	Comments
<u>NeoCryl® A-45</u>	~38	~9.8	~30	<4	~-15	Highly flexible, compatibility to urethane blends, utilized as modifying agent, improves adhesion to PP
<u>NeoCryl® A-662</u>	~40	~7.5	~20	>90	~95	Adhesion to plastic substrates such as: ABS, PS, PVC
<u>NeoCryl® A-1120</u>	~55	~8.3	~600	<0	~-30	Self crosslinking, very fast drying, suitable für paper to film wet lamination
<u>NeoCryl® A-2092</u>	~47	~8.3	~300	~6	~8	High water & grease resistance, suitable for heat sealing & food contact applications



Polyurethane dispersions for adhesive applications

Products are available with crystalline or amorphous backbones. Crystalline resins are distinguished by rapid development of bond strength in the heat activation bonding processes. Bond strength increases rapidly as the adhesive layer cools and recrystallizes. Amorphous dispersions exhibit room temperature tack and are especially useful for the lamination of flexible films.

Polyester based polyurethane dispersions

	Non-volatile content [wt.%]	pH	Viscosity @ 23°C [mPa*s]	Crystallization velocity	Recommended min. bondline Temp [°C]	Comments
Dispercoll® U 42	~50	~7.5	~475	--	80-100	Flexible polymer film, high molecular weight, high transparency & elasticity
Dispercoll® U 53	~40	~7.5	~325	++	60-70	High initial green strength, fine particle size
Dispercoll® U 54	~50	~7.5	~320	+	60-70	Longer hot-tack life
Dispercoll® U 56	~50	~7.5	~475	+	55-56	Low activation temperature, excellent adhesion
Dispercoll® U 58/1 PLUS	~50	~7.5	<1,000	O	50-70	Excellent initial heat & hydrolysis resistance, high initial tack
Dispercoll® U 66	~48	~7.5	<1,000	-	55-75	High climate resistance at low heat activation temperatures
Dispercoll® U 84	~40	~7.5	<1,000	++	not relevant	For wet adhesive application with spray-mix coagulation
Dispercoll® U 2612	~50	~7.5	~425	+	65-75	High initial heat resistance
Dispercoll® U 2682	~50	~7.5	<1,000	++	50-60	Low molecular weight, low melt viscosity, for compostable adhesives according to DIN EN 13432 and ASTM D 6400-04
Dispercoll® U 2710	~45	~7.5	<1,000	+	65-75	High initial heat resistance, high shear stability, brushability
Dispercoll® U 2849	~50	~7.5	<2,000	-	80-100	High climate resistance, higher reactivity
Dispercoll® U 8755	~45	~7.5	<1,000	++	80-100	High heat resistance also without crosslinker, heat activation > 80°C

Crosslinkers for 2K water-borne adhesive formulations

Polyurethane dispersions are frequently used with water-dispersible Bayhydur® and Desmodur® crosslinkers for improving the adhesive performance profile.

HDI based water-dispersible crosslinker	Non-volatile content [wt. %]	NCO content [wt. %]	Viscosity @ 23°C [mPa*s]	Comments
<u>Desmodur® ultra DN</u>	100	~21.8	~1,250	Low hydrophilicity, standard grade for water-based PU adhesives
<u>Desmodur® ultra DA-L</u>	100	~20.0	~3,000	Low hydrophilicity
<u>Bayhydur® ultra 3100</u>	100	~17.4	~2,800	High hydrophilicity, easy mixing
<u>Bayhydur® ultra 304</u>	100	~18.2	~4,000	Medium hydrophilicity, high functionality, good chemical resistance, easy mixing

IPDI based water-dispersible crosslinker

<u>Bayhydur® ultra 401-70 MPA/X</u>	~70 in MPA/X	~9.4	~600	Weather stable, non-yellowing, improved hardness, good adhesion and drying properties, suitable for CR dispersion to improve heat resistance
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Polyurethane dispersions and crosslinker for the formulation of 1K adhesives

Polyurethane dispersions with carboxylic functional groups are suited for the manufacturing of 1K water-borne reactive adhesives with incorporated carbodiimide crosslinker with a pot-life of up to several months.

Polyurethane dispersions with carboxylic groups	Non-volatile content [wt.%]	pH	Viscosity @ 23°C [mPa*s]	Comments
<u>Dispercoll® U XP 2643</u>	~40	~7.5	<1,000	Non-crystalizing, suitable for low temperature bonding (≥ RT), Polyether-backbone
<u>Dispercoll® U 2824</u>	~40	~7.5	~500	Crystalizing, suitable for low temperature bonding (≥ RT)
<u>NeoRez® R-551</u>	~36	~8	~350	Clear water like & light stable, good climate resistance also without crosslinker.
<u>NeoRez® R-563</u>	~38	~8.2	~225	High clarity, excellent adhesion to a variety of substrates

Polycarbodiimide crosslinker	Non-volatile content [wt.%]	NCN content [wt. %]	Viscosity @ 23°C [mPa*s]	Comments
<u>Desmodur® 2802</u>	~40	0.5-1.2	~100	Utilized in combination with carboxyl groups containing dispersion polymers (PU or PAC dispersions) to formulate water-borne reactive systems with long pot life, suitable for ambient and forced drying, fast bonding, high moisture resistance

Crosslinker for 1K latent reactive adhesive formulations

Combined with semi-crystalline polyester-based polyurethane dispersions (e.g. Dispercoll® U 56), our latent reactive crosslinkers can be used to formulate storage stable 1K waterborne latent reactive adhesives with a pot life and open time of up to several months.

Crosslinkers for latent reactive adhesives

	Non-volatile content [wt. %]	NCO content [wt. %]	Key features
<u>Desmodur® Z 2589</u>	100	~17	Powder of a latent-reactive solid isocyanate (IPDI trimer)
<u>Dispercoll® BL XP 2514</u>	~40	~9	Aqueous suspension of a latent-reactive solid isocyanate (TDI dimer)



Significantly longer storage time of formulations compared to 2K water-borne PU adhesives



Dried film/precoating of latent reactive adhesives can be stored for months



No liquid adhesive handling at the user, resulting in clean, reliable & efficient processes



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