Taking Quality and Performance to the Next Level

Innovative Solutions for Coatings, Adhesives, Sealants and Elastomers

DOW®



Supplying a multitude of products for measurable results

Consistency and reliability—you get both when you work with Dow. It starts with our strong commitment to quality control, helping provide greater assurance of product purity.

Equally important is our dedication to our customers. We understand the challenges you face every day in producing high-quality products while balancing performance, economics, and environmental impact. We recognize that different applications require different performance characteristics to help you differentiate in the market.

Our technical service representatives are always available to answer questions or help you develop solutions for fabrication or foaming challenges.

Unparalleled Expertise

Dow people bring unparalleled expertise in polyurethane chemistry and materials science, combined with in-depth knowledge of end-use markets. Our global network of technical service professionals, development scientists, and marketing and sales representatives work collaboratively to help you analyze market intelligence, develop innovative products, and troubleshoot issues at your site.

We rely exclusively on responsible, science-based manufacturing practices that help safeguard our workplaces, our communities, and the environment. In addition, we have accelerated our commitment to innovative chemistry through the development of new technologies and products.

Choose the Product That's Right for You

Dow offers a broad portfolio of basic and high-performance polyols and isocyanates, including TDIs and MDIs, for a wide range of applications such as adhesives, appliances, building and construction, coatings, elastomers, furniture and bedding, packaging, and sealants.

This guide is an easy-to-use tool for comparing product features and benefits. Use it to help identify the solution that best fits your application, or speak with your Dow representative about your specific needs. Together, we can develop a solution that delivers optimal product performance at the right price.





High-Performance Polyols

High-performance polyols exhibit near-true diol and triol functionality across a broad range of molecular weights, enabling end users to achieve excellent mechanical properties. They are characterized by highly consistent reactivity, resulting from precise control of functionality, hydroxyl content, water content, and basicity.

Product	Functionality	OH number	Average molecular weight	Viscosity at 25°C (mPas)	Water (% max)	Applications
VORANOL™ 1000LM Polyol	2.0	112	1,000	175	0.03	Raw material used in the preparation of prepolymers for coatings, adhesives, sealants, and elastomers requiring superior dynamic and mechanical properties.
VORANOL™ 2000LM Polyol	2.0	56	2,000	373	0.03	Raw material used in the preparation of prepolymers for coatings, adhesives, sealants, and elastomers requiring superior dynamic and mechanical properties.
VORANOL™ 3000M Polyol	2.0	38	3,000	640	0.03	Raw material used in the preparation of prepolymers for coatings, adhesives, sealants, and elastomers requiring superior dynamic and mechanical properties.
VORANOL™ 3003LM Polyol	3.0	57	3,000	620	0.08	Raw material used in the preparation of prepolymers for coatings, adhesives, sealants, and elastomers requiring superior dynamic and mechanical properties.
VORANOL™ 4000LM Polyol	2.0	28	4,000	480	0.03	Raw material for the preparation of prepolymers used in adhesives, sealants, and elastomers requiring superior dynamic and mechanical properties, with the added benefit of favorable viscosity.
VORANOL™ 8000LM Polyol	2.0	14	8,000	1900 at 38°C	0.03	Raw material for the preparation of prepolymers used in high-elongation sealant applications.
VORANOL™ 223-060LM Polyol	2.0	61	1,800	300	0.04	A low-viscosity, fast-reacting polyol with low-monol content, designed for finished polyurethane products requiring excellent mechanical and dynamic properties.

Typical properties. Not to be construed as specifications.

Polyether Diols and Triols

When used in prepolymer production, these polyols enhance prepolymer stability in one- and two-component coatings, adhesives, and sealants, while delivering consistent processing performance. A broad range of functionalities, hydroxyl terminations, and molecular weights enables precise control of curing profiles and fine-tuning of the final product's mechanical properties.

Product	Functionality	OH number	Average molecular weight	Viscosity at 25°C (mPas)	Water (% max)	Applications
VORANOL™ 2070L Polyol	3.0	238	700	243	0.05	Low-molecular-weight triol designed for rigid castings, encapsulation, coatings, and adhesive applications.
VORANOL™ 2104L Polyol	2.0	270	400	70	0.05	Low molecular weight polypropylene glycol designed for use in flexible packaging adhesives, elastomers, thermal breaks, potting compounds and RIM parts such as coatings and adhesives. The product is acidified for enhanced prepolymer stability.
VORANOL™ 2104P Polyol	2.0	270	400	70	0.05	Low molecular weight polypropylene glycol, suitable for food related applications, designed for use in flexible packaging adhesives, elastomers, thermal breaks, potting compounds, and RIM parts such as coatings and adhesives. The product is acidified for enhanced prepolymer stability.
VORANOL™ 2100L Polyol	3.0	56	3,000	484	0.05	Storage-stable prepolymers designed for one- or two-component flooring adhesives and sealants.
VORANOL™ 2110L Polyol	2.0	110	1,000	145	0.05	Polypropylene glycol designed for use in prepolymer production and flexible packaging adhesive applications.
VORANOL™ 2110P Polyol	2.0	110	1,000	145	0.05	Polypropylene glycol, suitable for food related applications, designed for use in prepolymer production and flexible packaging adhesives applications.
VORANOL™ 2120LP Polyol	2.0	56	2,000	320	0.05	Polypropylene glycol designed for use in prepolymer production and flexible packaging adhesive applications.

Typical properties. Not to be construed as specifications.

Product	Functionality	OH number	Average molecular weight	Viscosity at 25°C (mPas)	Water (% max)	Applications
VORANOL™ 2120AP Polyol	2.0	56	2,000	320	0.05	Polypropylene glycol, suitable for food related applications, designed for use in prepolymer production and flexible packaging adhesives applications.
VORANOL™ 220-260 Polyol	2.0	260	425	34 at 38°C	0.05	A general-purpose product used in the manufacture of prepolymers and as a chain extender in elastomers with Shore A hardness in the 40-60 range.
VORANOL™ 230-042P Polyol	3.0	41	4,000	670	0.05	Storage-stable prepolymers designed for use in one- or two-component coatings, adhesives, and sealants.
VORANOL™ 230-112 Polyol	3.0	112	1,500	135 at 38°C	0.04	An excellent general-purpose polyol suitable for use in prepolymers, adhesives, elastomers, and coatings.
VORANOL™ 230-660 Polyol	3.0	660	250	298 at 38°C	0.05	High-reactivity polyether polyol used in the manufacture of rigid elastomers.
VORANOL™ CP 1055 Polyol	3.0	156	1,000	250	0.05	Medium-molecular-weight triol suitable for rigid and semi-rigid applications.
VORANOL™ CP 450P Polyol	3.0	383	450	330	0.05	Low-molecular-weight triol suitable for rigid castings, encapsulation, coatings, and adhesive applications.
VORANOL™ P 400 Polyol	2.0	260	400	65	0.08	Propylene glycol-initiated polyether homopolymer diol designed for the production of coatings, adhesives, and sealants.
EO capped polyols						
VORANOL™ 222-056 Polyol	2.0	56	2,000	168 at 38°C	0.04	Fast-reactivity polyol with high primary hydroxyl content for prepolymer manufacturing; also used in prepolymers designed for PUD and high-performance two-component CASE applications.
VORANOL™ 4240L Polyol	2.0	28	4,000	800	0.04	Fast-reactivity polyol with high primary hydroxyl content for prepolymer manufacturing, sealants applications, and high-performance two-component elastomers.

Typical properties. Not to be construed as specifications.

Amine-Initiated Polyols

This family of polyols delivers fast-curing performance, enables potential reductions in catalyst loading, and offers versatility across applications, such as rigid castings and rigid adhesives.

Product	Functionality	OH number	Average molecular weight	Viscosity at 25°C (mPas)	Water (% max)	Applications
VORANOL™ 220-530 Polyol	2.0	530	212	6,000 at 35°C	0.10	Amine-initiated polyol/ cross-linker designed for two-component adhesives, sealants, and coatings; compatible with polybutadiene-based polyols.
VORANOL™ 240-800 Polyol	4.0	800	278	17,300	0.08	Amine-initiated autocatalytic polyol designed for cross-linking and improved polyol compatibility in high-modulus two-component adhesives and coatings; also used in rigid elastomers and electrical potting applications.

Typical properties. Not to be construed as specifications.

High Functionality Polyols

This product line offers a wide range of functionalities, molecular weights, and viscosities, enabling users to adjust processing conditions, achieve a broad spectrum of mechanical properties, and support applications such as electrical cast elastomers.

Product	Functionality	OH number	Average molecular weight	Viscosity at 25°C (mPas)	Water (% max)	Applications
VORANOL™ 240-360 Polyol	4.5	360	700	3,600	0.10	High functionality polyol designed for cross-linking in coating, adhesive, and elastomer applications.
VORANOL™ 270-370 Polyol	7.0	370	1,040	23,200	0.10	Very high-functionality polyol designed for cross-linking in construction coatings, adhesives, and elastomer applications.
VORANOL™ 4053 Polyol	6.0	31	Not defined	163 at 99°C	0.10	A unique, high-functionality, EO-rich polyether polyol designed to function as a cell-opening additive.
VORANOL™ RN 411 Polyol	4.3	412	582	5,300	0.10	High functionality polyol designed for cross-linking in coatings, adhesives, and elastomer applications.

Typical properties. Not to be construed as specifications.

Copolymer Polyols

Dow has developed copolymer polyols (also known as polymer or grafted polyols) to enhance foam load-bearing performance and firmness, enabling the production of foams with improved durability, support, and comfort. In addition, these polyols provide a highly cost-efficient way to improve load-bearing and creep resistance in foams and elastomers compared with base polyols. They also offer processing advantages by helping to "open" the foam structure and meet customer demand for low-VOC and low-viscosity solutions.

Product	Functionality	OH number	Viscosity at 25°C (mPas)	Solids %	Water (% max)	Applications
VORANOL™ 3945 Polyol	3.0	30	4,000	45	0.08	High-solids copolymer polyol with all-secondary hydroxyl groups for use in elastomers and other CASE applications, delivering improved tensile strength and modulus. Proprietary finishing provides low odor and reduced VOC content.
SPECFLEX™ NC702CN Polyol	3.0	22	4,800	40	0.07	High-solids copolymer polyol with high primary hydroxyl content for use in elastomers and other CASE applications, delivering improved elongation and resiliency. Suitable for producing high load-bearing products across a wide density range.

Typical properties. Not to be construed as specifications.

Isocyanates

Turn to Dow for industry-standard ISONATE™ and PAPI™ isocyanate products, available in a range of equivalent weights, reactivities, and viscosities to help meet specific performance requirements. Dow's product stewardship capabilities include support for comprehensive, on-site training for the safe handling, use, and disposal of isocyanates, supported by ongoing consultation from an experienced and knowledgeable team. In addition, 24/7 technical service and support help ensure safer operations, enable the development of safer products, and contribute to a safer environment.

Product	Approximate functionality	% NCO by weight	Isocyanate equivalent weight	Viscosity at 25°C (mPas)	Applications
Modified MDI					
ISONATE™ 143L Modified MDI	2.1	29.2	144.5	38	A polycarbodiimide-modified diphenylmethane diisocyanate suitable for general CASE applications, automotive parts, integral-skin plastics, car-pet underlay, adhesives, and shoe soles.
ISONATE™ 143LP Modified MDI	2.1	29.2	144.5	33	A polycarbodiimide-modified diphenylmethane diisocyanate suitable for general CASE applications, automotive parts, integral-skin plastics, carpet underlay, adhesives, and shoe soles.

Product	Approximate functionality	% NCO by weight	Isocyanate equivalent weight	Viscosity at 25°C (mPas)	Applications
Polymeric MDI					
PAPI™ 20 Polymeric MDI	3.2	30.4	138.0	1,800	Higher-functionality, high-viscosity polymeric MDI designed for use in polyisocyanurate foam, laminates, and pour-in-place insulation applications.
PAPI™ 27/135C Polymeric MDI	2.7	31.4	134.0	180	General-purpose, high-functionality polymeric MDI designed for use in cast elastomers, prepolymers, adhesives, and binder applications.
PAPI™ 2940 Polymeric MDI	2.3	32.0	131.5	50	Polymeric MDI with moderate 2,4-MDI content and higher acidity, suitable for rigid and semi-rigid foams, building panels, coatings, and prepolymers used in binder and adhesive applications.
PAPI™ 580N Polymeric MDI	3.0	30.5	136.5	700	Higher-functionality polymeric MDI designed for use in polyisocyanurate foam, laminates, and pour-in-place insulation applications.

Typical properties. Not to be construed as specifications.

Safety Considerations

Most VORANOL™, VORALUX™ and SPECFLEX™ Polyols generally present no significant hazard in use when simple precautions are followed. However, some VORANOL™, VORALUX™ and SPECFLEX™ Polyols may require additional care in handling. Before working with VORANOL™, VORALUX™ and SPECFLEX™ Polyols, it is necessary to understand the hazards involved in handling all of the components and to establish and follow safe work procedures. Products based on diisocyanates like MDI and TDI (e.g., ISONATE™ Modified MDI and PAPI™ Polymeric MDI) should always be used in a well ventilated area with appropriate local exhaust in such a way that the occupational exposure limits (OEL) for these materials are not exceeded.

Products based on MDI and TDI require care in handling due to the potential health effects associated with diisocyanates. All persons who work with these materials must know and follow proper safe handling procedures. Material Safety Data Sheets (MSDS) or Safety Data Sheets (SDS) are provided to help customers satisfy their own handling, safety, and disposal needs and those that may be required by locally applicable health and safety regulations. MSDS are updated regularly; therefore, please request and review the most current MSDS before handling or using any product. MSDS, SDS, product literature, and safe handling and storage information for all of these products are available from the nearest Dow sales office and online at www.dow.com.

Customer Notice

Dow encourages its customers to review their applications of Dow products from the standpoint of human health and environmental quality. For further information about safety considerations for your product/application, please contact your Dow sales representative

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