

A photograph of a city skyline with several modern skyscrapers, including a prominent cylindrical tower on the left. In the foreground, there is a lush green park area with a large, rounded grassy mound. The entire scene is reflected in a calm body of water, creating a symmetrical image. The sky is a clear, light blue.

PURIN[®]ATE

Polyurethane Resins



Polyurethane Resins



For any environment that affects human life, we work with you and for you to prepare a bright future for generations to come by offering innovative, environmentally friendly, and safe products manufactured with utmost attention and care by Purin working relentlessly.





Polyurethane Resins

As important as water is for our survival, it is also dangerous. We must provide all the necessary conditions for a sustainable life by using science and technology. On the one hand, we should pay attention to the careful and proper use of water, and on the other hand, we should prevent its harm to us. We must ensure that our structures, where we and our loved ones are the safest. Life is shortened by contact with water.



Concrete structures will allow water to pass into the interior. The irons that act as skeletons in concrete structures are subjected to rusting and loss of performance as a result of water contact. This makes it difficult for our buildings to survive. Therefore, waterproofing in buildings protects our lives and the lives of our loved ones.

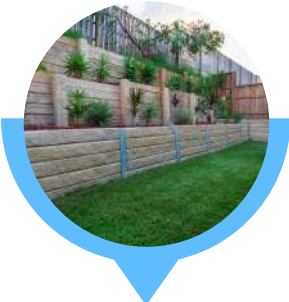


Polyurethane Resins - Areas

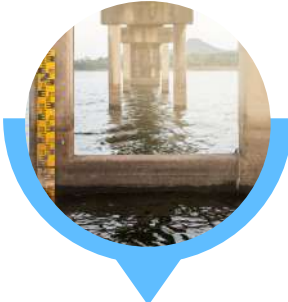
◆ When waterproofing materials are summarized, they are used in the following areas;



Foundations



Walls



Water Accumulation and
Splash Levels



Structural Features



Wet Areas



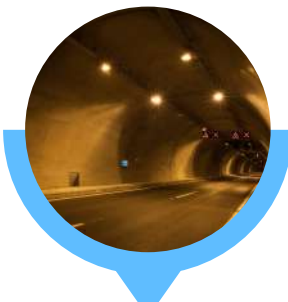
Water Areas



Warehouses



Waterways



Structures and
Gateways



Polyurethane Resins - Areas

Waterproofing should be done in every area from the foundation to the roof. The material to be selected for waterproofing must first prevent the passage of water. In addition, some mechanical properties are required. Many organic or inorganic materials have been used until today. The popular ones can be summarized as cement-based inorganics, acrylic resins, bitumen resins, bitumen-polyurethane resins, polyurethane resins.



If the isolation process is done from the direction of the water, it is called positive isolation, while if it is done from the opposite direction of the water, it is called negative isolation. Positive isolation materials are spread-based materials. Negative isolation materials are injection resins.



One-component, Aromatic, Solvent Polyurethane Membranes

One-component reactive polyurethane membranes are characterized by high mechanical strength and excellent adhesion properties. However, they risk a shelf life of 6 months if manufacturers do not follow the recommendations.

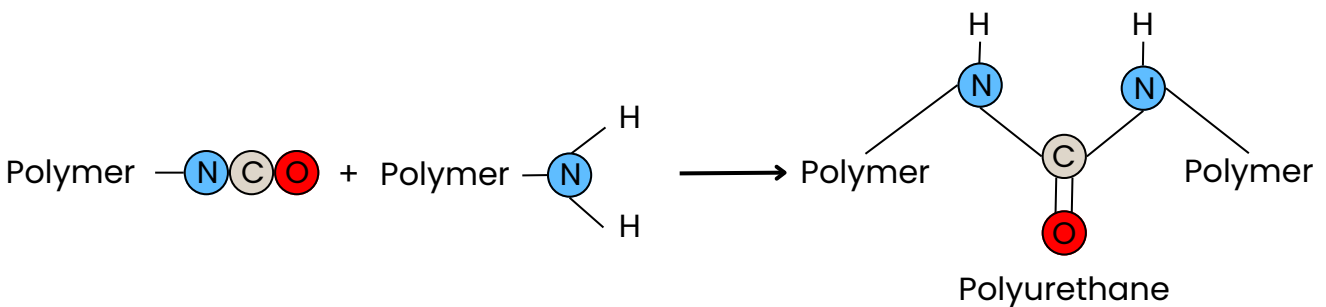
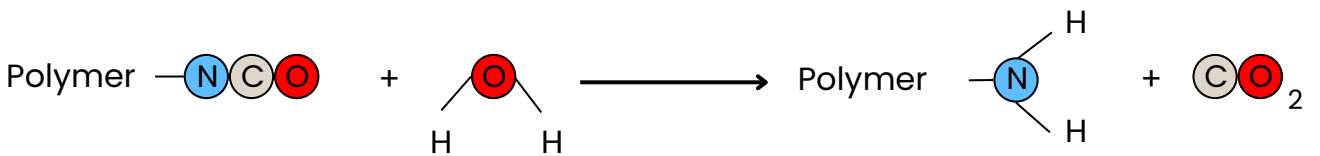
These products are a type of paint obtained by processing polyurethane prepolymer resins containing reactive ends. They are easily applied to the floor with a roller or similar equipment.



The drying process takes place as the reactive groups close under the influence of ambient humidity and temperature. While the process slows down in cold weather, it accelerates in hot weather.



Polyurethane prepolymer materials have reactive ends called NCO groups. These groups react with moisture in the air and initiate drying.

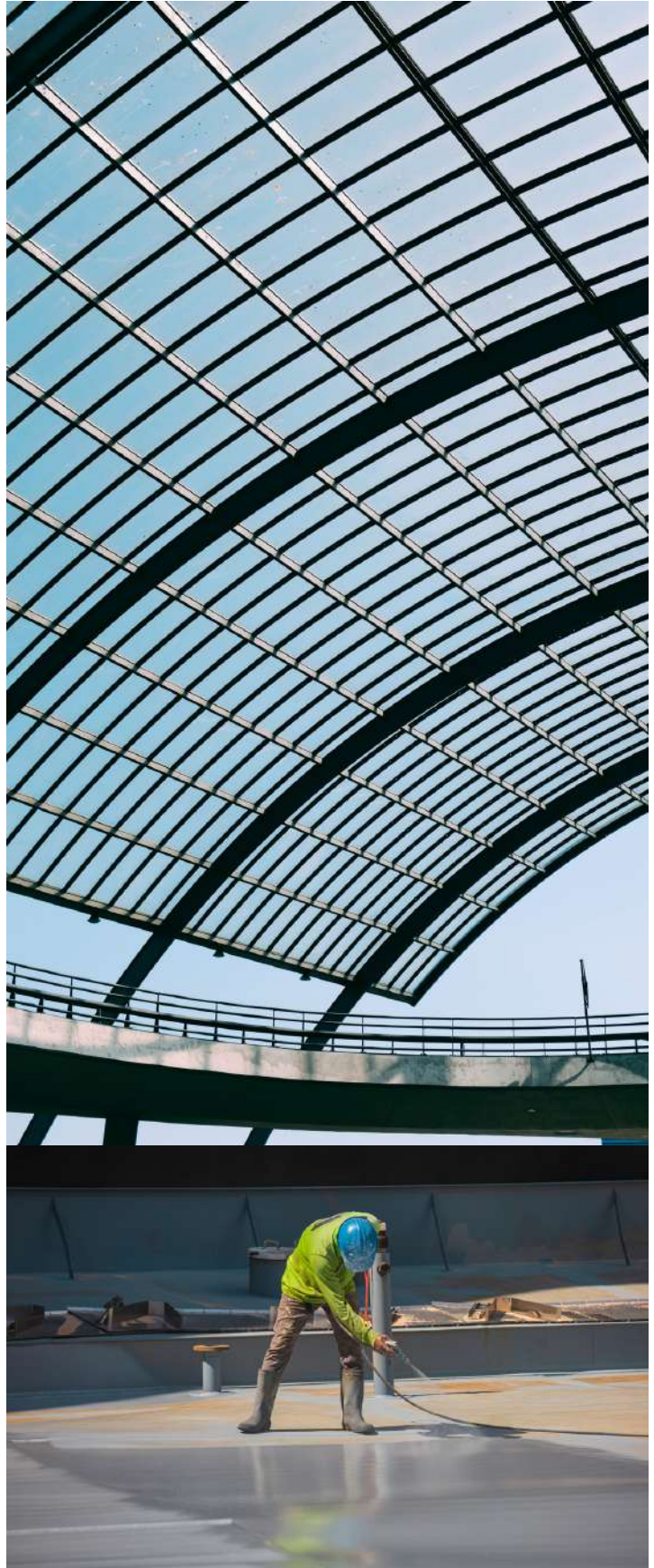




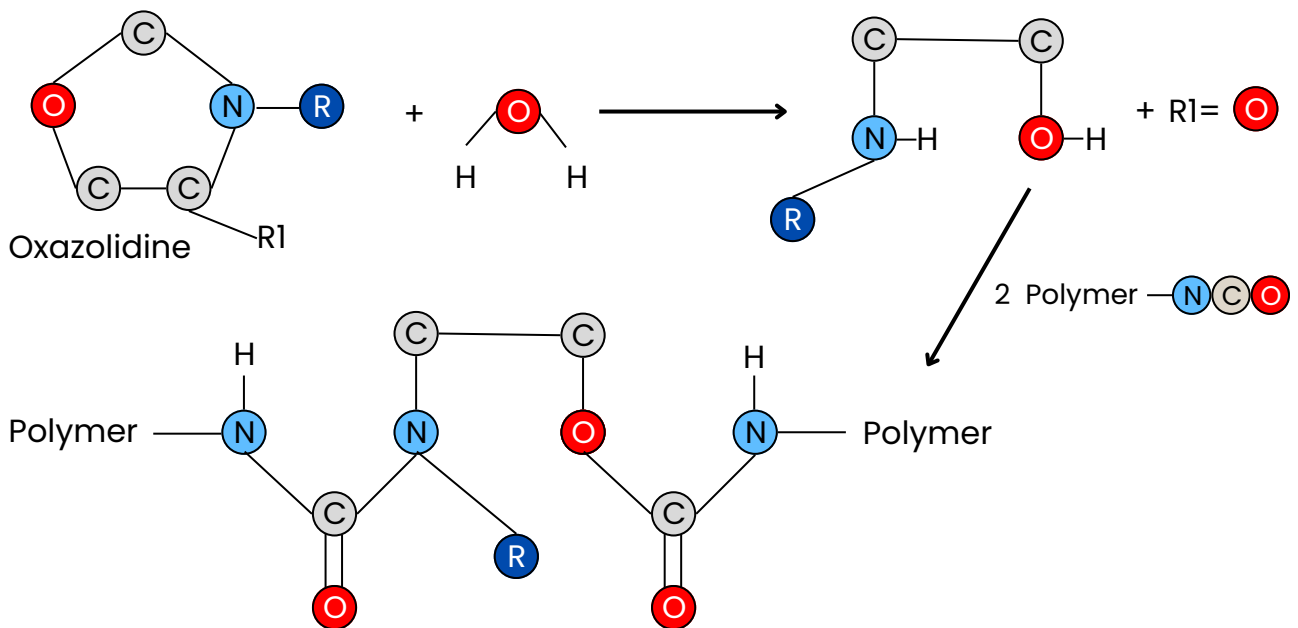
One-component, Aromatic, Solvent Polyurethane Membranes

Reactive tips react with moisture in the air; the speed of this reaction depends on ambient temperature and humidity. In thick applications, the surface absorbs moisture quickly, completes the reaction and closes the surface. However, this may cause the resin in the substrate to take a long time to dry with the moisture reaching the surface and may lead to poor adhesion. Therefore, thin application is recommended.

The advantage of thin application is that it facilitates the escape of CO₂ gas from the surface as a result of the drying reaction. In thick applications, as the surface dries quickly, the CO₂ gas in the substrates cannot escape, causing air pockets and affecting the mechanical performance of the product. Oxazolidines are one of the auxiliary drying materials used to solve this problem and ensure fast drying. These materials reach air humidity quickly, are more selective and react with their own moisture.



One-component, Aromatic, Solvent Polyurethane Membranes

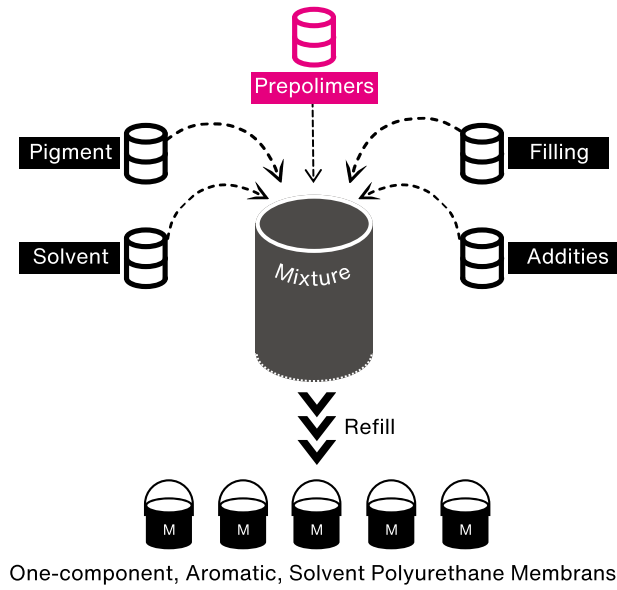


Oxazolidine reacts with moisture and opens to reveal NH₂ (amine) groups. Amine groups can react more easily with reactive ends (NCO groups) in the prepolymer. The reaction rate of NCO groups with amines is 400 times faster than with moisture (or polyols). This realizes a two-step drying reaction in the prepolymer.

One of the important issues in the production of one-component products is to pay attention to the moisture in the material. This moisture is usually caused by filler materials. It is important for manufacturers to control this moisture, otherwise the shelf life of the products can be reduced by up to 2-3 weeks. Moisture sustains reactions within the material and causes drying.



One-component, Aromatic, Solvent Polyurethane Membranes



Products	Type	Structure	NCO (%)	Viscosity (cP, 23C)	Isocyanate	Explanation
PURINATE RM 104	Aromatic	Solvent	2,5-3,5	500-600	TDI	1K Aromatic Membrane Resin
PURINATE RM 105	Aromatic	Solvent-Free	3,5-4,0	12.000-13.000	TDI	1K Aromatic Membrane Resin
PURINATE RM 304	Aromatic	Solvent	2,5-3,5	800-1.200	MDI	1K Aromatic Membrane Resin
PURINATE RM 305	Aromatic	Solvent-Free	3,5-4,0	60.000-80.000	MDI	1K Aromatic Membrane Resin
PURINATE RM 501	Aliphatic	Solvent	2,5-3,5	800-1.200	Aliphatic	1K Aliphatic Membrane Resin



Two-component, Aromatic, Solvent-free Polyurethane Membranes

Two-component polyurethane membranes are preferred where food compliance is required, in drinking water tanks and indoors. The characteristics sought in these products are that the metallic components (catalyst) must have the appropriate concentration to be safe for health.

Performance values are also important. The fact that waterproofing materials are flexible in certain proportions, resisting the oscillation of structures, reduces the risk of cracking or tearing, especially in cases such as earthquakes. This increases the effectiveness of the waterproofing process and saves costs on the structure.



Products based on the traditional Polyol and isocyanate system show limited elasticity due to the fact that their raw material structure has about 3 functionalities. These products can acquire a brittle form, especially after 30 days, which is unsuitable for waterproofing.

In order for polyurethane membranes to gain a flexible form, it is necessary to add flexibility to the polyol or isocyanate components. It is even possible to obtain highly elastic products by selecting both components in a flexible structure.

Products	Type	Structure	NCO (%)	Viscosity (cP,23C)	Isocyanate	Explanation
PURINATE RB 102	Aromatic	Solvent-Free	15,0-16,0	1.000-1.500	MDI	2K Membrane Hardener



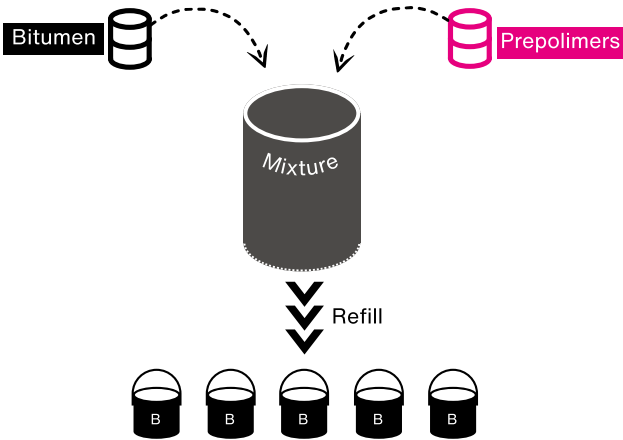
One-component, Aromatic, Solvent Bitumen Polyurethane Membranes

For applications demanding high elasticity, breaking strength, adhesion performance, and a favorable pot life, one-component bitumen-polyurethane membranes are sought after.

Bitumen materials, traditionally used as standalone insulation, are now combined with polyurethane resins to enhance their overall performance. This synergy leverages the high-performance characteristics of polyurethane resins while maintaining the cost-effectiveness of bitumen materials, resulting in affordable and high-performance products.



In these systems, one component comprises bitumen and additives, while the other component consists solely of pure polyurethane resin. The design philosophy of our products, branded as PURIN, can be schematically represented as follows.



One-component, Aromatic, Solvent Bitumen Polyurethane Membranes

Products	Type	Structure	NCO (%)	Viscosity (cP,23C)	Isocyanate	Explanation
PURINATE RM 104	Aromatic	Solvent	2,5-3,5	500-600	TDI	1K Aromatic Membrane Resin
PURINATE RM 105	Aromatic	Solvent-Free	3,5-4,0	12.000-13.000	TDI	1K Aromatic Membrane Resin
PURINATE RM 304	Aromatic	Solvent	2,5-3,5	800-1.200	MDI	1K Aromatic Membrane Resin
PURINATE RM 305	Aromatic	Solvent-Free	3,5-4,0	60.000-80.000	MDI	1K Aromatic Membrane Resin



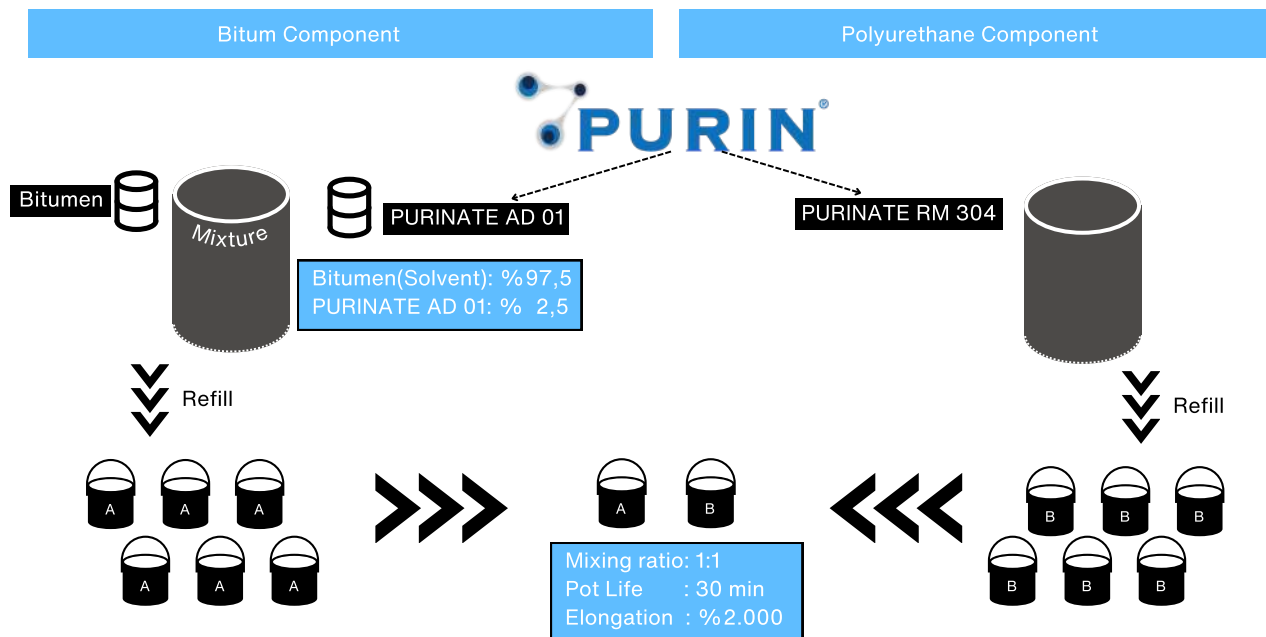
Two-component, Aromatic, Solvent Bitumen Polyurethane Membranes

Two-component Bitumen-Polyurethane membranes are sought for high elasticity, breaking strength, adhesion performance and favorable pot life.

Bitumen materials are used as stand-alone insulation materials, but are formulated with polyurethane resins to improve their performance. By combining the advantages of high performance polyurethane resins with the costs of bitumen materials, affordable and high performance products are obtained.



In these systems, one component consists of bitumen and additives, while the other component consists of pure polyurethane resin. We can schematize our products designed as PURIN as follows.



Products	Type	Structure	NCO (%)	Viscosity (cP,23C)	Isocyanate	Explanation
PURINATE RM 104	Aromatic	Solvent	2,5-3,5	500-600	TDI	1K Aromatic Membrane Resin
PURINATE RM 105	Aromatic	Solvent-Free	3,5-4,0	12.000-13.000	TDI	1K Aromatic Membrane Resin
PURINATE RM 304	Aromatic	Solvent	2,5-3,5	800-1.200	MDI	1K Aromatic Membrane Resin
PURINATE RM 305	Aromatic	Solvent-Free	3,5-4,0	60.000-80.000	MDI	1K Aromatic Membrane Resin
PURINATE AD 01	Aromatic	Solvent-Free	OH:588	400	Polilol	2K Bitumen-PU Auxiliary Resin



One-component, Polyurethane Primers and Primer Resins

Primers are materials that should definitely be used for all kinds of coating materials and the amount of use per unit area is very small. The most important requirement for primers is to adhere very well to the floor and not to lift from the surface with water coming from the negative direction.



Polyurethane primer resins we offer as PURIN and ready-to-use primer products are as follows;

Products	Type	Structure	NCO (%)	Viscosity (cP,23C)	Isocyanate	Explanation
PURINATE RP 101	Aromatic	Solvent-Free	15-16	4.000-6.000	MDI	1K Primer Resin (Color : Amber)
PURINATE RP 102	Aromatic	Solvent-Free	15-16	1.000-2.000	MDI	1K Primer Resin (Color: Light Yellow)
PURINCOAT PR 106	Aromatic	Solvent	-	<100	MDI	1K Polyurethane Primer (Color: Light brown)
PURINCOAT PR 107	Aromatic	Solvent	-	<100	MDI	1K Polyurethane Primer (Color: Colorless)
PURINCOAT PR 501	Aliphatic	Solvent	-	<100	Aliphatic	1K Polyurethane Primer



Two-component, Polyurethane Primers and Primer Resins

In the realm of waterproofing membranes, product categories achieved through Polyurethane Dispersion (PUD) systems are swiftly gaining prominence as innovative solutions in the market. Stepping away from solvent systems and addressing the performance limitations of two-component systems, membranes crafted with PUD resins emerge as effective solutions to counteract sluggishness.

These membrane types offer significant advantages for manufacturers, applicators, and end-users alike.

With an aliphatic structure, this product tackles yellowing concerns and boasts an impressive shelf life of 24 months, surpassing that of prepolymer-based 2K systems. Being water-based, it aligns with environmental considerations and is versatile for various applications. Manufacturers find production straightforward, eliminating the need for nitrogen work and moisture-absorbing systems. The water-based nature allows for direct application, removing the dependence on humidity in the application area. Overall, it provides a cost-effective solution by negating the requirement for pricey additives.



Products	Type	Structure	NCO (%)	Viscosity (cP,23C)	Isocyanate	Explanation
PURINATE HR 101	Aromatic	Solvent-Free	1,05-1,10	400-600	MDI	2K Polyurethane Primer



General Product Table

Products	Type	Structure	NCO (%)	Viscosity (cP, 23C)	Isocyanate	Explanation
PURINATE HR 101	Aromatic	Solvent-Free	1,05-1,10	400-600	MDI	2K Polyurethane Primer
PURINATE RM 104	Aromatic	Solvent	2,5-3,5	500-600	TDI	1K Aromatic Membrane Resin
PURINATE RM 105	Aromatic	Solvent-Free	3,5-4,0	12.000-13.000	TDI	1K Aromatic Membrane Resin
PURINATE RM 304	Aromatic	Solvent	2,5-3,5	800-1.200	MDI	1K Aromatic Membrane Resin
PURINATE RM 305	Aromatic	Solvent-Free	3,5-4,0	60.000-80.000	MDI	1K Aromatic Membrane Resin
PURINATE RM 501	Aliphatic	Solvent	2,5-3,5	800-1.200	Aliphatic	1K Aliphatic Membrane Resin
PURINATE RB 102	Aromatic	Solvent-Free	15,0-16,0	1.000-1.500	MDI	2K Membrane Hardener
PURINATE AD 01	Aromatic	Solvent-Free	OH:588	400	Poliolol	2K Bitumen-PU Auxiliary Resin
PURINATE RP 101	Aromatic	Solvent-Free	15-16	4.000-6.000	MDI	1K Primer Resin (Color : Amber)
PURINATE RP 102	Aromatic	Solvent-Free	15-16	1.000-2.000	MDI	1K Primer Resin (Color: Light Yellow)
PURINCOAT PR 106	Aromatic	Solvent	-	<100	MDI	1K Polyurethane Primer (Color: Light brown)
PURINCOAT PR 107	Aromatic	Solvent	-	<100	MDI	1K Polyurethane Primer (Color: Colorless)
PURINCOAT PR 501	Aliphatic	Solvent	-	<100	Aliphatic	1K Polyurethane Primer
PURINCOAT SM 102	Aliphatic	Solvent	2,5-3,5	<500	Aliphatic	1K Aliphatic transparent Coating



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