PURINOVA

New Technology Polyester Polyols

min. 70% content of renewable and recycled raw materials

I. Rigid PU / PIR
- Continuous production of PU/PIR Panels
- PU Spray Systems

II. Flexible Foam
- Viscoelastic
- High resilience (HR) foam

III. PU Adhesives / Reactive Hot Melt Adhesives, Cast Elastomers

Proven Quality and competitive price level

I.Rigid PU / PIR

Continuous production of PU/PIR Panels

PU Spray Systems

Product	Hydroxyl number	Acid Number	Viscosity	°C	Physical appearance	Main raw material	Functionality
POLIOS NT250	240-260	0,5-2,0	950-1300	25	liquid	EG, glycerine	2,1-2,2
POLIOS NT361	340-360	2,0-3,0	3500-6500	25	liquid	DEG, glycerine	3,0-3,2

Polios NT250

– Used as an additive polyol for PUR and PIR formulations
– Used as a 5-20% part of polyol side component
– Improves liquid flow due to its low Viscosity
– Higher functionality compared to standard PIR polyols
– Can improve dimensional stability
– Especially for steel faced lamination

Polios NT361

– Used mainly for PU Spray Closed Cell systems
– Used as a 30-50% part of polyol side component
– Good misicbility with other polyols and components of systems

Very good behavior with New Generation HFO Blowing Agents

Polios NT361 and Polios NT250 together with HFO:

– Polyol stability in time reactivity of polyol does not change in time of shelf lifes
– Good compatibility and miscibility between our polyol and HFO
– No need for any changes in spraying technique to achieve the good result
– No additional changes in the formulation are required to get proper mechanical properties of the foam

II. Flexible Foam
Viscoelastic and high resilience (HR) foam

Product	Hydroxyl number	Acid Number	Viscosity	°C	Physical appearance	Main raw material	Functionality
Polios NT170	160-180	max. 1,5	3600-5600	25	liquid	DEG, glycerine	2,2
Polios NT55/20	52-58	1,2-1,8	5000-9000	35	liquid	DEG, EG	2,0
Polios NT40	36-44	2,0-3,0	3000-7000	50	liquid	DEG	2,0

– Containing mainly adipic acid and 6-hydroxy caproic acid, that is the functional equivalent to caprolactone
– Due to its composition gives the product properties similar to achieved with caprolactone products
– Economically favorable and eco-friendly product

Viscoelastic foam
and high resilience foam (HR)

– Used as an additive to standard formulation, increases mechanical strength and load-bearing capacity
– Used as a partial replacement (preferably 10-60%) to graft polymers in HR foams allows keeping foam quality with significant cost reduction
– Thanks to similar reactivity in comparison to standard polyols, it does not require major changes in catalysis part of a formulation
– High hydroxyl value requires increasing isocyanate amount. However, it doesn’t affect foam quality and economical results of using it
– Because of its composition, can allow getting better results of flame test
– Thanks to high recyclable and renewable content allow getting more environmentally friendly products

Foam Formulation

HR foam formulation

Component	Content [%]					
Polyether OH-28	50	50	50	50	50	50
Graft Polyether OH-32	50	45	40	35	30	25
Polios NT170	-	5	10	15	20	25
Isocyanate – TDI 80	34,03	35,88	35,73	36,58	37,43	38,28
Water	2,2	2,2	2,2	2,2	2,2	2,2
Tin catalyst	0,1	0,1	0,1	0,1	0,1	0,1
Catalist amine Dabco 33-LV	0,13	0,13	0,13	0,13	0,13	0,13
Catalist amine Dabco BL-11	0,27	0,27	0,27	0,27	0,27	0,27
Silicone	0,5	0,5	0,5	0,5	0,5	0,5
Diethanolamine	1,35	1,35	1,35	1,35	1,35	1,35

Viscoelastic Foam Formulation Propositions

Component	Content [%]		
Polyether OH-250	70	60	50
Polyether OH-28	20	20	20
Polyether OH-38	10	10	10
Polios NT170	-	10	20
Isocyanate - MDI (NCO- 31) index 80	40,3	42,3	44,1
Water	1,2	1,4	1,6
Catalist amine Dabco 33-LV	0,23	0,23	0,23
Catalist amine Dabco BL-11	0,23	0,23	0,23
Silicone	0,65	0,65	0,65
Cell opener	0,5	0,5	0,5

III. PU Adhesives / Reactive Hot Melt Adhesives Cast Elastomers

Product	Hydroxyl number	Acid Number	Viscosity	°C	Physical appearance	Main raw material	Functionality
Polios NT170	160-180	max. 1,5	3600-5600	25	liquid	DEG, glycerine	2,2

PU Adhesives

– One and two-component adhesives can be used in many types of adhesives – solvent based, dispersion adhesives, reactive adhesives
– Low viscosity compared to other polyols
– Adhesives easy to processing by roller spraying and pouring
– Good wetting properties can be achieved

Hot melt adhesive for woodworking, book bonding, packing and other

– Using Polios NT170 in hot melt adhesive improve the most important property – surface adhesion

– Polyurethane hot melt adhesives are known for their flexibility (hard and or rubbery types), wide temperature tolerance, high-quality bonding, water resistance; Polios NT170 allow achieving all types of adhesive, for elastic to stiff, with good quality about above properties

– Hot melt adhesive becomes liquid when heated; crystallizing, it creates a strong adhesive bond; regular crystal structure achieved with Polios NT170 improve the bonding strength

– It can be used together with other, commercially available polyols, like Dynacoll 7360 (Evonik), Fomrez 66-32 (Crompton) i Stepanol PC-105P-30 (Stepan), Capa 2302 (Perstorp), Terrin 168 and Terrin 170 (Invista)*

– Polios NT170 has similar hydroxyl value to castor oil, and it contains the hydroxy acid component, which makes it a good replacement for bio-based and oil-based poliyols in polyurethane applications.

*Reactive Hot Melt Adhesives Polyurethanes With Improved Adhesion, United States Patent Application 20160333236

Elastomers and coatings

– In comparison to other traditionally used polyols – polyethers, adipic acid based polyesters, oil-base polyester – it has a relatively wide range of structural, stability depending on temperature, higher stiffness and elasticity, as well as cold flex fatigue

– Thanks to its composition, it has high hydrolytic resistance

– Reduces problems with UV resistance – compared to other polyol components (i.e., adipic acid based), it does not get darker when exposed to UV light

– Compared to castor oil it gives better mechanical properties using recyclable, waste stream product

MANAGEMENT SYSTEM CERTIFICATION
DNV·GL
ISO 9001 = ISO 14001

Quality you can trust

No matter what you choose

Purinova has a solution

Purinova
ul. Wojska Polskiego 65,
85-825 Bydgoszcz, Poland

purinova@purinova.com
purinova.com