




Saturated polyester
Resins



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Elachem Spa offers a broad range of aliphatic and aromatic polyester polyols.

The saturated polyester polyols division focus its activity onto production and manufacturing process for the PU industry in compliance to the highest EHS standard.

Elachem technical teams provides Tailor made solution to satisfy your technological requirements.



Saturated polyester polyols for Flexible PU foams

Branched Saturated Polyesters manufactured with synthetic acids and glycols.
Used in flexible foam production, mainly for textile and automotive industry

ELAPOL	Precursor	Main glycols	Structure	Appearance	OH value mg KOH/g	Acid value mg KOH/g	Brookfield viscosity (temperature) mPas	Water content %	Color	Field of use
70213	Aromatic/ Aliphatic	MPG	Highly branched	Liquid	197 - 213	≤ 4	7000 - 10000 (35°C)	≤ 0,10	≤ 150 (Hazen)	Mainly used blended (up to 50%) with other polyester polyols, e.g. Elapol 7025 B, to obtain low scorching semi-rigid foams.
7025 B	Aliphatic	DEG	Branched	Liquid	59 - 63	0,9 - 1,5	19.000 - 22.000 (25°C)	≤ 0,10	≤ 150 (Hazen)	Used in flexible slabstock foam production, mainly for textile industry applications (e.g. flame lamination).
7025 F	Aliphatic	DEG	Branched	Liquid	59 - 62	0,8 - 1,6	19.000 - 21.500 (25°C)	≤ 0,08	≤ 150 (Hazen)	Used in flexible slabstock foam production, mainly in the automotive industry. Lacton content below 0,12 %

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Saturated polyester polyols for Rigid PU foams

Aromatic and hybrid polyester polyols to produce rigid foams with high fire resistance, high rigidity and improved mechanical properties .

ELAPOL	Precursor	Main glycols	Structure	Appearance	OH value mg KOH/g	Acid value mg KOH/g	Brookfield viscosity (temperature) mPa.s	Water content %	Color	Field of use
81250	Aromatic	DEG	Highly branched	Liquid	240 - 260	≤ 1,0	2.700 - 3.100 (25°C)	≤ 0,10	≤ 3 (Gardner)	Used in PIR (polyisocyanurates) to improve fire-resistance and thermal insulation.
80250	Aromatic	DEG	Linear	Liquid	230 - 270	≤ 1,5	3.500 - 4.500 (25°C)	≤ 0,15	≤ 3 (Gardner)	
80315 B	Aromatic	DEG	Linear	Liquid	300 - 330	≤ 3	2000 - 3000 (25°C)	≤ 0,15	≤ 250 (Hazen)	
81191	Aromatic modified	DEG	Linear	Liquid	200 - 220	≤ 1	4.500 - 5.500 (25°C)	≤ 0,10	≤ 3 (Gardner)	
85250	Hybrid	DEG	Linear	Liquid	240 - 260	≤ 3,0	3.000 - 4.500 (25°C)	≤ 0,15	≤ 7 (Gardner)	
87191	Hybrid	DEG	Linear	Liquid	190 - 210	0,6 - 1,0	4.000 - 6.000 (25°C)	≤ 0,10	≤ 8 (Gardner)	

For more information about additional and special grades not listed in the above table it is advisable to consult the brochure:

**"Saturated polyester for
PU Thermal Insulation Rigid foams"**

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Saturated polyester polyols for Casting Elastomers and TPU

Saturated Polyesters manufactured with synthetic acid and glycols. Gives good Hydrolysis resistance and good mechanical properties.

ELAPOL	Precursor	Main glycols	Structure	Appearance	OH value mg KOH/g	Acid value mg KOH/g	Brookfield viscosity (temperature) mPa.s	Water content %	Color	Field of use
5520 A	Aliphatic	1,4-BDO, MEG	Linear	Waxy	54 - 58	≤ 0,7	4700 - 5200 (35°C)	≤ 0,1	≤ 50 (Hazen)	Very good physical and mechanical properties. Can be used to produce cast elastomers and TPU (thermoplastic polyurethane elastomers).
5520 C	Aliphatic	1,4-BDO, MEG	Linear	Waxy	54 - 58	≤ 0,5	4000 - 5100 (35°C)	≤ 0,1	≤ 100 (Hazen)	
5420 A	Aliphatic	1,4-BDO, MEG	Linear	Waxy	54 - 58	≤ 0,4	4700 - 5200 (35°C)	≤ 0,1	≤ 50 (Hazen)	
5530 A	Aliphatic	MEG	Linear	Solid	35 - 38	≤ 0,7	10.000 - 11.000 (35°C)	≤ 0,1	≤ 100 (Hazen)	
3030 A	Aliphatic	MEG	Linear	Solid	37 - 40	≤ 0,7	2300 - 2600 (60°C)	≤ 0,1	≤ 100 (Hazen)	Good general properties. These products combine competitive prices and good performances. They can be used with NDI or MDI to produce cast elastomers or with MDI in the production of TPU.
3020 A	Aliphatic	MEG	Linear	Solid	54 - 58	≤ 0,7	450 - 600 (75°C)	≤ 0,1	≤ 100 (Hazen)	
3010 A	Aliphatic	MEG	Linear	Solid	108 - 116	≤ 0,7	450 - 650 (50°C)	≤ 0,08	≤ 100 (Hazen)	

ELAPOL	Precursor	Main glycols	Structure	Appearance	OH value mg KOH/g	Acid value mg KOH/g	Brookfield viscosity (temperature) mPa.s	Water content %	Color	Field of use
5030 A	Aliphatic	1,4-BDO	Linear	Solid	37 - 40	≤ 0,5	2500 - 4000 (60°C)	≤ 0,05	≤ 50 (Hazen)	Very good physical and mechanical properties. Good hydrolysis resistance. They can be used to produce cast elastomers and TPU.
5020 A	Aliphatic	1,4-BDO	Linear	Solid	54 - 58	≤ 0,5	1300 - 1500 (60°C)	≤ 0,1	≤ 40 (Hazen)	
5010 A	Aliphatic	1,4-BDO	Linear	Solid	114 - 122	≤ 0,3	200 - 400 (60°C)	≤ 0,05	≤ 30 (Hazen)	
6030 A	Aliphatic	1,6-hexanediol	Linear	Solid	35 - 49	≤ 0,7	2800 - 3100 (60°C)	≤ 0,1	≤ 50 (Hazen)	Excellent physical and mechanical properties, especially at low temperature. Good hydrolysis resistance. Mainly used in the production of TPU.
6020 A	Aliphatic	1,6-hexanediol	Linear	Solid	54 - 58	≤ 0,5	1100 - 1300 (60°C)	≤ 0,1	≤ 100 (Hazen)	
6010 B	Aliphatic	1,6-hexanediol	Linear	Solid	108 - 118	≤ 1,0	300 - 500 (50°C)	≤ 0,1	≤ 100 (Hazen)	
2020 A	Aliphatic	1,6-hexanediol	Linear	Solid	54 - 58	≤ 0,5	4200 - 4700 (35°C)	≤ 0,1	≤ 150 (Hazen)	It is a fair compromise between good properties and general performance with competitive price.

Saturated polyester polyols for Polyurethane Coatings

Saturated Polyesters manufactured with synthetic acid and glycols. Excellent physical and mechanical properties and flexing resistance.

ELAPOL	Precursor	Main glycols	Structure	Appearance	OH value mg KOH/g	Acid value mg KOH/g	Brookfield viscosity (temperature) mPa.s	Water content %	Color	Field of use
2020 B	Aliphatic	MEG, DEG	Linear	Waxy	54 - 58	≤ 0,5	4200 - 4700 (35°C)	≤ 0,1	≤ 150 (Hazen)	Very good physical and mechanical properties. Good hydrolysis resistance. They can be used to produce cast elastomers and TPU.
5520 A	Aliphatic	1,4-BDO, MEG	Linear	Waxy	54 - 58	≤ 0,5	4000 - 5100 (35°C)	≤ 0,1	≤ 100 (Hazen)	Excellent physical and mechanical properties, especially at low temperature. Good hydrolysis resistance. Mainly used in the production of TPU.
5420 A	Aliphatic	1,4-BDO, MEG	Linear	Waxy	54 - 58	≤ 0,4	4700 - 5200 (35°C)	≤ 0,05	≤ 50 (Hazen)	
5520 C	Aliphatic	1,4-BDO, MEG	Linear	Waxy	54 - 58	≤ 0,5	3000 - 5000 (40°C)	≤ 0,03	≤ 50 (Hazen)	
5508 A	Aliphatic	1,4-BDO, MEG	Linear	Waxy	136 - 140	≤ 0,5	1600 - 1800 (25°C)	≤ 0,1	≤ 60 (Hazen)	
5030 A	Aliphatic	1,4-BDO	Linear	Solid	37 - 40	≤ 0,5	2500 - 4000 (60°C)	≤ 0,05	≤ 50 (Hazen)	It is a fair compromise between good properties and general performance with competitive price.
5020 A	Aliphatic	1,4-BDO	Linear	Solid	54 - 58	≤ 0,5	1300 - 1500 (60°C)	≤ 0,1	≤ 40 (Hazen)	
5010 A	Aliphatic	1,4-BDO	Linear	Solid	114 - 122	≤ 0,3	200 - 400 (60°C)	≤ 0,05	≤ 30 (Hazen)	

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ELAPOL	Precursor	Main glycols	Structure	Appearance	OH value mg KOH/g	Acid value mg KOH/g	Brookfield viscosity (temperature) mPa.s	Water content %	Color	Field of use
9020 A	Aliphatic	1,4-BDO, NPG	Linear	Liquid	54 - 58	≤ 1	8200 - 9800 (35°C)	≤ 0,1	≤ 100 (Hazen)	Used in the production of coating PU resins and in the processes of coagulation. Excellent physical and mechanical properties with good resistance to hydrolysis.
9010 A	Aliphatic	1,4-BDO, NPG	Linear	Liquid	108 - 116	≤ 1	1800 - 2600 (35°C)	≤ 0,1	≤ 100 (Hazen)	
10030 A	Aromatic/ Aliphatic	1,6- hexanediol	Linear	Solid	33 - 37	≤ 0,7	5100 - 7000 (70°C)	≤ 0,08	≤ 200 (Hazen)	Used in the production of water-based PU dispersions for leather finishing. Excellent physical and mechanical properties; high hydrolysis resistance.
10020 A	Aromatic/ Aliphatic	1,6- hexanediol	Linear	Solid	54 - 58	≤ 0,8	900 - 1300 (75°C)	≤ 0,08	≤ 150 (Hazen)	
6510 B	Aliphatic	NPG, 1,6- hexanediol,	Linear	Solid	117 - 123	< 0,6	250 - 300 (60°C)	< 0,1	< 100 (Hazen)	Excellent hydrolysis resistance and good flexibility in a wide temperature range.
6520 B	Aliphatic	NPG, 1,6- hexanediol	Linear	Solid	54 - 58	< 0,7	5000 - 5800 (35°C)	< 0,1	< 100 (Hazen)	
4028 A	Aliphatic	DEG	Linear	Liquid	38 - 42	≤ 0,8	7000 - 8000 (35°C)	≤ 0,08	≤ 100 (Hazen)	Mainly used in the production of PU in solution for coating. Excellent elastomeric properties and average general features.
4010 A	Aliphatic	DEG	Linear	Liquid	108 - 116	≤ 1	900 - 1150 (35°C)	≤ 0,1	< 100 (Hazen)	
4004 A	Aliphatic	DEG	Linear	Liquid	271 - 289	≤ 0,8	280 - 380 (25°C)	≤ 0,08	≤ 100 (Hazen)	

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Saturated polyester polyols for Polyurethane Adhesives

Saturated Polyesters manufactured with synthetic acid and glycols used in the production of Adhesives for Footwear, Flexible Packaging and Hot Melt.

ELAPOL	Precursor	Main glycols	Structure	Appearance	OH value mg KOH/g	Acid value mg KOH/g	Brookfield viscosity (temperature) mPa.s	Water content %	Color	Field of use
5030 A	Aliphatic	1,4-BDO	Linear	Solid	37 - 40	≤ 0,5	2500 - 4000 (60°C)	≤ 0,05	≤ 50 (Hazen)	Good physical and mechanical properties. Good hydrolysis resistance. Used in the production of granules and solvent based polyurethane adhesives.
5020 A	Aliphatic	1,4-BDO	Linear	Solid	54 - 58	≤ 0,5	1300 - 1500 (60°C)	≤ 0,1	≤ 40 (Hazen)	
5010 A	Aliphatic	1,4-BDO	Linear	Solid	114 - 122	≤ 0,3	200 - 400 (60°C)	≤ 0,05	≤ 30 (Hazen)	
6035 B	Aliphatic	1,6-hexanediol	Linear	Solid	29 - 34	≤ 1,5	3.200 - 4.200 (60°C)	< 0,1	≤ 100 (Hazen)	Excellent physical and mechanical properties, especially at low temperature. High hydrolysis resistance. Used in the production of granules and solvent based polyurethane adhesives.
6030 A	Aliphatic	1,6-hexanediol	Linear	Solid	36 - 40	≤ 0,5	1600 - 1800 (70°C)	< 0,1	≤ 100 (Hazen)	
6020 A	Aliphatic	1,6-hexanediol	Linear	Solid	54 - 58	≤ 0,5	560 - 760 (70°C)	< 0,1	≤ 100 (Hazen)	
6010 B	Aliphatic	1,6-hexanediol	Linear	Solid	108 - 118	< 1	300 - 500 (50°C)	< 0,1	≤ 100 (Hazen)	

ELAPOL	Precursor	Main glycols	Structure	Appearance	OH value mg KOH/g	Acid value mg KOH/g	Brookfield viscosity (temperature) mPa.s	Water content %	Color	Field of use
11110 B	Aromatic/ Aliphatic	DEG	Linear	Liquid	110 - 114	< 1	7000 - 7800 (25°)	< 0,1	< 150 (Hazen)	Good flexibility in a wide temperature range. Used for one- and two-component adhesives, usually in ethyl acetate solution.
11117 B	Aromatic/ Aliphatic	DEG	Linear	Liquid	62 - 66	< 0,8	5400 - 6200 (50°C)	< 0,08	< 100 (Hazen)	
11108 B	Aromatic/ Aliphatic	DEG	Linear	Liquid	133 -143	< 1	1700 - 2200 (25°C)	< 0,1	< 100 (Hazen)	
6520 B	Aliphatic	NPG, 1,6- hexanediol	Linear	Liquid	54 - 58	≤ 0,7	5000 - 5800 (35°C)	< 0,1	≤ 100 (Hazen)	Excellent hydrolysis resistance and good flexibility in a wide temperature range. Used for one- and two-component adhesives, usually in ethyl acetate solution.
6510 B	Aliphatic	NPG, 1,6- hexanediol	Linear	Liquid	117 - 123	≤ 0,6	250 - 300 (60°C)	< 0,1	≤ 100 (Hazen)	
4028 A	Aliphatic	DEG	Linear	Liquid	38 - 42	≤ 0,8	7000 - 8000 (35°C)	< 0,1	≤ 100 (Hazen)	Good flexibility in a wide temperature range. Used for one- and two-component adhesives, both solvent- or water-based.
4010 A	Aliphatic	DEG	Linear	Liquid	108 - 116	≤ 1	900 - 1150 (35°C)	< 0,1	≤ 100 (Hazen)	

Saturated polyester polyols for Polyurethane systems for Footwear Industry

Branched and linear Saturated Polyesters manufactured with synthetic acids and glycols.
Excellent mechanical properties and low density.

ELAPOL	Precursor	Main glycols	Structure	Appearance	OH value mg KOH/g	Acid value mg KOH/g	Brookfield viscosity (temperature) mPa.s	Water content %	Color	Field of use
7025 B	Aliphatic	DEG	Branched	Liquid	59 - 63	0,9 - 1,5	8800 - 9800 (35°C)	≤ 0,1	≤ 150 (Hazen)	Mainly used for prepolymers and polyols for the production of women's and men's shoe soles with good performance in temperate climates.
7020 B	Aliphatic	DEG	Branched	Liquid	64 - 68	≤ 0,5	4000 - 4600 (35°C)	≤ 0,1	≤ 150 (Hazen)	
2030 A	Aliphatic	MEG, DEG	Linear	Solid	35 - 39	≤ 0,5	9000 - 10500 (35°C)	≤ 0,1	≤ 100 (Hazen)	Can be used for the production of prepolymers and polyols. Good flexing resistance and physical properties. Used in the production of men's and women's footwear in temperate climates.
2120 B	Aliphatic	MEG, DEG	Linear	Solid	56 - 60	≤ 0,5	480 - 550 (75°C)	≤ 0,05	≤ 100 (Hazen)	
2020 B	Aliphatic	MEG, DEG	Linear	Solid	54 - 58	≤ 0,5	4200 - 4700 (35°C)	≤ 0,1	≤ 100 (Hazen)	
2010 B	Aliphatic	MEG, DEG	Linear	Solid	108 - 116	≤ 0,5	1150 - 1250 (35°C)	≤ 0,1	≤ 100 (Hazen)	

Branched and linear Saturated Polyesters manufactured with dicarboxylic acids and glycols.
Used in polyols for the production of sandals with low moulding density.
Being slightly branched, extraction time is reduced.

ELAPOL	Precursor	Main glycols	Structure	Appearance	OH value mg KOH/g	Acid value mg KOH/g	Brookfield viscosity (temperature) mPa·s	Water content %	Color	Field of use
1120 B	Dicarboxylic	MEG, DEG	Linear	Liquid	54 - 58	≤ 1	700 - 850 (75°C)	≤ 0,1	≤ 12 (Gardner)	Used in polyols for the production of sandals with low moulding density. Being slightly branched, extraction time is reduced.
1020 A	Dicarboxylic	MEG	Branched	Liquid	60 - 64	≤ 1	9000 - 11000 (35°C)	≤ 0,03	≤ 12 (Gardner)	
1030 B	Dicarboxylic	MEG	Branched	Liquid	36 - 40	≤ 1	5000 - 6000 (50°C)	≤ 0,1	≤ 10 (Gardner)	



Elachem was founded in Vigevano in 2001 and specialises in the production of polyurethane systems mainly for the footwear industry. Following the increase in the production of polyurethane systems and the need to be increasingly competitive on the market, Elachem S.p.a. has decided to integrate with a plant for the production of saturated polyester resins, designed according to individual requirements, and produced with the guarantee of a consolidated experience.

Our history has allowed us to become a market leader, with an annual production of 90,000 tons and satisfied business partners all over the world. The flagships of Elachem are its latest generation laboratories, thanks to which we execute the entire production process, from design to testing.

QHSE Certifications



UNI EN ISO
9001:2015



UNI EN ISO
14001:2015



UNI ISO
45001:2018



Worldwide exporter of Saturated polyester polyols

for polyurethane systems for footwear industry

for casting elastomers and TPU

for flexible and rigid PU foams

for polyurethane adhesives

for polyurethane coatings



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