

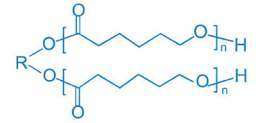


# Performance Chemicals

PCL Product Overview



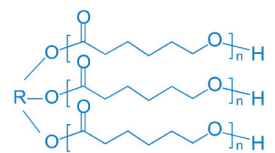
## PCL diols PCL-2000 Series



PCL-2000 series products are polycaprolactone (PCL) diols which polymerized by small molecule diols and caprolactone monomer. The PCL diols synthesized polyurethane will get better hydrolysis resistance and low temperature flexibility than the adipic acid based polyester diols, and better heat resistance, weatherability and higher strength than the polyether diols. <sup>a)</sup>

Grade	g/mol	Appearance/ Status	Color (APHA)	Hydr-value mgKOH/g	Acid value mgKOH/g	Water content (%)	FUP (°C)	Viscosity (mPa s/60°C)
2044	400	Liquid	≤30	280 ± 10	≤0.5	≤0.03	N/A	45
2053	530	Liquid	≤30	212 ± 8	≤0.5	≤0.03	N/A	60
2083	830	Pasty	≤30	135 ± 4	≤0.5	≤0.03	35-40	115
2102	1000	Waxy	≤30	112 ± 4	≤0.3	≤0.03	35-50	150
2105	1000	Waxy	≤30	112 ± 4	≤0.3	≤0.03	35-50	160
2202	2000	Waxy	≤30	56 ± 2	≤0.3	≤0.03	45-55	400
2204	2000	Waxy	≤30	56 ± 2	≤0.3	≤0.03	45-56	400
2205	2000	Waxy	≤30	56 ± 2	≤0.3	≤0.03	45-56	400
2302	3000	Waxy	≤30	37 ± 2	≤0.3	≤0.03	50-58	830
2304	3000	Waxy	≤30	37 ± 2	≤0.3	≤0.03	50-58	950
2404	4000	Waxy	≤30	28 ± 2	≤0.3	≤0.03	55-60	1700

## PCL triols PCL-3000 Series



PCL-3000 series products are PCL triols which polymerized by small molecule triol and caprolactone monomer, which can be used to improve the flexibility of surface coating as raw material or additive, and also can be used to improve the low temperature performance of Polyurethane foam as raw material. <sup>a)</sup>

Grade	g/mol	Appearance/ Status	Color (APHA)	Hydr-value mgKOH/g	Acid value mgKOH/g	Water content (%)	FUP (°C)	Viscosity (mPa s/60°C)
3037	300	Liquid	≤30	560 ± 20	≤1.0	≤0.03	N/A	170
3057	550	Liquid	≤30	306 ± 10	≤1.0	≤0.03	N/A	150
3097	900	Pasty	≤30	187 ± 5	≤1.0	≤0.03	N/A	160
3207	2000	Waxy	≤30	84 ± 4	≤0.5	≤0.03	35-45	300

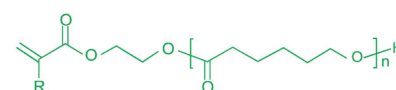


## Special PCL polyols

This series products are the PCL polyols which polymerized the modified by caprolactone monomer with special polyols as the initiator. PCL-2200T retains the strength of the PCL polyol and also improves the low temperature characteristics, water resistance and abrasion resistance of the PU elastomer and mechanical properties. 2200C is a high hydrolysis and temperature resistant poly-caprolactone Polyol, which is commonly used in special polyurethane adhesives, polyurethane elastomers and other applications. <sup>a)</sup>

Grade	g/mol	Appearance/ Status	Color (APHA)	Hydr-value mgKOH/g	Acid value mgKOH/g	Water content (%)	FUP (°C)	Viscosity (mPa s/60°C)
2200T	2000	Pasty	≤30	56 ± 2	≤0.3	≤0.03	N/A	340
2200C	2000	Liquid/ Pasty	≤50	56 ± 2	≤0.3	≤0.03	N/A	1050

## PCL-H Series



PCL-H series products are macromolecular monomer which polymerized by hydroxyethyl(methyl)acrylate and caprolactone monomer. The coatings made from this series have excellent scratch resistance, abrasion resistance, low temperature flexibility, good elasticity, bonding and workability. <sup>a)</sup>

Grade	g/mol	Appearance/ Status	Color (APHA)	Hydr-value mgKOH/g	Acid value mgKOH/g	Water content (%)	FUP (°C)	Viscosity (mPa s/60°C)
HA2	230	Liquid	≤50	244	≤3.0	≤0.03	30	500
HA3	344	Liquid	≤50	163	≤3.0	≤0.03	76	500
HA4	458	Liquid	≤50	123	≤3.0	≤0.03	140	500
HAM2	244	Liquid	≤50	230	≤3.0	≤0.03	30	500
HAM3	358	Liquid	≤50	157	≤3.0	≤0.03	70	500
HAM4	472	Liquid	≤50	119	≤3.0	≤0.03	125	1000

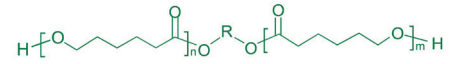
Remark: Hydr-value is a theoretical value

### a) Packaging, Transportation and Storage:

Products are packed in special baking painted metal drums, 200kg/drum, or small drums with 20kg/drum according to the customers request. Avoid from rain, collision, package damage and pollution during transportation and comply with the related regulation of transport department. Undisturbed packaging as delivered until shortly before use, stored in the shade avoid from water, moisture, air contacting and direct sunlight.



## PCL-polymers Series



This series products are degradable aliphatic polyester resin with high molecular weight >10000, which can be used as raw materials for low-temperature molding materials, surgical splinting, hot-melt adhesives, children's toy, 3D printing and bio-degradable materials. <sup>b)</sup>

Grade	g/mol	Appearance/Status	Acid value mgKOH/g	FUP (°C)	Melt flow index (g/10min)
PCL6500	50000	White pellet	≤1.0	60-62	17
PCL6800	80000	White pellet	≤1.0	60-62	5

The test condition of melt flow index is 2.16kg, 160°C.

### b) Packaging, Transportation and Storage:

Products are packed in special drums, 200kg/drum, or small drums with 20kg/drum according to the customers request. Avoid from rain, collision, package damage and pollution during transportation and comply with the related regulation of transport department. Undisturbed packaging as delivered until shortly before use, stored in the shade avoid from water, moisture and direct sunlight.

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