



**METAFRAX
CHEMICALS**

CAPROLON (BLOCK POLYAMIDE 6)

Application

Caprolon is used as antifriction, electric insulating and construction material in various industries to produce large-sized, thick-walled, small-lot, non-standard items, general components.

Packaging Product is delivered to the customer without any packaging.

Transportation and storage

Caprolon is transported by all modes of transport in closed transport facilities according to the Rules of goods carriage, valid for this mode of transport. Caprolon is kept in indoor storage of any type excluding direct humidity.

Manufacturer's guaranty

Guaranty period of storage to be 4 years from the manufacturing date, provided that all transportation and shipment rules are observed.

Purchasing of the product

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Main physical and chemical features

Parameter name	Norm			
	ПА 6		ПА 6-МГ	ПА 6-МДМ
	Grade A	Grade B		
Appearance	Sheets, tubes, rods with smooth surface without holes, cracks, from white to cream color		Sheets, tubes, rods with smooth surface without holes, cracks, from grey to black color	
Pores number from 0,8 to 1,5 mm on the product surface, pcs., no more	None	2	2	2
Bending stress at inflexion equal to 1,5 thickness of a sample, mPa, no less	90	80	95	85
ПА 6-МГ – block polyamide 6, modified by graphite				
ПА 6-МДМ – block polyamide 6, modified by molybdenum disulphide				

Approximate sizes of sheets In mm

Length, L _{max}	Limit deviation	Width, B	Limit deviation	Thickness, s	Limit deviation
1400	+50	950	±50	10, 15, 20	+2
1400	+50	1000	±50	25, 30, 35, 40, 50, 60, 70	+2
1400	+50	1000	±50	80, 90, 100, 110, 120, 150, 180, 210, 240, 270, 300	+5



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CHEMICALS**

**Approximate sizes of tubes
In mm**

Length, $L_{\max}$	Limit deviation	Outside diameter, D_H	Limit deviation	Inside diameter, d	Limit deviation
1400	+50	100	+5	45 – 90	-10
1400	+50	120	+5	52 – 100	-10
1400	+50	150	+5	55 – 130	-10
1400	+50	170	+5	60 – 140	-10
1400	+50	175	+5	60 – 150	-10
1400	+50	190	+5	65 – 170	-10
1400	+50	220	+5	70 – 180	-10
1400	+50	240	+5	80 – 210	-10
1400	+50	250	+5	85 – 220	-20
1400	+50	270	+5	90 – 230	-20
1400	+50	290	+5	100 – 240	-20
1400	+50	315	+7	110 – 260	-20
1400	+50	350	+7	120 – 280	-20
1400	+50	390	+7	140 – 340	-20
1400	+50	450	+7	150 – 370	-20
1400	+50	490	+7	170 – 400	-20
1400	+50	580	+10	180 – 460	-20



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**Approximate sizes of rods
In mm**

Lenght, L	Limit deviation	Diameter, D	Limit deviation
1000	+50	20	+1
1000	+50	25	+1
1000	+50	30	+1
1000	+50	40	+1
1000	-100	45	+2
1000	-100	50	+2
1000	-100	60	+2
1000	-100	70	+2
1000	-100	80	+2
1000	-100	90	+2
950	±50	100	+3
950	±50	120	+3
950	±50	130	+3
950	±50	150	+3
950	±50	160	+3
950	±50	170	+3
950	±50	180	+3
950	±50	207	+5
700	±100	227	+5
700	±100	240	+5
700	±100	250	+5
700	±100	280	+5
700	±100	288	+5
700	±100	297	+5



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Approximate sizes of rods
In mm
(part II)

Lenght, <i>L</i>	Limit deviation	Diameter, <i>D</i>	Limit deviation
700	±50	315	+5
700	±50	340	+5
500	±50	440	+6
500	±50	460	+6
500	±50	510	+6
500	±50	570	+6
500	±50	595	+6
500	±50	670	+6
500	±50	805	+11

Note:

At the Customer's request the dimensions of sheets, tubes and rods (*L*, *B*, *s*) can be changed.



Caprolon reference parameters

Item	Parameter figure		
	ПА 6	ПА 6-МГ	ПА 6-МДМ
1. Density, kg/m ³	1140 - 1160	1140 - 1170	1140 - 1160
2. Tension modulus, MPa	2300 - 3000	2500 - 4600	2500 - 3000
3. Tensile yield stress, MPa	65 - 80	65 - 80	65 - 80
4. Stress at break, mPa	70 - 80	65 - 80	70 - 85
5. Elongation at rupture, %	> 20	10 - 30	> 25
6. Stress at relative compression strain equal to 25%, mPa	120 - 130	120 - 140	120 - 140
7. Fiction coefficient against steel	0,23 - 0,33	0,20 - 0,25	0,20 - 0,25
8. Ball indentation hardness, mPa	160 - 180	170 - 200	160 - 180
9. Impact viscosity, kJ/m ² , no less:			
without cut	120*	40	120*
with cut	3	4	3
10. Water absorption:			
for 24 hours, %	1,5 - 2,0	1,0 - 1,5	1,0 - 1,5
max %	6,0 - 7,0	6,5 - 7,0	6,0 - 7,0
11. Extractives content, %, no more	2,0	2,0	2,0
12. Melting point, °C	220 - 225	215 - 225	220 - 225
13. Bending temperature under load at stress 1,8 mPa, °C	80 - 100	80 - 100	80 - 100
14. Conductivity factor at room temperature, W/m °C.	0,30 - 0,35	0,37 - 0,50	0,30 - 0,40



Caprolon reference parameters
(part II)

15. Mean coefficient of linear thermal expansion for 1°C in temperature intervals:

от – 50 °C до 0 °C	$6,6 \cdot 10^{-5}$	$6,6 \cdot 10^{-5}$	$2,8 \cdot 10^{-5}$
от 0 °C до + 50 °C	$9,8 \cdot 10^{-5}$	$9,8 \cdot 10^{-5}$	$4,0 \cdot 10^{-5}$

16. Electric strength, kW/mm	25 – 35	–	20 – 25
17. Surface resistivity, Ом	$1 \cdot 10^{14}$ – $3 \cdot 10^{15}$	$1 \cdot 10^{11}$ – $1 \cdot 10^{13}$	$1 \cdot 10^{12}$ – $1 \cdot 10^{13}$
18. Volume resistivity, Ом·m	$1 \cdot 10^{14}$ – $8 \cdot 10^{14}$	$1 \cdot 10^{11}$ – $1 \cdot 10^{13}$	$1 \cdot 10^{13}$ – $1 \cdot 10^{14}$
19. Dielectric loss factor at 10^6 Hz	0,015 – 0,025	0,020 – 0,030	0,015 – 0,025
20. Dielectric capacity at 10^6 Hz	3,3 – 3,5	3,5 – 4,0	3,3 – 3,6

*** Samples do not destroy when tested**