

# Technical Yarn Table

All the following figures are based on average properties of different yarn brands



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Family name	Specific Gravity kg/dm <sup>3</sup>	Tenacity gr/den	Elongation %	Elastic Modulus GPa	LOI %	Moisture equilibrium %	Max. Cont. operating temp °C	Melting point °C	Decomposition temp °C	Abrasion resistance	UV resistance	Thermal conductivity w/m.k	Shrinkage@ 180°C (30 min) %	Linear coefficient of thermal expansion 10 <sup>-6</sup> K
UHMWPE-H***	0,97	40	3,5	120	19	0	70	144	300	excellent	excellent	20	melts	-12
UHMWPE-M****	0,97	30 - 36	3,5	90	19	0	70	144	300	excellent	excellent	20	melts	-12
PVA	1,3	11,1	6,6	30	22	5	200	240	-	good	good	-	0,6	-
Polyester	1,38	7 - 9,4	12 - 27	3 - 15	22	0,4	150	260	350	good	good	0,15	1 - 10	0,7
Polyamide	1,14	8 - 10,4	17 - 30	1 - 3	23	4,5	150	220	350	excellent	excellent	-	3 - 9	-
Technora®	1,39	25-28	4,6	73	25	2	200	none	500	fair	fair	0,04	0,1	-6
LCP/Polyarylate HT	1,41	26	3,8	75	28	<0.1	200	350	450	good	fair	1,5	<0.2	-4,8
Meta-aramid	1,38	5	30	17	29	6,5	200	none	427	good	good	0,25	1,3	0,18
Poly-oxadiazole	1,44	5	15	25	30	9	250	none	500	good	fair	-	0,5	-
PEI	1,27	2,9	70	3	31	2	190	375	450	poor	fair	-	3	0,56
Para-aramid SM*	1,44	23-25	3,5	75	33	7	180	none	490	poor	poor	0,04	0,1	-4
Para-aramid HM**	1,44	22-24	2,3	116	33	3,5	180	none	490	poor	poor	0,04	0,1	-4
Novoloid/Phenolic	1,27	1,8	50	4,4	34	6	200	none	500	good	good	0,025	0	30
PEEK	1,3	5	25	3,2	35	0,1	260	334	540	fair	fair	0,29	1	-
PPS	1,34	5	35	-	40	0,6	190	285	520	poor	poor	-	6,2	60
Carbon fiber - PAN	1,79	20 - 36	2	240	50	0	300	none	3500	poor	excellent	7	0	-0,63
Carbon fiber - Pitch	2,19	18 - 23	0,4	860	50	0	350	none	3500	poor	excellent	500	0	1,5
PBO - AS	1,54	42	3,5	180	68	2	250	none	650	poor	very poor	60	0	-6
PBO - HM	1,56	42	2,5	270	68	0,6	250	none	650	poor	very poor	60	0	-6
Basaltfiber	2,67	8	3,2	87	70	0,03	600	1450	1450	poor	excellent	0,035	0	8
Fiberglass- E	2,58	12 - 18	4,8	72	100	0	550	850	-	poor	good	1,15	0	5,4

\* Para-aramid standard modulus

\*\* Para-aramid high modulus

\*\*\* UHMWPE - High strength grade

\*\*\*\* UHMWPE - Medium strength grade

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