

Cast-Nylon Specification

Property	ASTM Test Method	CN-NB CN-UD	CN-CL	CN-MD	CN-CDH	CN-CDM	CN-HM	CN-NBE CN-UDE
Specific Gravity	D792	1.15~1.16	1.12~1.13	1.16~1.17	1.25~1.27	1.18~1.20	1.22	1.15
Tensile Strength [MPa]	D638	78~93	59~74	74~93	70~80	70~80	85	76
Tensile Elongation [%]	D638	20~50	10~30	18~40	5~8	20~30	14	48
Young's Modulus [10^3 MPa]	D638	3.0~3.5	2.0~2.5	2.8~3.3	2.5	2.0	3.5	2.9
Compressive Strength at 5% strain [MPa]	D695	93~108	74~83	88~98	75	60	—	91
Flexural Strength [MPa]	D790	103~123	78~93	98~118	120	140	119	110
Izod Notched Impact Strength (1/2in×1/2in notched, 23°C) [J/m]	D256	34~54	37~65	30~50	30~50	50~60	51	33
Rockwell Hardness	D785	R115~120	R100~112	R113~117	R115~120	R115~120	R115	R120
Thermal Conductivity [W/(m·K)]	C177	0.20	0.20	0.20	0.65	—	—	0.20
Specific Heat [J/(kg·K)]	—	1,046	1,046	1,046	1,370	—	—	1,250
Coefficient of Linear Expansion [$10^{-5}/^{\circ}\text{C}$]	D696	8.0	8.6	9.0	12.7	—	6.4	9.0
Continuous Use Temperature [°C]	—	120	100	120	—	—	160	110
Deflection Temperature [°C]	0.451MPa	D648	210~215	170~180	205~210	—	—	193
	1.813MPa		185~200	105~115	170~195	—	—	94
Volume Resistivity (23°C 50% RH) [$\Omega\cdot\text{m}$]	D257	10^{12}	10^{12}	10^{12}	$10^3\sim 10^5$	$10^4\sim 10^8$	—	10^{12}
Dielectric Strength [kV/mm]	shorttime 3.2mm thickness step	D149	18.0~22.0	18.0~22.0	18.0~22.0	—	—	25.0
	3.2mm thickness		—	—	—	—	—	—
Dielectric Constant	60Hz	D150	3.7	3.7	3.7	—	—	4.0
	10^3 Hz		3.7	3.7	3.7	—	—	3.7
	10^6 Hz		3.7	3.7	3.7	10.1	—	3.4
Dissipation Factor	60Hz	D150	0.015	0.015	0.015	—	—	0.010
	10^3 Hz		0.020	0.020	0.020	—	—	0.040
	10^6 Hz		0.050	0.050	0.050	12.400	—	0.040
Arc resistance [sec]	D495	—	—	—	—	—	—	
Water Absorption (24 hours 3.2mm Thickness) [%]	D570	0.50~0.90	0.60~0.80	0.90~1.20	0.60~0.70	0.60~0.70	0.50	1.30
Flammability or Rate of Burning	D635/UL94	self-extinguishing	self-extinguishing	self-extinguishing	self-extinguishing	self-extinguishing	self-extinguishing	self-extinguishing
sunlight resistances (color change)	—	slightly discolor	slightly discolor	slightly discolor	slightly discolor	slightly discolor	slightly discolor	slightly discolor
Weak acid resistances	D543	resist	resist	resist	resist	resist	resist	resist
Strong acid resistances	D543	non resistance	non resistance	non resistance	non resistance	non resistance	non resistance	non resistance
Weak alkali resistances	D543	resist	resist	resist	resist	resist	resist	resist
Strong alkali resistances	D543	resist	resist	resist	resist	resist	resist	resist
Organic solvent resistances	D543	resist(except Phenol and Formic acid)	resist(except Phenol and Formic acid)	resist(except Phenol and Formic acid)	resist(except Phenol and Formic acid)	resist(except Phenol and Formic acid)	resist(except Phenol and Formic acid)	resist(except Phenol and Formic acid)
Transparency	—	opaque	opaque	opaque	opaque	opaque	opaque	opaque
Sand slurry Wear (SS400=100)	(Original)	57	46	63	57	—	—	80
Thrust Wear (by S45C P=1,960kPa V=0.25m/sec) [$\times 10^{-6}\text{cm}^3/(\text{P}\cdot\text{V}\cdot\text{h})$]	(Original)	1.2	0.3	1.2	1.2	—	—	2.8
Allowable PV [kPa·m/sec]	(Original)	820	3,250	980	750	750	750	820

The material properties in above table are only for reference, measured by each test methods, and do not guarantee minimum value. And these properties might be changed without notice, so it is recommended to refer the data in the newest catalogues.