

**Abrasion Resistance**Based on Sand Slurry Testing  
(Descending performance)

UHMW	10
HDPE	29
Nylon, Solid Lube	38
Nylon, Type 6	44
Nylon, Moly-Filled	50
Polyimide	53
Nylon, Type 6/6	54
PEEK	56
Manganese Steel	57
LDPE	63
PET-P	65
Nylon, Type 12	67
PEEK, Carbon Filled	67
PTFE	78
Stainless Steel	80
PBI	80
Polycarbonate	84
Nylon, Type 4/6	86
Polyurethane	89
PEEK, Glass Filled	97
Carbon Steel	100
Polyimide, Graphite Filled	106
Ultem PEI	116
Polypropylene	122
Rubber	129
Acetal, CoPolymer	133
Acetal, HomoPolymer	135
PPS	168
PTFE, Glass Filled	197
Torlon 4301	236
Bronze	276
Phenolic	1070
PTFE, Mica Filled	1600

**Wear Resistance**Journal bearing wear  
(Descending performance)

Nylon, Solid Lube	9
Torlon 4301	10
Polyimide, Graphite Filled	30
Acetal, ESD	30
PTFE, ESD	30
Fluorosint 207	30
Ertalyte TX	35
Rulon J	38
Torlon 4203	50
Polyimide	50
Torlon 7130	50
Delrin AF	58
PET-P	60
PBT	63
Nylon, Oil & Moly-Filled	65
Nylon, Oil Filled	68
Nylon, Moly-filled	70
Nylon, Type 6	72
Nylon, Type 6/6	75
PEEK, Bearing Grade	80
PPS, Ext. Bearing Grade	85
PEEK, Carbon Filled	90
PEEK, Bearing Grade CM	100
UHMW	125
Ultem, ESD	125
Delrin 500 CL	176
Acetal, Homopolymer	200
Acetal, Copolymer	200
PTFE	270
Torlon ESD	300
Torlon 4540	315
PEEK	375
HDPE	490
Ryton, Bearing Grade	600
Fluorosint 500	600
LDPE	650
PPS	2000

**Limiting PV**

Pressure x Velocity, Ambient Temperature

HDPE	1,000
PTFE	1,500
Ultem PEI	1,875
UHMW	2,000
PBT	2,600
Acetal, CoPolymer	2,700
Acetal, HomoPolymer	2,700
Nylon, Type 6/6	2,700
PET-P	2,800
Nylon, Type 6	3,000
Nylon, Moly-Filled	3,000
PPS, Extruded	3,000
PTFE, Carbon Filled	3,200

**Coefficient of Friction**

Dynamic, Dry vs. Steel

Teflon PTFE	.05
PTFE, Graphite Filled	.08
UHMW, Dry Lubricant	.08
UHMW, Oil Filled	.10
Fluorosint 207	.10
UHMW, Glass Bead Filled	.12
UHMW	.14
UHMW, Reprocessed	.14
PVDF	.14
UHMW, Anti-Stat	.15
Delrin AF	.16
PPS, Ext. Bearing Grade	.16
Rulon LR	.17

Nylon, Oil & Moly-Filled	5,500	Nylon, Oil & Moly-Filled	.18
Nylon, Oil Filled	5,600	Nylatron NSM	.18
PET-P, Teflon Filled	6,000	Sustaglide	.18
PTFE, ESD	6,000	Nylon, Oil Filled	.19
Rulon J	7,500	PET-P, Teflon Filled	.19
Fluorosint 207, 500	8,000	Torlon 5030	.19
Rulon LR	8,000	Nylon, Moly-filled	.20
Delrin AF	8,300	Nylon, Type 6	.20
Rulon F	9,000	PET-P	.20
Hydex 4101L	10,000	Ryton, Bearing Grade	.20
PEI, ESD	12,000	PEEK, Ext. Carbon Filled	.20
Sustaglide	12,500	Torlon 4301	.20
Torlon 4203	12,500	Vespel SP-21	.20
Nylatron NSM	15,000	PFA	.21
PEEK	15,000	PEEK, Ext. Bearing Grade	.21
PPS, Ext. Bearing Grade	17,000	PEEK, Carbon Filled CM	.24
PEEK, Ext. Bearing Grade	20,000	Celazole PBI	.24
Torlon 5030	20,000	Nylon, Type 6/6	.25
Torlon 4301	22,500	Acetal, Homopolymer	.25
Ryton, Bearing Grade	25,000	Acetal, Copolymer	.25
PEEK, Ext. Carbon Filled	25,000	PBT	.25
Meldin 2021 PI	30,000	Nylon, ST801	.28
PEEK, Bearing Grade CM	30,000	Acetal, ESD	.29
Duratron HP PI	32,500	PEEK, Bearing Grade CM	.30
Vespel SP-1	35,000	Torlon 4203	.35
PEEK, Ext. Bearing Grade	35,000	Polysulfone	.37
Celazole PBI	37,500	Noryl PPO	.39
PEEK, Carbon Filled CM	41,000	PPS	.40
Vespel SP-21	45,000	PEEK	.40
		Ultem PEI	.42

### Thermal Stability

Coefficient of Linear  
Thermal Expansion x 10(-5)

Torlon 7130	0.5
Torlon 5030	0.9
PEEK, Carbon Filled	1.0
PEEK, Glass Filled	1.2
Ryton, Bearing Grade	1.2
Celazole PBI	1.3
Torlon 4301	1.4
PEEK, Bearing Grade	1.7
Torlon 4203	1.7
Ryton, Glass Filled	2.5
PEEK	2.6
Radel	2.7
PPS	2.8
Vespel SP-1	3.0
Polysulfone	3.1
Ultem	3.1
PET-P	3.3
Noryl PPO	3.3
PPS, Ext. Bearing Grade	3.3
Nylon, Type 6	3.5
Nylon, Moly-Filled	3.5
Polycarbonate	3.9
PET-P, Teflon Filled	4.5

### Moisture Absorption

Saturation, % by weight

PTFE	0.00
PFA	0.00
PET-P	0.00
LDPE	0.01
HDPE	0.01
UHMW	0.01
Polypropylene	0.02
PPS	0.03
Ryton, Bearing Grade	0.03
PPS, Ext. Bearing Grade	0.09
PVDF	0.10
Noryl PPO	0.20
Polycarbonate	0.20
PEEK, Glass Filled	0.30
PEEK, Carbon Filled	0.30
PEEK, Ext. Bearing Grade	0.30
PET, Teflon Filled	0.47
PBT	0.50
PEEK	0.50
Polysulfone	0.60
Vespel SP-1	0.72
Acetal, Copolymer	0.90
Acetal, Homopolymer	0.90

Acetal, Homopolymer	4.7	Delrin AF	1.00
Kel-F PCTFE	4.8	Ultem PEI	1.25
Nylon, Oil Filled	5.0	Torlon 4301	1.50
Nylatron NSM	5.0	Torlon 5030	1.50
Sustaglide	5.0	Torlon 7130	1.50
Delrin AF	5.0	Torlon 4203	1.70
Acetal, Copolymer	5.4	Fluorosint 207	2.00
Nylon, Type 6/6	5.5	PTFE, ESD	2.00
Fluorosint 207	5.7	Radel	2.50
PTFE, Glass Filled	5.8	Nylon 6/12	3.00
Nylon, Oil & Moly-Filled	5.9	Celazole PBI	5.00
Polypropylene	6.2	Nylon, Type 6 (All)	7.00
PVDF	6.9	Nylon, Type 6/6 (All)	7.00
HDPE	7.1	Acetal, ESD	8.00
PFA	7.6		
UHMW	7.8		
PBT	7.8		
PTFE	8.4		
LDPE	9.1		
Acetal, ESD	9.3		
UHMW, Anti-Stat	11.0		

### Heat Deflection Temperature

0.010" Deformation, 264 psi

LDPE	97
HDPE	110
UHMW	118
PFA	118
FEP	124
Polypropylene	125
PBT	130
PTFE	132
Kel-F PCTFE	167
PET-P, Teflon Filled	180
Nylon, Type 6/12	194
Nylon, Type 6/6	200
Nylon, Type 6	200
Nylon, Oil Filled	200
Nylon, Oil & Moly-Filled	200
Nylatron NSM	200
Sustaglide	200
Fluorosint 207	210
PTFE, ESD	210
Acetal, Copolymer	220
Acetal, ESD	225
Kynar	235
PET-P	240
PPS, Ext. Bearing Grade	240
Delrin AF	244
Acetal, Homopolymer	250
PPS	250
Polycarbonate	290
PEEK	320
Polysulfone	340
PEEK, Ext. Bearing Grade	383
Ultem	390
Radel	400

### Cont. Use Temperature

Long Term exposure, lightly loaded

LDPE	160
HDPE	180
Polypropylene	180
UHMW	180
Acetal, Homopolymer	180
Acetal, Copolymer	180
Delrin AF	180
Acetal, ESD	180
Nylon, Type 6/12	200
Nylon, Type 6	200
Nylon, Oil Filled	200
Nylon, Oil & Moly-Filled	200
Nylatron NSM	200
Sustaglide	200
PBT	200
Nylon, 6/6	210
PET-P	210
PET-P, Teflon Filled	210
Polycarbonate	250
Polysulfone	300
Radel	300
PVDF	300
Kel-F PCTFE	300
Ultem	340
FEP	390
PPS	425
PPS, Ext. Bearing Grade	430
Ryton, Glass Filled	450
Ryton, Bearing Grade	450
PEEK	480
PEEK, Glass Filled	480
PEEK, Carbon Filled	480
PEEK, Bearing Grade CM	480

PEEK, Glass Filled	450	PEEK, Ext. Bearing Grade	480
Ryton, Glass Filled	490	PFA	500
Ryton, Bearing Grade	490	PTFE	500
PEEK, Carbon Filled	518	Fluorosint 207	500
PEEK, Bearing Grade (CM)	530	Torlon 4203	500
Torlon 4203	532	Torlon 4301	500
Torlon 4301	534	Torlon 5030	500
Torlon 5030	539	Torlon 7130	500
Torlon 7130	540	PTFE, ESD	500
Vespel SP-1	680	Vespel SP-1	600
Celazole PBI	815	Celazole PBI	650

### Tensile Strength

Room Temperature, psi

LDPE	1,900
PTFE	3,350
FEP	3,400
PFA	3,600
HDPE	4,600
Polypropylene	4,800
UHMW	5,000
Kel-F PCTFE	5,760
PVDF	7,200
Nylon, Type 6/12	7,400
PBT	7,500
Delrin AF	8,000
Nylon, Oil filled	9,300
Acetal, Copolymer	9,500
Noryl PPO	9,600
Nylon, Oil & Moly-Filled	10,000
Ryton, Bearing Grade	10,000
PPS (compression molded)	10,000
Polysulfone	10,200
Nylon, Moly-Filled	10,500
Polycarbonate	10,500
PPS, Ext. Bearing Grade	10,900
PEEK, Ext. Bearing Grade	10,900
Nylatron NSM	11,000
Sustaglide	11,000
Acetal, Homopolymer	11,000
PET-P, Teflon Filled	11,000
Radel	11,000
Nylon, Type 6/6	11,500
Nylon, Type 6	12,000
Torlon 4301	12,000
PET-P	12,400
Vespel SP-1	12,500
Ryton, Glass Filled	13,000
PPS (extruded)	13,500
PEEK (compression molded)	15,000
PEEK (extruded)	16,000
Ultem	16,500
Ultem, Glass Filled	17,000
Torlon 4203	18,000
PEEK, Ext. Carbon Filled	19,000
Celazole PBI	23,000
Torlon 7130	29,400

### Compressive Strength

10% Deformation, Room Temp, psi

LDPE	1,500
PTFE	1,600
HDPE	2,500
UHMW	3,000
Fluorosint 207	3,800
Acetal, ESD	8,000
Polycarbonate	11,000
Nylon, Oil filled	12,000
Nylon, Type 6/6	12,500
PBT	12,800
Nylon, Oil & Moly-Filled	13,000
Polysulfone	13,000
Radel	13,400
PVDF	13,500
Nylon, Moly-Filled	14,000
Nylatron NSM	14,000
Sustaglide	14,000
Nylon, Type 6	15,000
Acetal, Copolymer	15,000
PET-P	15,000
Ryton, Bearing Grade	15,000
PET-P, Teflon Filled	15,250
Acetal, Homopolymer	16,000
Delrin AF	16,000
PPS, Ext. Bearing Grade	16,000
PEEK (compression molded)	17,000
Acetal, Glass Filled	18,000
PEEK, Glass Filled CM	19,000
Vespel SP-1	19,300
PEEK (extruded)	20,000
PPS (extruded)	21,500
Ultem	22,000
Torlon 4301	22,000
Ryton, Glass Filled	24,000
Torlon 4203	24,000
PEEK, Bearing Grade CM	24,000
PEEK, Carbon Filled CM	25,000
PEEK, Glass Filled	26,000
PEEK, Ext. Bearing Grade	26,700
PEEK, Carbon Filled	29,000
Ultem, Glass Filled	32,000
Torlon 7130	36,900
Torlon 5030	38,300

Torlon 5030	29,700	Celazole PBI	50,000
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**Flexural Modulus**

Room Temperature, psi

LDPE	21,000
PTFE	72,000
Rulon LR	80,000
PFA	85,000
FEP	85,000
UHMW	125,000
HDPE	150,000
Polypropylene	180,000
Kel-F PCTFE	254,000
Nylon, Type 6/12	295,000
PVDF	300,000
PBT	330,000
Radel	345,000
Polycarbonate	350,000
Fluorosint 207	350,000
Noryl PPO	360,000
Nylon, Oil Filled	370,000
Sustaglide	400,000
Acetal, Copolymer	400,000
Polysulfone	400,000
Delrin AF	445,000
Nylon, Type 6/6	450,000
Acetal, Homopolymer	450,000
VespeI SP-1	450,000
PET-P, Teflon Filled	460,000
Nylatron NSM	475,000
PET-P	490,000
Nylon, Type 6	500,000
Nylon, Moly-Filled	500,000
Nylon, Oil & Moly-Filled	500,000
Ultem	500,000
PPS, Ext. Bearing Grade	535,000
PPS (extruded)	575,000
PEEK (extruded)	600,000
Torlon 4203	600,000
Torlon 4301	800,000
PEEK, Glass Filled	1,000,000
Ryton, Glass Filled	1,000,000
Ryton, Bearing Grade	1,000,000
PEEK, Ext. Bearing Grade	1,100,000
PEEK, Carbon Filled CM	1,300,000
PEEK, Bearing Grade CM	1,400,000
Torlon 5030	1,700,000
Torlon 7130	2,880,000

**Chemical Resistance**

Listed from best to weakest

<u>Inert</u>	
PTFE	PFA
FEP	PVDF
Kel-F	Halar
LDPE	HDPE
Polypropylene	UHMW
Fluorosint	Rulon
<u>Excellent</u>	
PEEK	PPS
PBT	PET-P
<u>Good</u>	
Nylon	Noryl
Ultem	Torlon
VespeI	Celazole PBI
Acetal	Radel
Polysulfone	