

Ertalyte® PET-P, Polyester-semi-crystalline thermoplastic, extruded**Search Categories:** Polyester; Bearing; FDA and USDA Approved

Material Notes: Ertalyte PET-P is an unreinforced, semi-crystalline thermoplastic polyester based on polyethylene terephthalate (PET-P). It offers the wear resistance of nylon with the dimensional stability of acetal. It is good for both wet and dry environments. The high strength and rigidity of Ertalyte makes it ideal for close tolerance parts. In addition, Ertalyte offers good chemical and abrasion resistance. It is FDA compliant in both natural and black stock shapes. Natural Ertalyte is also USDA, 3A-Dairy and Canada AG compliant. Ertalyte is an excellent candidate for parts used in the food processing and equipment industries.

MECHANICAL PROPERTIES	ENGLISH VALUES	COMMENTS	METRIC VALUES
Specific Gravity	1.41	ASTM D792	1.41
Tensile Strength, psi	12400	ASTM D638	85 MPa
Tensile Modulus, psi	460000	ASTM D638	3,172 MPa
Elongation, %	20	ASTM D638	20 %
Flexural Strength, psi	18000	ASTM D790	124 MPa
Flexural Modulus, psi	490000	ASTM D790	3,379 MPa
Shear Strength, psi	8000	ASTM D732	55 MPa
Compressive Strength, psi	15000	ASTM D695, 10% Def.	103 MPa
Compressive Modulus, psi	420000	ASTM D695	2,896 MPa
Hardness, Rockwell M	93	ASTM D785	93
Hardness, Rockwell R	125	ASTM D785	125
Hardness, Durometer, Shore D Scale	87	ASTM D2240	87
Izod Impact (Notched), ft-lb/in	0.5	ASTM D256 Type A	27 J/m
Coefficient of Friction, Dynamic	0.2	Dry vs. Steel, PTM55007	0.2
Limiting PV, psi-fpm	2800	PTM55007	0.10 MPa-m/sec
k (wear) factor, 10^{-10} in ³ -min/lb-ft-hr	60	PTM55007	$60 \cdot 10^{-10}$ in ³ -min/lb-ft-hr
THERMAL PROPERTIES	ENGLISH VALUES	COMMENTS	METRIC VALUES
Coefficient of Thermal Expansion, $10E-4/^\circ F$	0.33	ASTM E831 (TMA)	$0.59 \cdot 10^{-4}/K$
Deflection Temperature 264 psi, $^\circ F$	240	ASTM D648	116 $^\circ C$
Melting Point (Crystalline) Peak, $^\circ F$	491	ASTM D3418	255 $^\circ C$
Continuous Service in Air (Max), $^\circ F$	210	Without Load	99 $^\circ C$
Thermal Conductivity, BTU-in/hr-ft ² - $^\circ F$	2		0.29 W/m-K
ELECTRICAL PROPERTIES	VALUES	COMMENTS	METRIC VALUES
Dielectric Strength, Short Term, Volts/mil	385	ASTM D149(2)	15 kV/mm
Surface Resistance, Ohm/Square	1E+13	Lower Limit; EOS/ESD S11.11	1E+13 Ohm/Square
CHEMICAL PROPERTIES	ENGLISH VALUES	COMMENTS	METRIC VALUES
Water Absorption Immersion, 24 hr., %	0.07	ASTM D570	0.07 %
Water Absorption Immersion Sat, %	0.9	ASTM D570	0.9 %
Acids, Weak (acetic, dilute HCl)	3	Acceptable Service	3

Acids, Strong (conc. HCl or sulfuric)	2	Limited Service	2
Alkalies, Weak (dilute NaOH)	3	Acceptable Service	3
Alkalies, Strong (conc. NaOH)	1	Unacceptable	1
Hydrocarbons, Aromatic (toluene)	3	Acceptable Service	3
Hydrocarbons, Aliphatic (gasoline)	3	Acceptable Service	3
Ketones, Esters (acetone)	3	Acceptable Service	3
Ethers (diethyl ether, THF)	3	Acceptable Service	3
Chlorinated Solvents (methylene chloride)	1	Unacceptable	1
Alcohols (methanol, anti-freeze)	3	Acceptable Service	3
Inorganic Salt Solutions (NaCl, KCl)	3	Acceptable Service	3
Continuous Sunlight	2	Limited Service	2
Steam	1	Unacceptable	1

COMPLIANCE	ENGLISH VALUES	COMMENTS	METRIC VALUES
Flammability, UL94 (5=V-0; 4=V-1; 3=V-2; 1=HB)	1 (HB)	UL94	1
FDA (1=Yes)	1	Compliant	1
USDA (1=Yes)	1	Compliant	1
NSF (1=Yes)	0	Not Compliant	0
3A-Dairy (1=Yes)	1	Compliant	1
Canada AG (1=Yes)	1	Compliant	1
USP Class VI (1=Yes)	0	Not Compliant	0