



ERTALYTE® PET-P

Wear Resistance of Nylon, Dimensional Stability of Acetal

- **Good for both wet and dry environments**
- **High strength and rigidity—ideal for close tolerance parts**
- **Excellent stain resistance**
- **Good wear resistance and excellent dimensional stability**
- **Better resistance to acids than nylon or acetal**

Ertalyte® is an unreinforced, semi-crystalline thermoplastic polyester based on polyethylene terephthalate (PET-P). It is manufactured from proprietary resin grades made by Quadrant. Only Quadrant can offer Ertalyte. It is characterized as having the best dimensional stability coupled with excellent wear resistance, a low coefficient of friction, high strength, and resistance to moderately acidic solutions. Ertalyte®'s properties make it especially suitable for the manufacture of precision mechanical parts which are capable of sustaining high loads and enduring wear conditions. Ertalyte®'s continuous service temperature is 210°F (100°C) and its melting point is almost 150°F higher than acetals. It retains significantly more of its original strength up to 180°F (85°C) than nylon or acetal.

In addition, Ertalyte® PET-P offers good chemical and abrasion resistance. Its low moisture absorption enables mechanical and electrical properties to remain virtually unaffected by moisture. Ertalyte PET-P can be machined to precise detail on standard metal working equipment.

Ertalyte® is FDA compliant in natural and black. 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.

Proven Applications

Manifolds Process and test equipment manifolds machined from Ertalyte offer improved dimensional stability combined with superior stain and chemical resistance.

(Prior materials: Aluminum, Acetal)

Food equipment components Many parts on food manufacturing and processing equipment are machined from Ertalyte—like this hamburger forming die component which meets stringent tolerance requirements and can be easily sanitized using clean-in-place chemicals.

(Prior material: Aluminum)

Carousel, filter track, locating disk and ring Its rigidity and clean hygienic appearance—in addition to dimensional stability and resistance to dilute hydrochloric acid—made Ertalyte the ideal choice for various components on pharmaceutical test equipment.

(Prior material: Nylon, UHMW-PE)

Engineering Notes: Because it is more rigid and offers greater thermal performance than nylon and acetal, Ertalyte machines differently. For best results, please request a copy of Quadrant's design and fabrication guideline for Ertalyte PET-P. Ertalyte and other polyesters have less resistance to hot water than Acetron® GP acetal.



Ertalyte PET-P, Polyester-semi-crystalline thermoplastic, extruded

Extruded	Rod	Disc	Plate	Tubular Bar	Other
Ertalyte® PET-P	.394" - 7.88"	—	.315"- 3.94" (A,H)	.787"- 7.87" OD, .472"- 6.30" ID	—

Key: A= 24" Wide x 48" Long H = 48" Wide x 144" Long

MECHANICAL PROPERTIES

	VALUES	ASTM/COMMENTS
Specific Gravity	1.41	D792
Tensile Strength, psi	12400	D638
Tensile Modulus, psi	460000	D638
Elongation, %	20	D638
Flexural Strength, psi	18000	D790
Flexural Modulus, psi	490000	D790
Shear Strength, psi	8000	D732
Compressive Strength, psi	15000	D695, 10% Def.
Compressive Modulus, psi	420000	D695
Hardness, Rockwell M	93	D785
Hardness, Rockwell R	125	D785
Izod Impact (Notched), ft-lb/in	0.5	D256 Type A
Coefficient of Friction, Dynamic	0.2`	Dry vs. Steel, PTM55007
Limiting PV, psi-fpm	2800	PTM55010
k (wear) factor, 10-10in3-min/lb-ft-hr	60	PTM55010

THERMAL PROPERTIES

Coefficient of Thermal Expansion, 10E-4/°F	0.33	E831 (TMA)
Deflection Temperature 264 psi, °F	240	D648
Melting Point (Crystalline) Peak, °F	491	D3418
Continuous Service in Air (Max), °F	210	Without Load
Thermal Conductivity, BTU-in/hr-ft ² -°F	2	

ELECTRICAL PROPERTIES

Dielectric Strength, Short Term, Volts/mi	1385	Short Term, ASTM D149(2)
Volume Resistivity, Ohm-cm	5.5	E+14D257

CHEMICAL PROPERTIES

Water Absorption Immersion, 24 hr., %	0.07	24 hour immersion
Water Absorption Immersion Sat, %	0.9	saturation immersion
Acids, Weak (acetic, dilute HCl)	3	Acceptable Service
Acids, Strong (conc. HCl or sulfuric)	2	Limited Service
Alkalies, Weak (dilute NaOH)	3	Acceptable Service
Alkalies, Strong (conc. NaOH)	1	Unacceptable
Hydrocarbons, Aromatic (toluene)	3	Acceptable Service
Hydrocarbons, Aliphatic (gasoline)	3	Acceptable Service
Ketones, Esters (acetone)	2	Limited Service
Ethers (diethyl ether, THF)	3	Acceptable Service
Chlorinated Solvents (methylene chloride)	1	Unacceptable
Alcohols (methanol, anti-freeze)	3	Acceptable Service
Inorganic Salt Solutions (NaCl, KCl)	3	Acceptable Service
Continuous Sunlight	2	Limited Service
Steam	1	Unacceptable

COMPLIANCE

Flammability, UL94 (5=V-0; 4=V-1; 3=V-2; 1=HB)	1 (HB)	HB UL 94
FDA(1=Yes)	1	Compliant
USDA(1=Yes)	1	Compliant
NSF (1=Yes)	0	Not Compliant
3A-Dairy (1=Yes)	1	Compliant
Canada AG (1=Yes)	1	Compliant
USP Class VI (1=Yes)	0	Not Compliant