



Technical Report

Perfluoropolyether Lubricants Plastics Compatibility

The following plastics were unchanged after contact with PFPE for 1000 hours at 70°C:

Acetal copolymer (POM)
Acrylonitrile-butadiene-styrene copolymer (ABS)
Phenylene-oxide based resins (PPO)
Polyamide 66 (NYLON 66)
Polybutylene terephthalate (PBT)
Polycarbonate (PC)
Polyethylene high density (HDPE)
Polyethylene low density (LDPE)
Polyethylene terephthalate (PET)
Polymehtylmethacrylate (PMMA)
Polypropylene (PP)
Polystyrene (PS)
Polystyrene impact-resistant (HIPS)
Polyvinylchloride (PVC)
Polyvinyliden sulfide (PVDS)
Styrene-acrylonitrile copolymer (SAN)

Plastics Compatibility

Compounds	Conditions	Results
PTFE (Sheet)	ASTM D471-79 150°C @ 500 hrs.	Tensile = 13% Elongation = 8% Volume change = 3%
Superconductive PTFE film (DEWAL INDUSTRIES)	ASTM D 471-79 150°C @ 500 hrs.	No leeching into fluid. Little change seen in physical properties of film.
Conductive PTFE Tube (Stratoflex)	ASTM D471-79 150°C @ 500 hrs.	No leeching into fluid. Little change seen in physical properties of the tube.
Conductive Teflon® Tube (Flexible Components)	ASTM D471-79 150°C @ 500 hrs.	No leeching into fluid. Little change seen in physical properties of the tube.
Conductive Polyester	ASTM D471-79 150°C @ 100 hrs.	Material became brittle. Incompatible.
PEEK	ASTM D1384-94 (Method used for metals)	No change in Plastic.
PPS	ASTM D1384-94	No change in Plastic.
Polymides	ASTM D1384-94	No change in Plastic.
Ryton	ASTM D 471-79	Volume change = +0.3% Weight change = +0.2% Hardness change = 1-2%
PPS	ASTM D 471-79 150°C @ 500 hrs.	Volume change = +0.1% Weight change = +0.2% Hardness change = +0.2%
PFA	ASTM D 471-79 200°C @ 500 hrs.	Tensile change = - 2.9% Weight change = 0.3% Hardness change = - 15%
MFA	ASTM D 471-79 150EC @ 500 hrs.	Tensile change = - 9.9% Weight change = 0.6% Hardness change = - 11%

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