

JACO FITTINGS MATERIAL

Polypropylene / Nylon / PVDF / Acetal

Polypropylen

20% glass filled for improved strength.) Opaque flat white color, (most white of JACO Fittings).

Material temperature rating is -30°F to 225°F. Polypropylene (PP) is a workhorse in the plastics industry. The general physical properties of polypropylene are similar to those of high-density polyethylene, (PE), but PP has a harder durometer and is more rigid. It is also more resistant to environmental stress cracking

than PE. Polypropylene (PP) is light weight and high in chemical resistance. It is unaffected by alkalis (bases), salts and most weak acids, (particularly hydrochloric and phosphoric acids). Below 175°F it has good resistance to organic solvents. It is not suitable for oxidants, strong acids, chlorinated hydrocarbons,

high concentrations of free chlorine, and aromatic compounds (such as benzene and toluene). PP is very inert, thus popular for high purity applications such as deionized water, etc. Avoid use in continuous sunlight. N.S.F. 14 certified, N.S.F. 61 compliant. Tensile Strength of 4,500 psi increases to 6,400 psi with glass fill. Durometer = 70D to 80D, (Autoclavable – yes).

Nylon

Nylon 6 is an off-white, very light gray colored material (a little whiter than PVDF material, but not as white as Acetal). Because of Nylon's versatility it is one of the most widely used thermoplastics. Nylon 6 is a tough, strong, abrasion-resistant material with excellent impact resistance, both single and repeated. The material temperature rating is between -40°F to 250°F, and it has good strength at high temperatures. Since Nylon naturally absorbs water it is typically not preferred for wet applications. Moisture acts as a plasticizer, reducing tensile strength and stiffness, and increasing elongation. However, as moisture content rises, significant increases occur in impact strength and energy absorbing characteristics. Dry state properties will return as the material dries out. Nylon has good chemical resistance to organic solvents, oils, hydrocarbons, and fuels. Nylon 6 has poor chemical resistance to strong acids and bases. It is not recommended for use with ammonium, boric acid, calcium, sulfuric acid, or hydrochloric acid. N.S.F. Listed. F.D.A. Listed. Tensile Strength = 8,800psi, Durometer = 75D to 90D. (Autoclavable – No).

PVDF (Polyvinylidene fluoride)

PVDF has a semitranslucent cloudy off-white appearance. It is superior to other fitting thermoplastics in abrasion resistance and chemical resistance for handling highly corrosive fluids. It has remarkable strength over the largest working chemical range. The material is rated at -80°F to 275°F and has a working temperature range for fittings of -40°F to 250°F. PVDF's impact strength is over twice that of PVC, and is extremely durable and abrasion resistant under mechanical abuse. It also has outstanding aging resistance, with its properties remaining constant after many years. PVDF also has remarkable fire resistant properties. In the Underwriter's test PVDF was given the highest classification (V-O), indicating that it was non-flammable and self-extinguishing. PVDF has excellent chemical resistance against strong inorganic and organic acids, aliphatic and aromatic hydrocarbons, and halogenated solvents such as chlorine and bromine. PVDF is not suitable with fuming sulfuric acid, concentrated alkalis, hot bases or bases having a PH >12. For any chlorine containing compound, the material does need to be blocked from UV. The UV itself will not break down in the material, nor will the chlorine. The UV will pass right through the PVDF resin, the UV will then attack the chlorine and make the chlorine more aggressive due to free radicals. This can attack the PVDF material quicker. PVDF is FDA compliant, absolutely non-toxic and can be used in repeated contact with food products. N.S.F. Listed. Tensile Strength = 5,900 psi. Durometer = 75D. (Autoclavable – yes).

Acetal

Acetal has a glossy, slippery white appearance that may yellow over time. It has high tensile strength and good wear resistance over a broad range of temperatures. The material is rated at -40°F to 200°F in open air, and rated for 180°F in hot water applications. Not affected by continuous hot water service and works smoothly with metal and hard surface tubing.

Note: Acetal copolymer cannot be recommended for continuous exposure to solutions with a chlorine concentration greater than 1 ppm. (Many water treatment facilities use up to 4 ppm of chlorine concentration.) Acetal is unaffected by formaldehyde, oil, alcohols, and most inorganics. However, it is not recommended for use with acids. Good resistance to methylethylketones and has low moisture absorption rate. Listed by U.S.D.A and F.D.A. for use with coffee, milk, and antibiotics. Also N.S.F. Listed. Should not be continuously exposed to sunlight (UV). Tensile Strength = 8,800psi, Durometer = 90D to 95D. (Autoclavable – No).