

Acetal

Acetal - Polyoxymethylene

Acetal materials are based on formaldehyde polymerization. Acetal is highly crystalline, strong and, rigid and has good moisture, temperature and solvent resistance. Because acetal absorbs far less moisture than type 6 and type 6/6 nylons, it is widely used for many mechanical and industrial applications requiring closer tolerances and greater dimensional stability.

Acetal materials are available as homopolymers and copolymers - exhibiting similar basic characteristics, but with some specific properties variations.

Both homopolymers and copolymers can be formulated with glass reinforcement for higher stiffness - and are available in PTFE filled grades - for greatly improved "lubricity" and wear life.

Acetal Homopolymers

Acetal homopolymers have somewhat higher tensile strength, stiffness, impact resistance, creep resistance and hardness than copolymers. Acetal homopolymers provide somewhat lower heat resistance in both general (air) and hot water applications.

Tensile Strength / Break lb. / in. sq.:	1 x 10 ⁴
Dielectric Strength - V 10-3 in.:	500
Heat Deflection Temperature - 66 lb. psi:	342 F / 172 C
Elongation % at Break / DAM:	75%
Comparative Cost:	Moderate

Acetal Copolymers

Acetal copolymers also have excellent (slightly lower than homopolymers) tensile strength, stiffness, impact and creep resistance. Acetal copolymers generally have higher temperature resistance than homopolymers - especially in hot water applications.

Tensile Strength / Yield - lbs. sq. in.:	8.8 x 10 ³
Dielectric Strength - V 10 - 3 in.:	500 a
Heat Deflection Temperature - 66 lb. psi:	316 F / 157 C
Elongation % at Break DAM:	75%
Comparative Cost:	Moderate

Thermoformable Acetals

Both homopolymer (Delrin®) and copolymer ("Celcon®) formulations are now available in thermoformable grades. These polymers create new opportunities for thermoformers to participate in markets / applications currently served by acetal materials but formerly unavailable to thermoformed products. Thermoformable acetals exhibit ease of processing, mechanical strength, dimensional stability, chemical resistance, scratch and wear resistance and are paintable and bondable. Thermormed acetal parts are ideal for many industrial, appliance and packaging applications

Delrin FS

Tensile Strength / Break ISO 527 - 1 / 2: 44 (6-4)
Heat Deflection Temperature - 264 psi: ISO 75 -1 / 2 164 F / 73 C
Comparative Cost: Medium