

Material Information



Delrin 100AF

Introduction

Delrin 100AF is a high-viscosity acetal homopolymer containing 20% PTFE fibers. It is specifically formulated for applications requiring low friction and low wear against steel, itself, or other plastics, while retaining the toughness and mechanical performance associated with the Delrin 100 family.

Advantages

Excellent wear resistance, very low friction, good toughness, high mechanical strength, and good dimensional stability. Delrin 100AF is particularly suitable for sliding and rotating components because its PTFE fiber modification improves tribological performance and reduces friction and wear during repeated movement.

Disadvantages

Delrin 100AF is a specialized friction-modified grade and is generally selected for tribological applications rather than general-purpose structural parts. The addition of PTFE fibers changes the mechanical behavior compared with unfilled Delrin, so the specific balance of strength, toughness, friction, and wear performance should be considered when selecting the material for a load-bearing component.

Tolerance

3DSPRO can manufacture and inspect to tight tolerances, including sub +/- 0.001" tolerances, per your drawing specifications and GD&T callouts.

Recommendation

The combination of low friction, wear resistance, toughness, strength, and dimensional stability makes Delrin 100AF suitable for CNC-machined bearings, bushings, cams, rollers, guides, and other anti-friction components. It is particularly appropriate for applications involving repeated sliding contact, dry running, or long service life with reduced friction and wear.

Material Specifications (For reference only.)	
Tensile strength	53 to 56MPa
Elongation at Break	10% to 19%
Hardness	77 HRM

Heat deflection temperature at 0.46 MPa	160°C to 169°C
Melting point	175°C to 178°C

Attention

Delrin 100AF should be selected with the complete tribological system in mind, including the mating surface, contact pressure, sliding speed, temperature, lubrication, and type of motion. PTFE-filled grades are optimized for friction and wear performance, but the final performance of a component depends on the specific operating conditions rather than the material alone. Appropriate CNC machining conditions should also be used to maintain dimensional accuracy and surface quality.

Applications

3DSPRO finds people using Delrin 100AF to make functional parts and prototypes in the following industries and applications.

Bearings and bushings:

Plain bearings, bushings, thrust washers, and other components requiring low friction and high wear resistance.

Industrial equipment:

Cams, rollers, guides, wear pads, conveyor components, and other sliding or rotating parts exposed to repeated movement.

Automotive parts and supplies:

Mechanism components, bushings, guides, rollers, and other moving parts requiring reduced friction and long wear life.

General engineering:

Anti-friction components, sliding guides, precision wear components, and other CNC-machined parts requiring low friction and reliable performance under repeated contact.