

Celcon® Acetal Copolymer

Introduction

This Short Term Property Guide for Celcon® Acetal Copolymer is intended to provide a collection of the physical, mechanical, thermal and flammability properties as measured primarily by short term ASTM tests. In addition, agency approvals / specifications, grade characteristics, and a list of typical applications are provided to familiarize you with the product line and its uses. Celcon® acetal copolymer is an engineering thermoplastic material used in a wide spectrum of applications because of its many desirable properties. Celcon® acetal copolymer is the market leader among acetals because of its superior processing characteristics, long term service characteristics and its 30 year history of outstanding performance in many demanding applications. Part designers and molders choose Celcon® acetal copolymer over other materials because it offers the following advantages:

Advantages over metal

- Chemical / corrosion resistance
- Design flexibility
- Opportunities for parts consolidation
- Lower finished part cost
- Inherent lubricity
- Color matching possible
- High strength-to-weight ratio

Advantages over other thermoplastics

- Inherent lubricity / low coefficient of friction
- High fatigue strength / good creep resistance
- Good toughness / impact resistance
- Hard surface with good appearance
- High strength and stiffness
- Excellent dimensional stability
- Excellent chemical resistance

Advantages over acetal homopolymers

- Easier to process / wider processing window
- Superior long-term performance (creep resistance, fatigue endurance, strength retention)
- Less gassing and odor
- Heavy metal free colors, i.e. cadmium and lead (safer for workers / environment)
- Better maintenance of color under ultraviolet light exposure
- Faster molding cycles
- Less mold deposit

Specifications and regulatory approvals

Many grades comply with the following:

Agency

ASTM D4181

Food and Drug Administration (FDA)

National Sanitation Foundation (NSF)

Underwriters Laboratory (UL)

ASTM-17-2133

LP-392-A

MIL-P-46137A(MR)

Dairy and Food Industries
Supply Association (DFISA)

United States
Department of Agriculture (USDA)

United States Pharmacopeia (USP)

Plumbing Code Bodies

International Association
of Plumbing and Mechanical
Officials (IAPMO)

Building Officials

Conference of America (BOCA)

Southern Standard Building Code

Canadian Standards Association (CSA)

Plastic Pipe Institute (PPI)

Scope of regulation / specification

General Material Specification

Food contact applications which conform to 21CFR 177.2470.

Potable water contact items and food machinery components
NSF Standards 14, 51, 61

UL ratings for flammability, electrical and thermal use properties

Superseded by ASTM D4181

3A Sanitary Standards

Approved for use with direct contact with meat and poultry products

Class VI compliant for M90 natural, M270 natural

Plumbing fixtures and specific applications covered in the various codes

Plumbing fixtures, fittings and potable water contact items

Recommended Hydrostatic Design Stress (RHDS) rating of 1000 PSI at 73°F (23°C) as an injection molded plumbing fitting