Acetron® GP FG

Acetal (POM) Copolymer

Mitsubishi Chemical Advanced Materials



Technical Data

Product Description

Acetron GP Polyoxymethylene POM-C FG (Food Grade) / Ertacetal C Polyoxymethylene POM-C FG (Food Grade) is a general purpose, copolymer acetal grade that is often favored for its porosity free nature. Ertacetal C / Acetron GP POM-C FG shapes also offer low moisture and excellent machinability capabilities, making it a very versatile material that can excel in a multitude of environments. Due to these characteristics, Ertacetal C / Acetron GP POM-C FG components are used frequently for food contact application, and meet compositional FDA 21 CFR § 177.2470, EU 10/2011, USDA, NSF, Canada AG, and 3A-Dairy compliance requirements.

General			
Material Status	Commercial: Active		
Literature ¹	 Technical Datasheet (English 	n)	
Availability	 Africa & Middle East Asia Pacific	EuropeLatin America	North America
Features	CopolymerFood Contact Acceptable	General PurposeMachinable	
Uses	 General Purpose 	Non-specific Food Applie	cations
Agency Ratings	• EU 10/2011	• FDA 21 CFR 177.2470	
Appearance	Black	 Colors Available 	White

Density / Specific Gravity 1.41 g/cm³ ASTM D792 ISO 1838 Water Absorption 24 hr, 23°C 0.20 % ASTM D570 24 hr, 23°C 0.24 % ISO 62 Saturation, 23°C 0.80 % ASTM D570 Saturation, 23°C 0.80 % ISO 62 Mechanical Nominal Value Unit Test Method Tensile Modulus 2760 MPa ASTM D638 2760 MPa ASTM D638 65.5 MPa ASTM D638 65.5 MPa ASTM D638 66.0 MPa ISO 527-2 Tensile Strain 15 % ISO 527-2 Tensile Strain 40 % ISO 527-2 Flexural Modulus 2760 MPa ASTM D638 Break 30 % ASTM D790 2760 MPa ASTM D790 2760 MPa ASTM D790 82.7 MPa ASTM D790 82.7 MPa ASTM D790	Physical	Nominal Value Unit	Test Method
24 hr, 23°C	Density / Specific Gravity	1.41 g/cm³	
24 hr, 23°C 0.24 % ISO 62 Saturation, 23°C 0.90 % ASTM D570 Saturation, 23°C 0.80 % ISO 62 Mechanical Nominal Value Unit Test Method Tensile Modulus 2760 MPa ASTM D638 3000 MPa ISO 527-1 Tensile Strength 65.5 MPa ASTM D638 66.0 MPa ISO 527-2 Break 30 % ASTM D638 Break 30 % ASTM D63 Break 30 % ASTM D790 2660 MPa ISO 178 Flexural Strength 82.7 MPa ASTM D790 91.0 MPa ISO 178 Compressive Strength	Water Absorption		
Saturation, 23°C 0.90 % ASTM D570 Saturation, 23°C 0.80 % ISO 62 Mechanical Nominal Value Unit Test Method Tensile Modulus 2760 MPa ASTM D638 - 2760 MPa ASTM D638 - 65.5 MPa ASTM D638 - 66.0 MPa ISO 527-2 Tensile Strain 40 MPa ISO 527-2 Break 30 % ASTM D638 Break 30 % ASTM D638 Break 40 % ISO 527-2 Flexural Modulus 2760 MPa ASTM D790 - 2760 MPa ASTM D790 - 82.7 MPa ASTM D790 - 91.0 MPa ISO 178 Compressive Strength - 93.1 MPa ASTM D695 1% Strain 23.0 MPa ISO 604 2% Strain 40.0 MPa ISO 604	24 hr, 23°C	0.20 %	ASTM D570
Saturation, 23°C 0.80 % ISO 62 Mechanical Nominal Value Unit Test Method Tensile Modulus 2760 MPa ASTM D638 3000 MPa ISO 527-1 Tensile Strength 55.5 MPa ASTM D638 66.0 MPa ISO 527-2 Tensile Strain 15 % ISO 527-2 Break 30 % ASTM D638 Break 30 % ASTM D638 Break 40 % ISO 527-2 Flexural Modulus 2760 MPa ASTM D790 - 2660 MPa ISO 178 Flexural Strength 82.7 MPa ASTM D790 - 91.0 MPa ISO 178 Compressive Strength 91.0 MPa ASTM D695 1% Strain 23.0 MPa ISO 604 2% Strain 40.0 MPa ISO 604	24 hr, 23°C	0.24 %	ISO 62
Mechanical Nominal Value Unit Test Method Tensile Modulus 2760 MPa ASTM D638 3000 MPa ISO 527-1 Tensile Strength 65.5 MPa ASTM D638 66.0 MPa ISO 527-2 Tensile Strain Yield 15 % ISO 527-2 Break 30 % ASTM D638 Break 40 % ISO 527-2 Flexural Modulus 2760 MPa ASTM D790 2660 MPa ISO 178 Flexural Strength 82.7 MPa ASTM D790 91.0 MPa ISO 178 Compressive Strength 91.0 MPa ISO 178 Compressive Strength 93.1 MPa ASTM D695 1% Strain 23.0 MPa ISO 604 2% Strain 40.0 MPa ISO 604	Saturation, 23°C	0.90 %	ASTM D570
Tensile Modulus 2760 MPa ASTM D638 - 3000 MPa ISO 527-1 Tensile Strength - 65.5 MPa ASTM D638 - 66.0 MPa ISO 527-2 Tensile Strain **** Yield 15 % ISO 527-2 Break 30 % ASTM D638 Break ASTM D638 Break ASTM D638 Break ASTM D638 Break ISO 527-2 Flexural Modulus **** **** Flexural Modulus **** **** ASTM D790 **** **** **** **** **** ASTM D790 ****	Saturation, 23°C	0.80 %	ISO 62
2760 MPa ASTM D638 3000 MPa ISO 527-1 Tensile Strength 65.5 MPa ASTM D638 66.0 MPa ISO 527-2 Tensile Strain ISO 527-2 Break 30 % ASTM D638 Break 30 % ASTM D638 Break 40 % ISO 527-2 Flexural Modulus 2760 MPa ASTM D790 2660 MPa ISO 178 Flexural Strength 82.7 MPa ASTM D790 91.0 MPa ISO 178 Compressive Strength 93.1 MPa ASTM D695 1% Strain 23.0 MPa ISO 604 2% Strain 40.0 MPa ISO 604	Mechanical	Nominal Value Unit	Test Method
Tensile Strength	Tensile Modulus		
Tensile Strength 65.5 MPa ASTM D638 66.0 MPa ISO 527-2 Tensile Strain 15 % ISO 527-2 Yield 15 % ISO 527-2 Break 30 % ASTM D638 Break 40 % ISO 527-2 Flexural Modulus 2760 MPa ASTM D790 2660 MPa ISO 178 Flexural Strength 82.7 MPa ASTM D790 91.0 MPa ISO 178 Compressive Strength 93.1 MPa ASTM D695 1% Strain 23.0 MPa ISO 604 2% Strain 40.0 MPa ISO 604		2760 MPa	ASTM D638
65.5 MPa ASTM D638 66.0 MPa ISO 527-2 Tensile Strain 15% ISO 527-2 Break 30% ASTM D638 Break 40% ISO 527-2 Flexural Modulus 2760 MPa ASTM D790 2660 MPa ISO 178 Flexural Strength 82.7 MPa ASTM D790 91.0 MPa ISO 178 Compressive Strength 93.1 MPa ASTM D695 1% Strain 23.0 MPa ISO 604 2% Strain 40.0 MPa ISO 604		3000 MPa	ISO 527-1
56.0 MPa ISO 527-2 Tensile Strain Yield 15 % ISO 527-2 Break 30 % ASTM D638 Break 40 % ISO 527-2 Flexural Modulus 2760 MPa ASTM D790 2660 MPa ISO 178 Flexural Strength 82.7 MPa ASTM D790 91.0 MPa ISO 178 Compressive Strength 93.1 MPa ASTM D695 1% Strain 23.0 MPa ISO 604 2% Strain 40.0 MPa ISO 604	Tensile Strength		
Tensile Strain Yield 15 % ISO 527-2 Break 30 % ASTM D638 Break 40 % ISO 527-2 Flexural Modulus 2760 MPa ASTM D790 2660 MPa ISO 178 Flexural Strength 82.7 MPa ASTM D790 91.0 MPa ISO 178 Compressive Strength 93.1 MPa ASTM D695 1% Strain 23.0 MPa ISO 604 2% Strain 40.0 MPa ISO 604		65.5 MPa	ASTM D638
Yield 15 % ISO 527-2 Break 30 % ASTM D638 Break 40 % ISO 527-2 Flexural Modulus 2760 MPa ASTM D790 2660 MPa ISO 178 Flexural Strength 82.7 MPa ASTM D790 91.0 MPa ISO 178 Compressive Strength 93.1 MPa ASTM D695 1% Strain 23.0 MPa ISO 604 2% Strain 40.0 MPa ISO 604		66.0 MPa	ISO 527-2
Break 30 % ASTM D638 Break 40 % ISO 527-2 Flexural Modulus 2760 MPa ASTM D790 2660 MPa ISO 178 Flexural Strength 82.7 MPa ASTM D790 91.0 MPa ISO 178 Compressive Strength 93.1 MPa ASTM D695 1% Strain 23.0 MPa ISO 604 2% Strain 40.0 MPa ISO 604	Tensile Strain		
Break 40 % ISO 527-2 Flexural Modulus 2760 MPa ASTM D790 2660 MPa ISO 178 Flexural Strength 82.7 MPa ASTM D790 91.0 MPa ISO 178 Compressive Strength 93.1 MPa ASTM D695 1% Strain 23.0 MPa ISO 604 2% Strain 40.0 MPa ISO 604	Yield	15 %	ISO 527-2
Flexural Modulus 2760 MPa ASTM D790 2660 MPa ISO 178 Flexural Strength 82.7 MPa ASTM D790 91.0 MPa ISO 178 Compressive Strength 93.1 MPa ASTM D695 1% Strain 23.0 MPa ISO 604 2% Strain 40.0 MPa ISO 604	Break	30 %	ASTM D638
2760 MPa ASTM D790 2660 MPa ISO 178 Flexural Strength 82.7 MPa ASTM D790 91.0 MPa ISO 178 Compressive Strength 93.1 MPa ASTM D695 1% Strain 23.0 MPa ISO 604 2% Strain 40.0 MPa ISO 604	Break	40 %	ISO 527-2
2660 MPa ISO 178 Flexural Strength 82.7 MPa ASTM D790 91.0 MPa ISO 178 Compressive Strength 93.1 MPa ASTM D695 1% Strain 23.0 MPa ISO 604 2% Strain 40.0 MPa ISO 604	Flexural Modulus		
Flexural Strength 82.7 MPa ASTM D790 91.0 MPa ISO 178 Compressive Strength 93.1 MPa ASTM D695 1% Strain 23.0 MPa ISO 604 2% Strain 40.0 MPa ISO 604		2760 MPa	ASTM D790
82.7 MPa ASTM D790 91.0 MPa ISO 178 Compressive Strength 93.1 MPa ASTM D695 1% Strain 23.0 MPa ISO 604 2% Strain 40.0 MPa ISO 604		2660 MPa	ISO 178
91.0 MPa ISO 178 Compressive Strength 93.1 MPa ASTM D695 1% Strain 23.0 MPa ISO 604 2% Strain 40.0 MPa ISO 604	Flexural Strength		
Compressive Strength 93.1 MPa ASTM D695 1% Strain 23.0 MPa ISO 604 2% Strain 40.0 MPa ISO 604		82.7 MPa	ASTM D790
93.1 MPa ASTM D695 1% Strain 23.0 MPa ISO 604 2% Strain 40.0 MPa ISO 604		91.0 MPa	ISO 178
1% Strain 23.0 MPa ISO 604 2% Strain 40.0 MPa ISO 604	Compressive Strength		
2% Strain 40.0 MPa ISO 604		93.1 MPa	ASTM D695
	1% Strain	23.0 MPa	ISO 604
5% Strain 72.0 MPa ISO 604	2% Strain	40.0 MPa	ISO 604
	5% Strain	72.0 MPa	ISO 604

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Mechanical	Nominal Value Unit	Test Method
Shear Strength	55.0 MPa	ASTM D732
Coefficient of Friction		
Dynamic	0.30 to 0.45	ISO 7148
Dynamic	0.25	Internal Method
Wear Factor	400 10^-8 mm³/N·m	Internal Method
Limiting Pressure Velocity		
3	2700.0 psi·fpm	Internal Method
4	4568.1 psi⋅fpm	
Wear Rate	45.0 μm/km	ISO 7148
mpact	Nominal Value Unit	Test Method
Charpy Notched Impact Strength	8.0 kJ/m²	ISO 179/1eA
Charpy Unnotched Impact Strength	No Break	ISO 179/1eU
Notched Izod Impact	53 J/m	ASTM D256
Hardness	Nominal Value Unit	Test Method
Rockwell Hardness		
M-Scale	88	ASTM D785
M-Scale	84	ISO 2039-2
Durometer Hardness		
Shore D	85	ASTM D2240
Shore D	79	ISO 868
Thermal	Nominal Value Unit	Test Method
Deflection Temperature Under Load		
1.8 MPa, Unannealed	104 °C	ASTM D648A
1.8 MPa, Unannealed	100 °C	ISO 75-2/A
Melting Temperature		
	165 °C	ISO 11357-3
	168 °C	ASTM D3418
CLTE - Flow		
-40 to 150°C	9.7E-5 cm/cm/°C	ASTM E831
23 to 60°C	1.1E-4 cm/cm/°C	
23 to 100°C	1.3E-4 cm/cm/°C	
Thermal Conductivity	0.31 W/m/K	
Service Temperature		
Air	100°C	
Minimum	-50 °C	
Electrical	Nominal Value Unit	Test Method
Surface Resistivity	1.0E+12 ohms	ESD STM11.11
Volume Resistivity	1.0E+13 ohms⋅m	IEC 62631-3-1
Dielectric Strength		
	17 kV/mm	ASTM D149
	20 kV/mm	IEC 60243-1
Dielectric Constant (1 MHz)	3.80	ASTM D150 IEC 62631-2-1
Dissipation Factor (1 MHz)	0.010	ASTM D150 IEC 62631-2-1

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Flammability	Nominal Value Unit	Test Method
Flame Rating (3.0 mm)	НВ	UL 94
Oxygen Index	15 %	ISO 4589-2

Notes

- ¹ These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.
- ² Typical properties: these are not to be construed as specifications.
- ³ at 100 FPM
- ⁴ at 0.1 / 1 m/s cylindrical sleeve bearings



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