

CAMPUS® Datasheet

Hytre® 4053FG NC010 - TPC Celanese



Product Texts

Common features of Hytre® thermoplastic polyester elastomer include mechanical and physical properties such as exceptional toughness and resilience, high resistance to creep, impact and flex fatigue, flexibility at low temperatures and good retention of properties at elevated temperatures. In addition, it resists many industrial chemicals, oils and solvents. Special grades include heat stabilised, flame retardant, food contact compliant, blow molding and extrusion grades. Concentrates offered include black pigments, UV protection additives, heat stabilisers, and flame retardants.

Hytre® thermoplastic polyester elastomer is plasticiser free.

The good melt stability of Hytre® thermoplastic polyester elastomer normally enables the recycling of properly handled production waste. If recycling is not possible, we recommend, as the preferred option, incineration with energy recovery (-24 kJ/g of base polymer) in appropriately equipped installations.

For disposal, local regulations have to be observed.

Hytre® thermoplastic polyester elastomer typically is used in demanding applications in the automotive, fluid power, electrical/electronic, consumer goods, appliance and power tool, sporting goods, furniture, industrial and off-road transportation/equipment industry.

Hytre® 4053FG is a low modulus high performance thermoplastic elastomer developed for applications in contact with food. It is suitable for extrusion and injection molding processes.

FOOD CONTACT

This product is manufactured according to Good Manufacturing Practice (GMP) principles and generally accepted in food contact applications in Europe and the USA when meeting applicable use conditions. For details, individual compliance statements are available from our representative.

Rheological properties	Value	Unit	Test Standard
Melt volume-flow rate, MVR	5	cm ³ /10min	ISO 1133
Temperature	190	°C	ISO 1133
Load	2.16	kg	ISO 1133
Molding shrinkage, parallel	0.2	%	ISO 294-4, 2577
Molding shrinkage, normal	0.4	%	ISO 294-4, 2577
Mechanical properties	Value	Unit	Test Standard
Tensile modulus	56	MPa	ISO 527-1/-2
Stress at 10% elongation	4.4	MPa	ISO 527-1/-2
Stress at break TPE	26	MPa	ISO 527-1/-2
Strain at break TPE	>300	%	ISO 527-1/-2
Tensile creep modulus, 1h	50	MPa	ISO 899-1
Tensile creep modulus, 1000h	40	MPa	ISO 899-1
Charpy impact strength, +23°C	N	kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C	N	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, +23°C	N	kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -30°C	N	kJ/m ²	ISO 179/1eA
Tensile notched impact strength, +23°C	230	kJ/m ²	ISO 8256/1
Shore D hardness	38	-	ISO 48-4
Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	150	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	-50	°C	ISO 11357-1/-2
Temp. of deflection under load, 0.45 MPa	50	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel	220	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	220	E-6/K	ISO 11359-1/-2
Burning behavior at 1.5 mm nominal thickness	HB	class	IEC 60695-11-10
Thickness tested (1.5)	1.5	mm	IEC 60695-11-10
Yellow Card available	Yes	-	-
FMVSS	SE	-	ISO 3795 (FMVSS 302)
Oxygen index	20	%	ISO 4589-1/-2

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Electrical properties	Value	Unit	Test Standard
Relative permittivity, 100Hz	5.2	-	IEC 62631-2-1
Relative permittivity, 1MHz	4.7	-	IEC 62631-2-1
Dissipation factor, 100Hz	110	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	525	E-4	IEC 62631-2-1
Volume resistivity	7E10	Ohm*m	IEC 62631-3-1
Surface resistivity	2E14	Ohm	IEC 62631-3-2
Electric strength	18	kV/mm	IEC 60243-1
Comparative tracking index	600	-	IEC 60112
Other properties	Value	Unit	Test Standard
Water absorption	0.7	%	Sim. to ISO 62
Humidity absorption	0.2	%	Sim. to ISO 62
Density	1160	kg/m³	ISO 1183
Rheological calculation properties	Value	Unit	Test Standard
Density of melt	1020	kg/m³	-
Eff. thermal diffusivity	5.44E-8	m²/s	-

Characteristics

Processing	Special Characteristics
Injection Molding, Film Extrusion, Profile Extrusion, Sheet Extrusion, Other Extrusion, Coating, Calendering, Casting, Thermoforming	Light stabilized or stable to light
Delivery form	Regional Availability
Pellets	North America, Europe, Asia Pacific, South and Central America

Other text information

Injection molding	
Snake Flow Test , mm	
Inject press 62MPa, 1mm	80
Inject press 62MPa, 2.5mm	330
Inject press 83MPa(12,000psi), 1mm	95
Inject press 83MPa(12,000psi), 2.5mm	430

Chemical Media Resistance

Other
☺ Deionized water (90°C)

NOTICE TO USERS: Values shown are based on testing of laboratory test specimens and represent data that fall within the standard range of properties for natural material. These values alone do not represent a sufficient basis for any part design and are not intended for use in establishing maximum, minimum, or ranges of values for specification purposes. Colorants or other additives may cause significant variations in data values. Properties of molded parts can be influenced by a wide variety of factors including, but not limited to, material selection, additives, part design, processing conditions and environmental exposure. Other than those products expressly identified as medical grade (including by MT® product designation or otherwise), Celanese's products are not intended for use in medical or dental implants. Regardless of any such product designation, any determination of the suitability of a particular material and part design for any use contemplated by the users and the manner of such use is the sole responsibility of the users, who must assure themselves that the material as subsequently processed meets the needs of their particular product or use. To the best of our knowledge, the information contained in this publication is accurate; however, we do not assume any liability whatsoever for the accuracy and completeness of such information. The information contained in this publication should not be construed as a promise or guarantee of specific properties of our products. It is the sole responsibility of the users to investigate whether any existing patents are infringed by the use of the materials

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