



ISO 527-1/-2

ISO 527-1/-2

ISO 527-1/-2

ISO 179/1eU

ISO 179/1eU

Hytrel® 5553FG NC010

THERMOPLASTIC POLYESTER ELASTOMER

Common features of Hytrel® 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. Hytrel® thermoplastic polyester elastomer is plasticiser free.

The good melt stability of Hytrel® 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.

Hytrel® 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.

Hytrel® 5553FG NC010 is a high performance thermoplastic polyester elastomer developed for applications in contact with food.

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.

Product information

Tensile stress at break

Nominal strain at break

Tensile strain at break

Charpy impact strength, 23°C

Charpy impact strength, -30°C

Resin Identification Part Marking Code	TPC-ET >TPC-ET<		ISO 1043 ISO 11469
Rheological properties			
Melt volume-flow rate	7	cm ³ /10min	ISO 1133
Temperature	220	°C	
Load	2.16	kg	
Melt mass-flow rate	8	g/10min	ISO 1133
Melt mass-flow rate, Temperature	220	°C	
Melt mass-flow rate, Load	2.16	kg	
Moulding shrinkage, parallel	1.4	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.4	%	ISO 294-4, 2577
Typical mechanical properties			
Tensile modulus	170	MPa	ISO 527-1/-2
Tensile stress at yield	14	MPa	ISO 527-1/-2
Tensile strain at yield	40	%	ISO 527-1/-2
Stress at 5% strain	6.6	MPa	ISO 527-1/-2
Stress at 10% strain	10.2	MPa	ISO 527-1/-2
Tensile stress at 100% strain	15	MPa	ISO 527-1/-2

Printed: 2025-05-30 Page: 1 of 16

40 MPa

N kJ/m²

N kJ/m²

600 %

>300 %

Revised: 2025-04-19 Source: Celanese Materials Database





THERMOPLASTIC POLYESTER ELASTOMER

Charpy notched impact strength, 23°C Charpy notched impact strength, -40°C Poisson's ratio Shore D hardness, 15s Shore D hardness, max		kJ/m² kJ/m²	ISO 179/1eA ISO 179/1eA ISO 48-4 / ISO 868 ISO 868
Thermal properties Melting temperature, 10°C/min	201		ISO 11357-1/-3
Glass transition temperature, 10°C/min Temperature of deflection under load, 1.8 MPa Temperature of deflection under load, 0.45 MPa Vicat softening temperature, 50°C/h 50N Vicat softening temperature, 50°C/h 10N Effective thermal diffusivity, flow [DS]: Derived from similar grade	70	°C °C °C	ISO 11357-1/-3 ISO 75-1/-2 ISO 75-1/-2 ISO 306 ISO 306 ISO 22007-4
Flammability			
Burning Behav. at 1.5mm nom. thickn. Thickness tested Oxygen index FMVSS Class [DS]: Derived from similar grade		class mm %	IEC 60695-11-10 IEC 60695-11-10 ISO 4589-1/-2 ISO 3795 (FMVSS 302)
Electrical properties			
Relative permittivity, 100Hz Relative permittivity, 1MHz Dissipation factor, 100Hz Dissipation factor, 1MHz Volume resistivity Surface resistivity Electric strength Comparative tracking index [DS]: Derived from similar grade	4.8 ^[DS] 4.4 ^[DS] 90 ^[DS] 375 ^[DS] 4E11 ^[DS] >1E15 ^[DS] 19 ^[DS] 600 ^[DS]	E-4 Ohm.m	IEC 62631-2-1 IEC 62631-2-1 IEC 62631-2-1 IEC 62631-2-1 IEC 62631-3-1 IEC 62631-3-2 IEC 60243-1 IEC 60112
Physical/Other properties			
Humidity absorption, 2mm Water absorption, 2mm Water absorption, Immersion 24h Density Density of melt [DS]: Derived from similar grade	0.2 0.6 0.6 1200 1030 ^[DS]	% % kg/m³	Sim. to ISO 62 Sim. to ISO 62 Sim. to ISO 62 ISO 1183

Printed: 2025-05-30 Page: 2 of 16

Revised: 2025-04-19 Source: Celanese Materials Database

(+) 18816996168 Ponciplastics.com



Hytrel® 5553FG NC010

THERMOPLASTIC POLYESTER ELASTOMER

VDA Properties

Emission of organic compounds	8.5 μgC/g	VDA 277
Odour	5 class	VDA 270
Fogging, G-value (condensate)	0.1 mg	ISO 6452

Injection

Drying Recommended	yes
Drying Temperature	100 °C
Drying Time, Dehumidified Dryer	2-3 h
Processing Moisture Content	≤0.08 %
Melt Temperature Optimum	230 °C
Min. melt temperature	220 °C
Max. melt temperature	250 °C
Mold Temperature Optimum	45 °C
Min. mould temperature	45 °C
Max. mould temperature	55 °C

Extrusion

Drying Temperature	90 - 110	°C
Drying Time, Dehumidified Dryer	2 - 3	h
Processing Moisture Content	≤0.06	%
Melt Temperature Optimum	225	°C
Melt Temperature Range	220 - 235	°C

Characteristics

Processing Injection Moulding, Film Extrusion, Extrusion, Sheet Extrusion, Other Extrusion,

Coatable, Casting, Thermoforming

Delivery form Pellets

Additional information

Injection molding PREPROCESSING

Drying recommended = Yes Drying temperature = 100°C

Drying time, dehumidified dryer = 2-3 h Processing moisture content = <0.08 %

PROCESSING

Melt temperature optimum = 230 °C Melt temperature range = 220-250 °C Mold temperature optimum = 45 °C Mold temperature range = 45-55 °C

Profile extrusion PREPROCESSING

Drying temperature = 100°C

Printed: 2025-05-30 Page: 3 of 16

Revised: 2025-04-19 Source: Celanese Materials Database





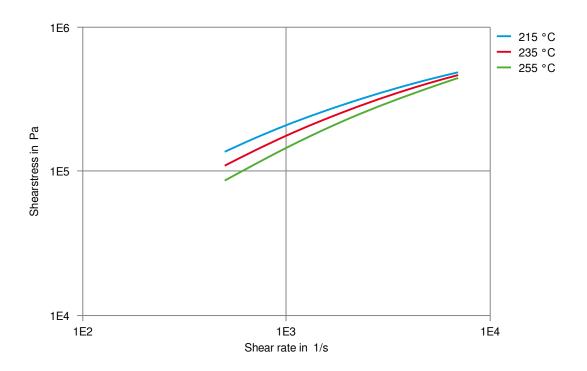
THERMOPLASTIC POLYESTER ELASTOMER

Drying time, dehumidified dryer = 2-3 hProcessing moisture content = <0.06 %

PROCESSING

Melt temperature optimum = 225°C Melt temperature range = 215-235°C

Shearstress-shear rate



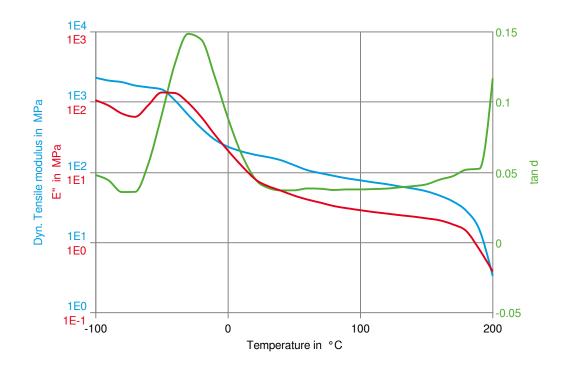
Printed: 2025-05-30 Page: 4 of 16





THERMOPLASTIC POLYESTER ELASTOMER

Dynamic Tensile modulus-temperature (measured on Hytrel® 5556)



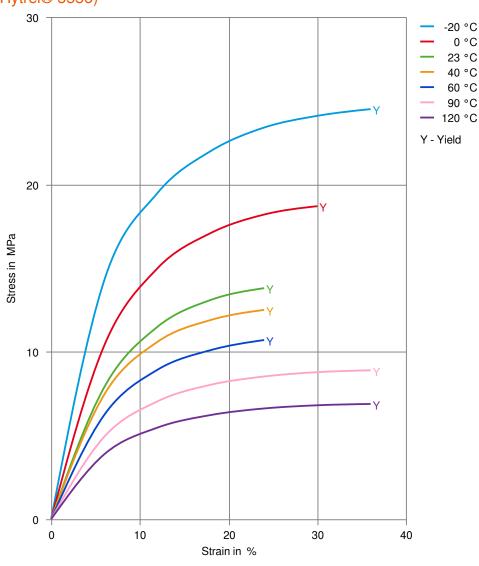
Printed: 2025-05-30 Page: 5 of 16





THERMOPLASTIC POLYESTER ELASTOMER

Stress-strain (measured on Hytrel® 5556)



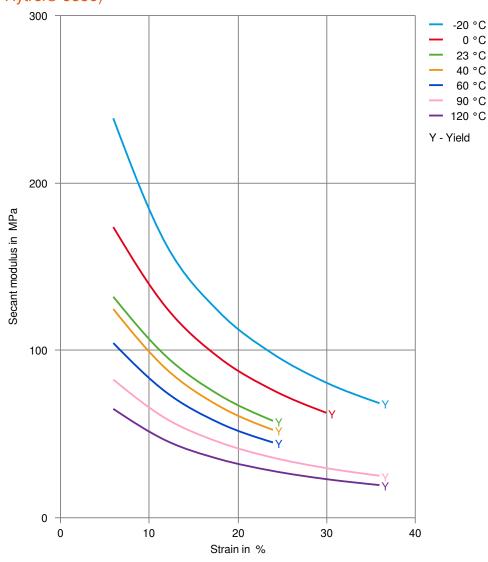
Printed: 2025-05-30 Page: 6 of 16





THERMOPLASTIC POLYESTER ELASTOMER

Secant modulus-strain (measured on Hytrel® 5556)



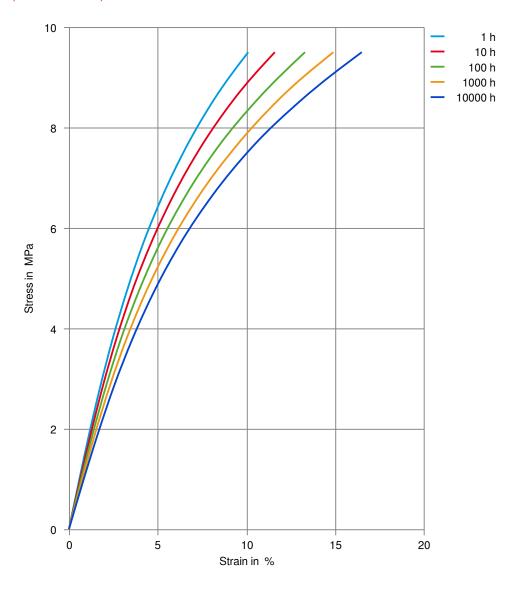
Printed: 2025-05-30 Page: 7 of 16





THERMOPLASTIC POLYESTER ELASTOMER

Stress-strain (isochronous) 23°C



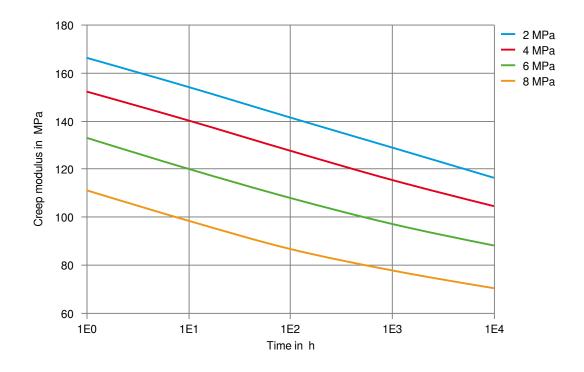
Printed: 2025-05-30 Page: 8 of 16





THERMOPLASTIC POLYESTER ELASTOMER

Creep modulus-time 23°C



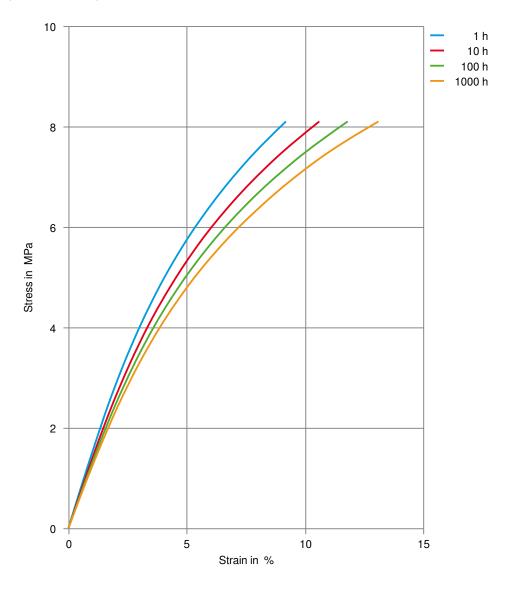
Printed: 2025-05-30 Page: 9 of 16





THERMOPLASTIC POLYESTER ELASTOMER

Stress-strain (isochronous) 40°C



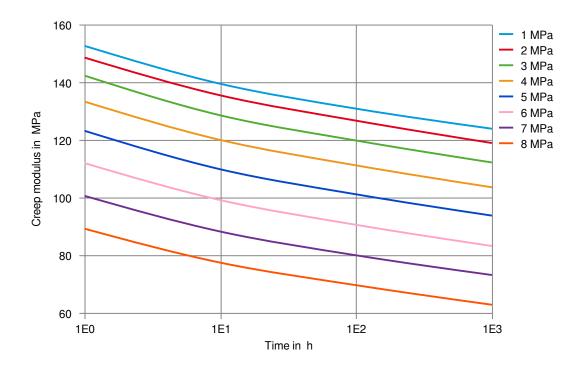
Printed: 2025-05-30 Page: 10 of 16





THERMOPLASTIC POLYESTER ELASTOMER

Creep modulus-time 40°C



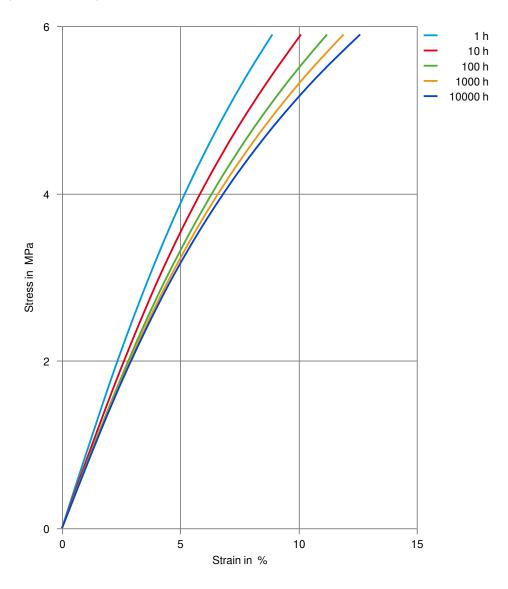
Printed: 2025-05-30 Page: 11 of 16





THERMOPLASTIC POLYESTER ELASTOMER

Stress-strain (isochronous) 80°C



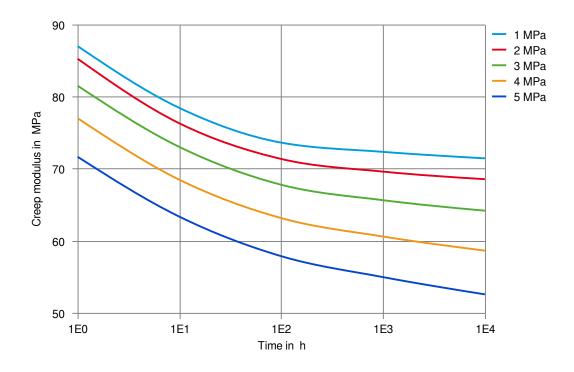
Printed: 2025-05-30 Page: 12 of 16





THERMOPLASTIC POLYESTER ELASTOMER

Creep modulus-time 80°C



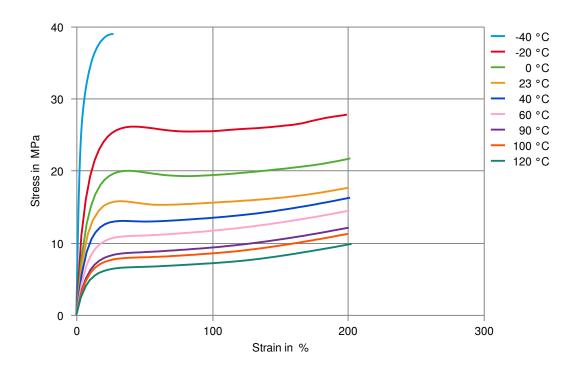
Printed: 2025-05-30 Page: 13 of 16





THERMOPLASTIC POLYESTER ELASTOMER

Stress-Strain (Flexible Materials) (measured on Hytrel® 5556)



Printed: 2025-05-30 Page: 14 of 16

(+) 18816996168 Ponciplastics.com



Hytrel® 5553FG NC010

THERMOPLASTIC POLYESTER ELASTOMER

Chemical Media Resistance

Acids

- ✓ Acetic Acid (5% by mass), 23°C
- ✓ Citric Acid solution (10% by mass), 23°C
- ✓ Lactic Acid (10% by mass), 23°C
- X Hydrochloric Acid (36% by mass), 23°C
- X Nitric Acid (40% by mass), 23°C
- X Sulfuric Acid (38% by mass), 23°C
- ✓ Sulfuric Acid (5% by mass), 23°C
- X Chromic Acid solution (40% by mass), 23°C

Bases

- ✓ Sodium Hydroxide solution (35% by mass), 23°C
- ✓ Sodium Hydroxide solution (1% by mass), 23°C
- ✓ Ammonium Hydroxide solution (10% by mass), 23°C

Alcohols

- ✓ Isopropyl alcohol, 23°C
- ✓ Methanol, 23°C
- ✓ Ethanol, 23°C

Hydrocarbons

- ✓ n-Hexane, 23°C
- ✓ Toluene, 23°C
- ✓ iso-Octane, 23°C

Ketones

X Acetone, 23°C

Ethers

X Diethyl ether, 23°C

Mineral oils

- ✓ SAE 10W40 multigrade motor oil, 23°C
- X SAE 10W40 multigrade motor oil, 130°C
- X SAE 80/90 hypoid-gear oil, 130 °C
- ✓ Insulating Oil, 23°C

Standard Fuels

- X ISO 1817 Liquid 1 E5, 60°C
- X ISO 1817 Liquid 2 M15E4, 60°C
- X ISO 1817 Liquid 3 M3E7, 60°C
- X ISO 1817 Liquid 4 M15, 60°C
- ✓ Standard fuel without alcohol (pref. ISO 1817 Liquid C), 23°C
- ✓ Standard fuel with alcohol (pref. ISO 1817 Liquid 4), 23°C
- ✓ Diesel fuel (pref. ISO 1817 Liquid F), 23°C
- ✓ Diesel fuel (pref. ISO 1817 Liquid F), 90°C
- ➤ Diesel fuel (pref. ISO 1817 Liquid F), >90°C

Salt solutions

- ✓ Sodium Chloride solution (10% by mass), 23°C
- ★ Sodium Hypochlorite solution (10% by mass), 23°C

Printed: 2025-05-30 Page: 15 of 16





THERMOPLASTIC POLYESTER ELASTOMER

- ✓ Sodium Carbonate solution (20% by mass), 23°C
- ✓ Sodium Carbonate solution (2% by mass), 23°C
- ✓ Zinc Chloride solution (50% by mass), 23°C

Other

- ✓ Ethyl Acetate, 23°C
- X Hydrogen peroxide, 23°C
- X DOT No. 4 Brake fluid, 130°C
- ➤ Ethylene Glycol (50% by mass) in water, 108°C
- ✓ 50% Oleic acid + 50% Olive Oil, 23°C
- ✓ Water, 23°C
- ✓ Water. 90°C
- ✓ Phenol solution (5% by mass), 23°C

Symbols used:

possibly resistant

Defined as: Supplier has sufficient indication that contact with chemical can be potentially accepted under the intended use conditions and expected service life. Criteria for assessment have to be indicated (e.g. surface aspect, volume change, property change).

not recommended - see explanation
Defined as: Not recommended for general use. However, short-term exposure under certain restricted conditions could be acceptable (e.g. fast cleaning with thorough rinsing, spills, wiping, vapor exposure).

Printed: 2025-05-30 Page: 16 of 16

Revised: 2025-04-19 Source: Celanese Materials Database

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. Colourants or other additives may cause significant variations in data values. Properties of moulded 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 mentioned in this publication. Moreover, there is a need to reduce human exposure to many materials to the lowest practical limits in view of possible adverse effects. To the extent that any hazards may have been mentioned in this publication, we neither suggest nor guarantee that such hazards are the only ones that exist. We recommend that persons intending to rely on any recommendation or to use any e

© 2025 Celanese or its affiliates. All rights reserved. Celanese®, registered C-ball design and all other trademarks identified herein with ®, TM, SM, unless otherwise noted, are trademarks of Celanese or its affiliates. Fortron is a registered trademark of Fortron Industries LLC.