Celanese
The chemistry inside innovation™

Hytrel® G3548 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® G3548 is a low modulus grade with nominal hardness of 35D. It contains non-discoloring stabilizer. It can be processed by many conventional thermoplastic processing techniques like injection molding and extrusion.

Product information

Resin Identification	TPC-ET	ISO 1043
Part Marking Code	>TPC-ET<	ISO 11469

Rheological properties

Melt mass-flow rate	10	g/10min	ISO 1133
Melt mass-flow rate, Temperature	190	°C	
Melt mass-flow rate, Load	2.16	kg	
Moulding shrinkage, parallel	0.8	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.8	%	ISO 294-4, 2577

Typical mechanical properties

Tensile modulus	25	MPa	ISO 527-1/-2
Stress at 5% strain	1.5	MPa	ISO 527-1/-2
Stress at 10% strain	2.5	MPa	ISO 527-1/-2
Tensile stress at 50% strain, 1BA	6	MPa	ISO 527-1/-2
Tensile stress at break, 50mm/min	10	MPa	ISO 527-1/-2
Tensile stress at break	10	MPa	ISO 527-1/-2
Nominal strain at break	200	%	ISO 527-1/-2
Tensile strain at break, 50mm/min	200	%	ISO 527-1/-2
Tensile strain at break	190	%	ISO 527-1/-2
Flexural modulus	25	MPa	ISO 178
Charpy notched impact strength, 23 °C	N	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30 °C	N	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -40 °C	N	kJ/m²	ISO 179/1eA
Izod notched impact strength, -40 °C	N	kJ/m²	ISO 180/1A
Shore D hardness, 15s	24		ISO 48-4 / ISO 868
Tear strength, parallel	54	kN/m	ISO 34-1
Tear strength, normal	70	kN/m	ISO 34-1

Celanese
The chemistry inside innovation™

Hytrel® G3548 NC010

THERMOPLASTIC POLYESTER ELASTOMER

Thermal properties

Melting temperature, 10°C/min	157	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	-45	°C	ISO 11357-1/-3
Vicat softening temperature, 50°C/h 10N	70	°C	ISO 306
RTI, electrical, 1.5mm	50	°C	UL 746B
RTI, electrical, 3.0mm	50	°C	UL 746B
RTI, impact, 1.5mm	50	°C	UL 746B
RTI, impact, 3.0mm	50	°C	UL 746B
RTI, strength, 1.5mm	50	°C	UL 746B
RTI, strength, 3.0mm	50	°C	UL 746B

Flammability

Burning Behav. at 1.5mm nom. thickn.	HB	class	IEC 60695-11-10
Thickness tested	1.5	mm	IEC 60695-11-10
UL recognition	yes		UL 94
Burning Behav. at thickness h	HB	class	IEC 60695-11-10
Thickness tested	3	mm	IEC 60695-11-10
UL recognition	yes		UL 94
FMVSS Class	B		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	52	mm/min	ISO 3795 (FMVSS 302)

Physical/Other properties

Humidity absorption, 2mm	0.8	%	Sim. to ISO 62
Water absorption, 2mm	12	%	Sim. to ISO 62
Water absorption, Immersion 24h	6.9	%	Sim. to ISO 62
Density	1150	kg/m³	ISO 1183

Injection

Drying Recommended	yes	
Drying Temperature	90	°C
Drying Time, Dehumidified Dryer	2 - 3	h
Processing Moisture Content	≤0.08	%
Melt Temperature Optimum	190	°C
Min. melt temperature	180	°C
Max. melt temperature	200	°C
Mold Temperature Optimum	40	°C
Min. mould temperature	30	°C
Max. mould temperature	41	°C
Ejection temperature	70	°C

Extrusion

Drying Temperature	80	°C
Drying Time, Dehumidified Dryer	2 - 3	h
Processing Moisture Content	≤0.06	%
Melt Temperature Optimum	180	°C
Melt Temperature Range	170 - 185	°C

Celanese
The chemistry inside innovation™

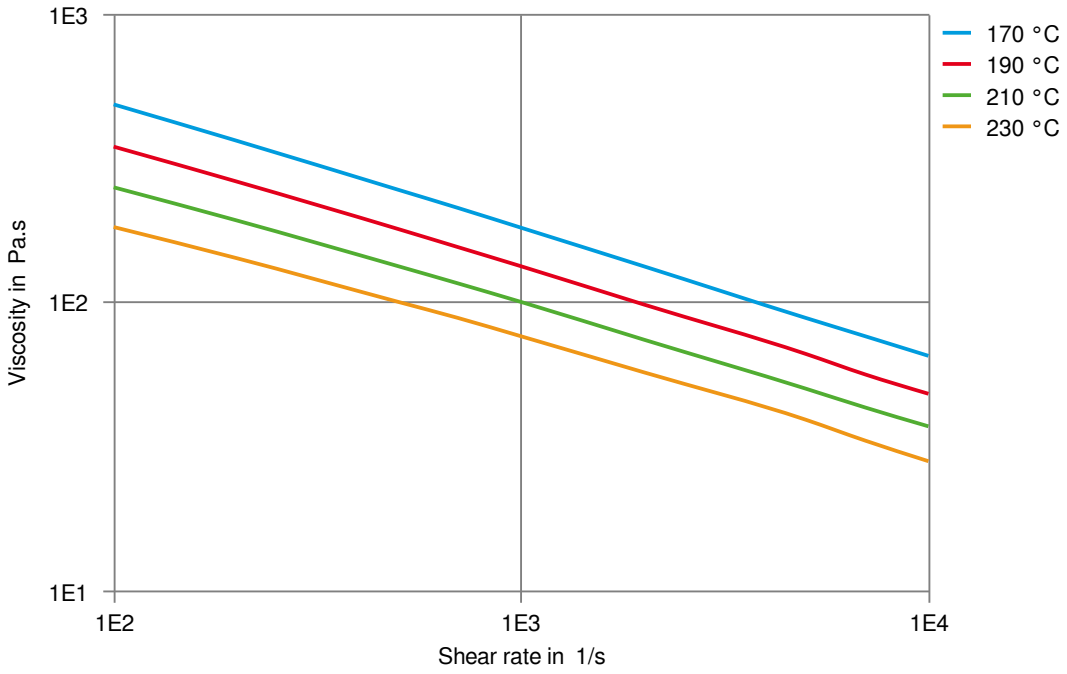
Hytrel® G3548 NC010

THERMOPLASTIC POLYESTER ELASTOMER

Characteristics

Processing	Injection Moulding, Film Extrusion, Extrusion, Other Extrusion
Delivery form	Pellets

Viscosity-shear rate

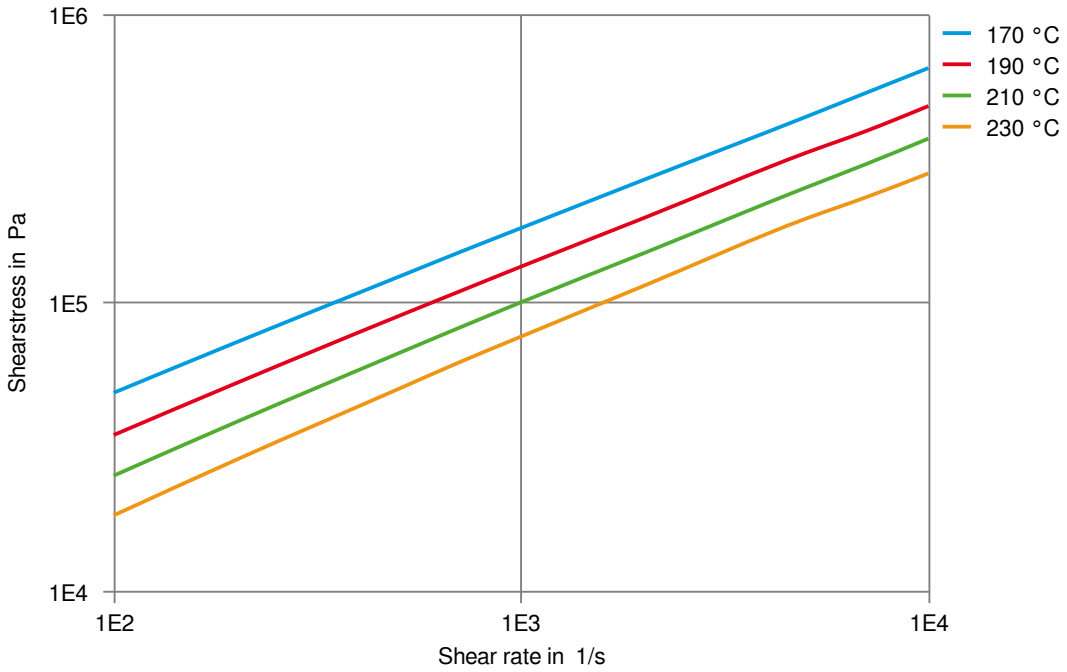


Celanese
The chemistry inside innovation™

Hytrel® G3548 NC010

THERMOPLASTIC POLYESTER ELASTOMER

Shearstress-shear rate

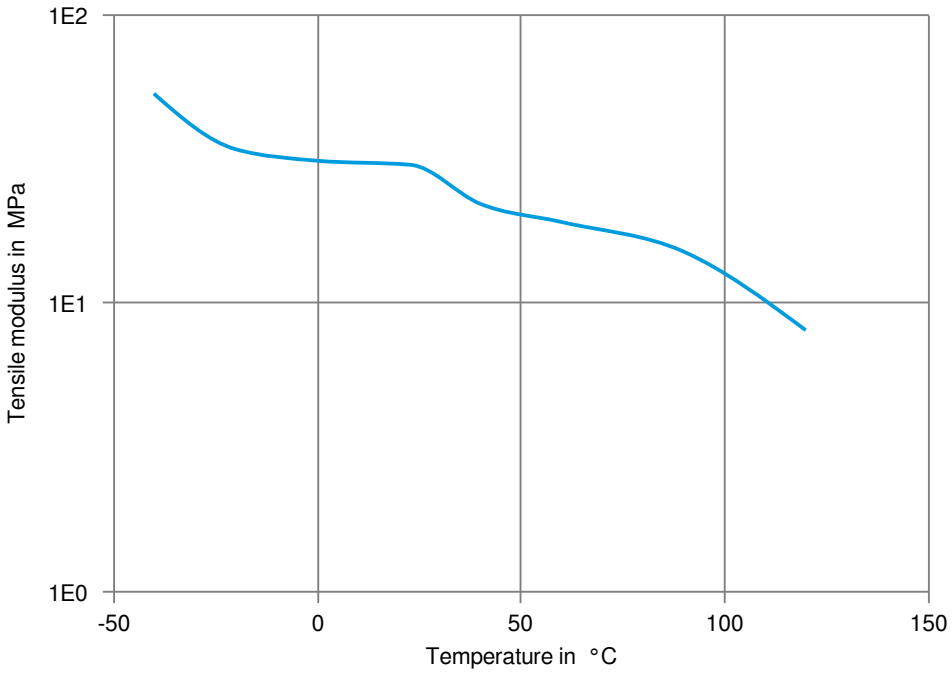


Celanese
The chemistry inside innovation™

Hytrel® G3548 NC010

THERMOPLASTIC POLYESTER ELASTOMER

Tensile modulus-temperature

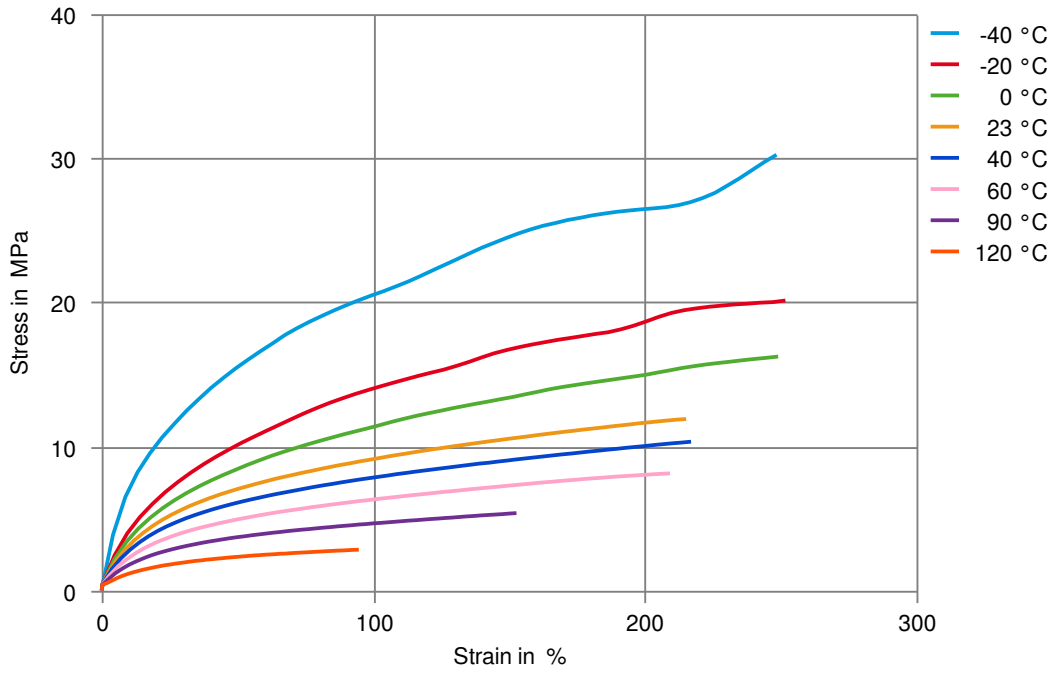


Celanese
The chemistry inside innovation™

Hytrel® G3548 NC010

THERMOPLASTIC POLYESTER ELASTOMER

Stress-Strain (Flexible Materials)



Celanese
The chemistry inside innovation™

Hytrel® G3548 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
- ✘ Hydrochloric Acid (36% by mass), 23°C
- ✘ Nitric Acid (40% by mass), 23°C
- ✘ Sulfuric Acid (38% by mass), 23°C
- ✔ Sulfuric Acid (5% by mass), 23°C
- ✘ 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

- ✘ Acetone, 23°C

Ethers

- ✘ Diethyl ether, 23°C

Mineral oils

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

Standard Fuels

- ✘ ISO 1817 Liquid 1 - E5, 60°C
- ✘ ISO 1817 Liquid 2 - M15E4, 60°C
- ✘ ISO 1817 Liquid 3 - M3E7, 60°C
- ✘ 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

Celanese
The chemistry inside innovation™

Hytrel® G3548 NC010

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
- ✘ Hydrogen peroxide, 23°C
- ✘ DOT No. 4 Brake fluid, 130°C
- ✘ Ethylene Glycol (50% by mass) in water, 108°C
- ✔ 1% nonylphenoxy-polyethyleneoxy ethanol in water, 23°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).

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