

DuPont™ Hytrel® G3548 NC010

THERMOPLASTIC POLYESTER ELASTOMER

Product Information

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, DuPont recommends, 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.

| General information | Value | Unit | Test Standard |
|---|--------|-------------------|-----------------|
| Resin Identification | TPC-ET | - | ISO 1043 |
| Part Marking Code | TPC-ET | - | ISO 11469 |
| Rheological properties | Value | Unit | Test Standard |
| Moulding shrinkage, parallel | 0.8 | % | ISO 294-4, 2577 |
| Moulding shrinkage, normal | 0.8 | % | ISO 294-4, 2577 |
| Mechanical properties (TPE) | Value | Unit | Test Standard |
| 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 |
| Stress at 50% strain | 6 | MPa | ISO 527-1/-2 |
| Stress at break | 10 | MPa | ISO 527-1/-2 |
| Strain at break | 190 | % | ISO 527-1/-2 |
| Nominal strain at break | 200 | % | ISO 527-1/-2 |
| Tear strength, parallel | 60 | kN/m | ISO 34-1 |
| Tear strength, normal | 80 | kN/m | ISO 34-1 |
| Shore D hardness, 15s | 24 | - | ISO 7619-1 |
| Mechanical properties | Value | Unit | Test Standard |
| Flexural Modulus | 25 | MPa | ISO 178 |
| Charpy notched impact strength | | | ISO 179/1eA |
| 23 °C | N | kJ/m ² | |
| -30 °C | N | kJ/m ² | |
| -40 °C | N | kJ/m ² | |
| Izod notched impact strength, -40 °C | N | kJ/m ² | ISO 180/1A |
| Thermal properties | Value | Unit | Test Standard |
| Melting temperature, 10 °C/min | 157 | °C | ISO 11357-1/-3 |
| Vicat softening temperature, 50 °C/h, 10N | 70 | °C | ISO 306 |
| RTI, electrical | | | UL 746B |
| 1.5mm | 50 | °C | |
| 3mm | 50 | °C | |
| RTI, impact | | | UL 746B |
| 1.5mm | 50 | °C | |
| 3mm | 50 | °C | |
| RTI, strength | | | UL 746B |
| 1.5mm | 50 | °C | |
| 3mm | 50 | °C | |

Revised: 2017-01-18

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To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

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| Flammability | Value | Unit | Test Standard |
|--------------------------------------|--|---|--|
| 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 |
| Flammability, 3.0mm | HB | - | IEC 60695-11-10 |
| FMVSS Class | B | - | ISO 3795 (FMVSS 302) |
| Burning rate, Thickness 1 mm | 52 | mm/min | ISO 3795 (FMVSS 302) |
| Other properties | Value | Unit | Test Standard |
| Humidity absorption, 2mm | 0.8 | % | Sim. to ISO 62 |
| Water absorption, 2mm | 12 | % | Sim. to ISO 62 |
| Density | 1150 | kg/m ³ | ISO 1183 |
| Water Absorption, Immersion 24h | 6.9 | % | Sim. to ISO 62 |
| Injection | Value | Unit | Test Standard |
| 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 | 40 | °C | - |
| Extrusion | Value | Unit | Test Standard |
| Processing Moisture Content | ≤0.06 | % | - |
| Melt Temperature Optimum | 180 | °C | - |
| Characteristics | | | |
| Processing | <ul style="list-style-type: none"> • Injection Moulding • Film Extrusion | <ul style="list-style-type: none"> • Profile Extrusion • Other Extrusion | |
| Delivery form | <ul style="list-style-type: none"> • Pellets | | |
| Regional Availability | <ul style="list-style-type: none"> • North America • Europe | <ul style="list-style-type: none"> • Asia Pacific • South and Central America | <ul style="list-style-type: none"> • Near East/Africa • Global |

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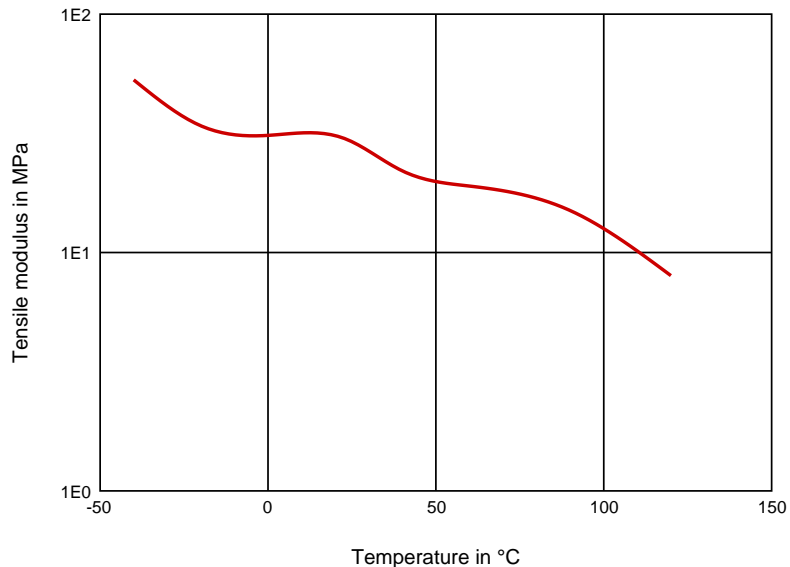


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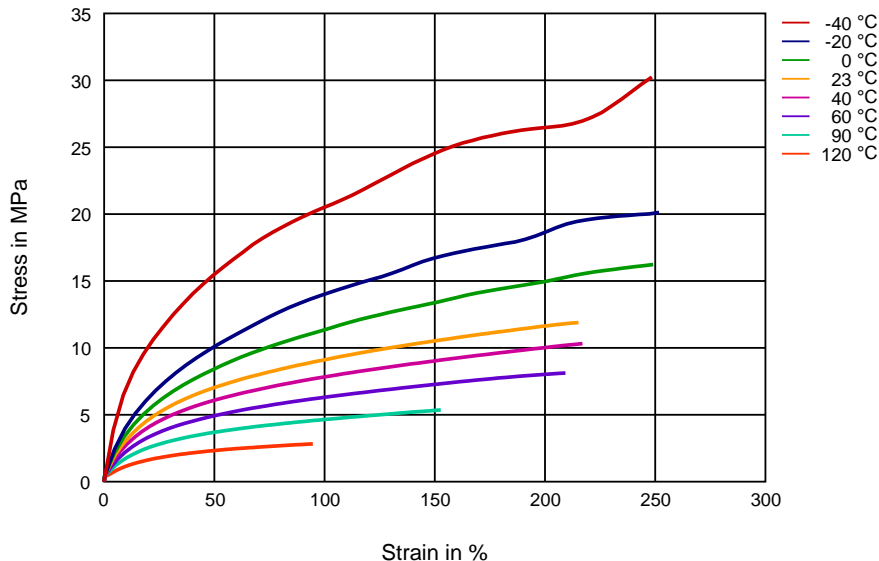
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Diagrams

Tensile modulus-temperature



Stress-Strain (TPE)



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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)

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- ✓ 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)
- ✓ 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).

Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc. ISO Mechanical properties measured at 4mm (Hytrel® measured at 2 mm), IEC Electrical properties measured at 2mm, all ASTM properties measured at 3.2mm, and test temperatures are 23°C unless otherwise stated.

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