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INEOS Styrolution

ALBIS

# Terluran ECO® HI-10 BC50

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Terluran ECO® HI-10 BC50 is an medium flow, injection molding grade with very high resistance to impact with excellent heat distortion and suitable for injection molding and extrusion. Terluran ECO® HI-10 BC50 contains bio-attributed content from styrene monomer from renewable sources, The use of renewable feedstock brings significant product carbon footprint savings. Terluran ECO® HI-10 BC50 is produced according to an ISCC-certified mass balance approach, and has identical physical and mechanical properties as its fossil-based counterpart. All the same regulatory documents are also available.

| Rheological properties | Value | Unit | Test Standard |
|---|---|---|---|
| **ISO Data** | | | |
| Melt volume-flow rate, MVR | 5.5 | cm³/10min | ISO 1133 |
| Temperature | 220 | °C | - |
| Load | 10 | kg | - |

| Mechanical Properties | Value | Unit | Test Standard |
|---|---|---|---|
| **ISO Data** | | | |
| Tensile Modulus | 1900 | MPa | ISO 527 |
| Yield stress | 38 | MPa | ISO 527 |
| Yield strain | 2.8 | % | ISO 527 |
| Nominal strain at break | 9 | % | ISO 527 |
| Impact Strength (Charpy), -30°C | 140 | kJ/m² | ISO 179/1eU |
| Notched Impact Strength (Charpy), +23°C | 35 | kJ/m² | ISO 179/1eA |
| Notched Impact Strength (Charpy), -30°C | 13 | kJ/m² | ISO 179/1eA |
| Flexural strength | 56 | MPa | ISO 178 |
| Notched Impact Strength (Izod), 23°C | 36 | kJ/m² | ISO 180/1A |
| Notched Impact Strength (Izod) | 14 | kJ/m² | ISO 180/1A |
| Temperature | -30 | °C | - |
| Ball Indentation Hardness | 74 | MPa | ISO 2039-1 |

| Thermal Properties | Value | Unit | Test Standard |
|---|---|---|---|
| **ISO Data** | | | |
| Temp. of deflection under load (1.80 MPa) | 93 | °C | ISO 75-1/-2 |
| Temp. of deflection under load (0.45 MPa) | 97 | °C | ISO 75-1/-2 |
| Vicat softening temperature, 50°C/h 50N | 90 | °C | ISO 306 |
| Burning Behav. at 1.5 mm Nom. Thickn. | HB | class | UL 94 |
| Thickness tested | 1.5 | mm | - |
| UL recognition | yes | - | - |
| Burning Behav. at thickness h | HB | class | UL 94 |
| Thickness tested | 3.0 | mm | - |
| UL recognition | yes | - | - |
| **ASTM Data** | | | |
| Thermal Conductivity, solid state | 0.17 | W/(m K) | ISO 22007-4 |

| Electrical Properties | Value | Unit | Test Standard |
|---|---|---|---|
| **ISO Data** | | | |
| Relative permittivity, 100Hz | 2.9 | - | IEC 62631-2-1 |
| Relative permittivity, 1MHz | 2.8 | - | IEC 62631-2-1 |
| Dissipation Factor, 100Hz | 54 | E-4 | IEC 62631-2-1 |
| Dissipation Factor, 1MHz | 82 | E-4 | IEC 62631-2-1 |
| Volume Resistivity | >1E13 | Ohm*m | IEC 62631-3-1 |
| Surface Resistivity | 1E13 | Ohm | IEC 62631-3-2 |

| Other Properties | Value | Unit | Test Standard |
|---|---|---|---|
| **ISO Data** | | | |
| Water Absorption | 1.03 | % | Sim. to ISO 62 |
| Humidity absorption | 0.21 | % | Sim. to ISO 62 |
| Density | 1030 | kg/m³ | ISO 1183 |
| Bulk density | 600 | kg/m³ | - |

| Rheological calculation properties | Value | Unit | Test Standard |
|---|---|---|---|
| **ISO Data** | | | |
| Density of melt | 896 | kg/m³ | - |
| Thermal Conductivity of Melt | 0.16 | W/(m K) | - |

# Terluran ECO® HI-10 BC50

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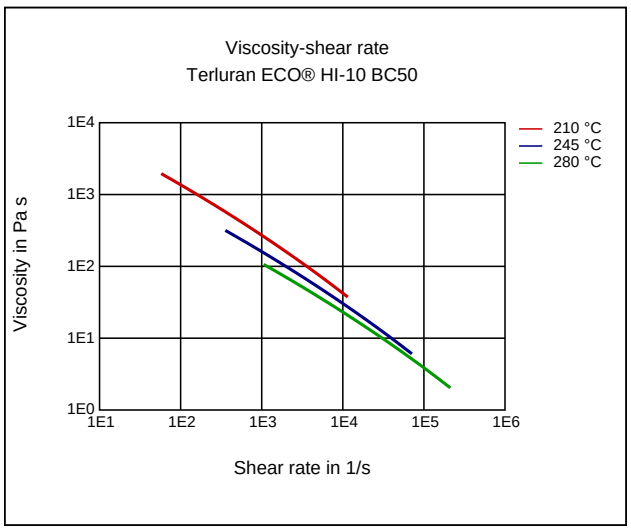
| | | | |
|---|---|---|---|
| Spec. heat capacity of melt | 2400 | J/(kg K) | - |
| Ejection temperature | 102 | °C | - |

| Processing Recommendation Injection Molding | Value | Unit | Test Standard |
|---|---|---|---|
| Pre-drying - Temperature | 80 | °C | - |
| Pre-drying - Time | 2 - 4 | h | - |
| Melt temperature | 220 - 260 | °C | - |
| Mold temperature | 30 - 80 | °C | - |
| Injection speed | 200 | mm/s | - |

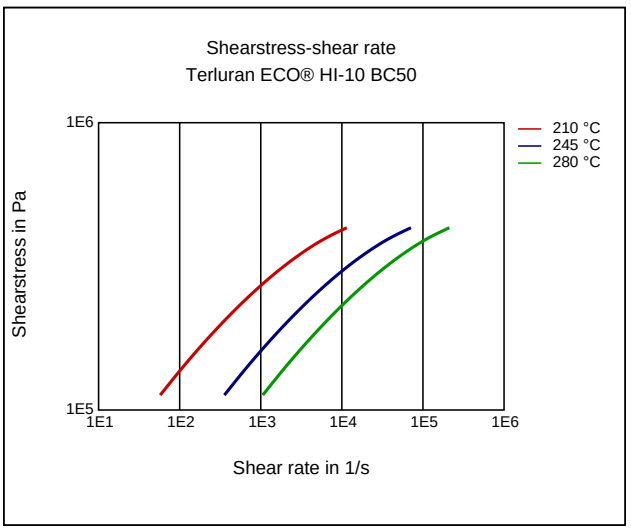
| Processing Recommendation Extrusion | Value | Unit | Test Standard |
|---|---|---|---|
| Type of extrusion | profile | - | - |
| Pre-drying - Temperature | 80 | °C | - |
| Pre-drying - Time | 2 - 4 | h | - |
| Melt temperature | 230 | °C | - |
| Type of extrusion | sheet | - | - |
| Pre-drying - Temperature | 80 | °C | - |
| Pre-drying - Time | 2 - 4 | h | - |
| Melt temperature | 210 - 240 | °C | - |

## Diagrams

### Viscosity-shear rate




### Shearstress-shear rate



# Terluran ECO® HI-10 BC50

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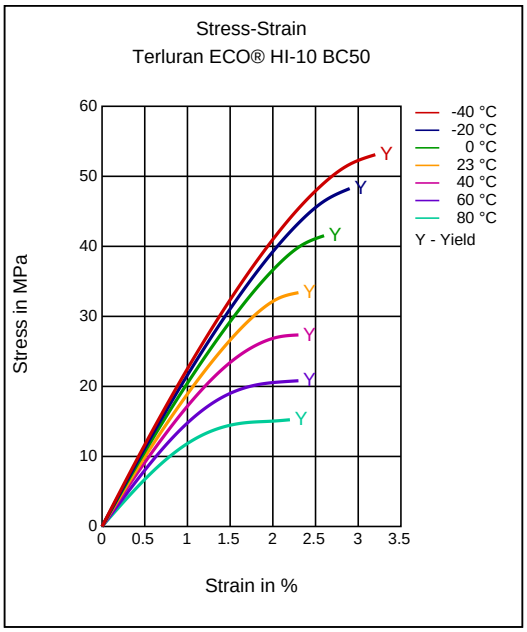
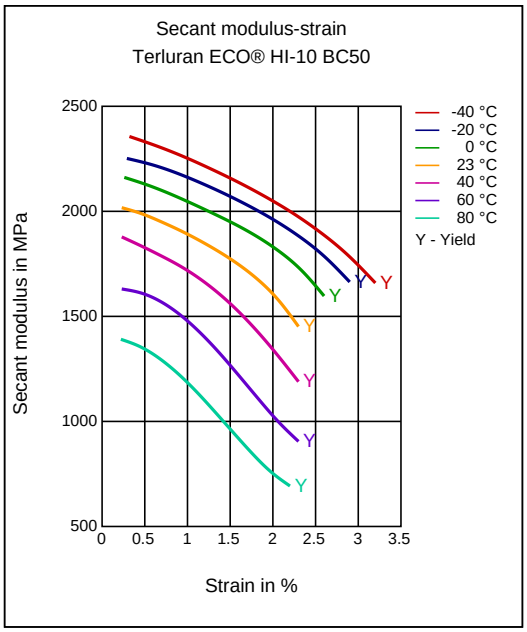
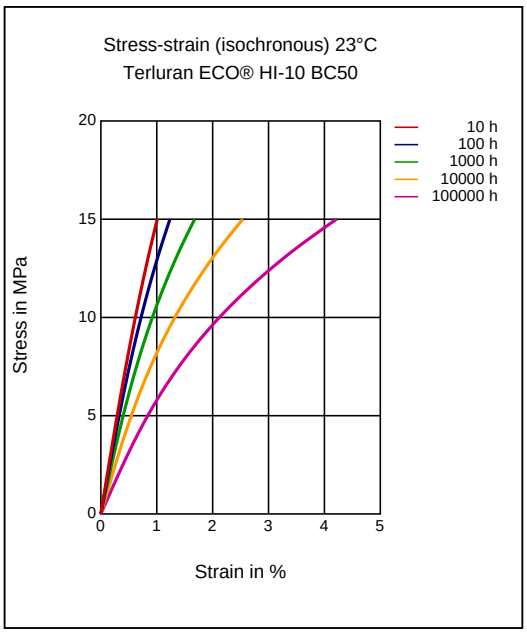
## Stress-strain



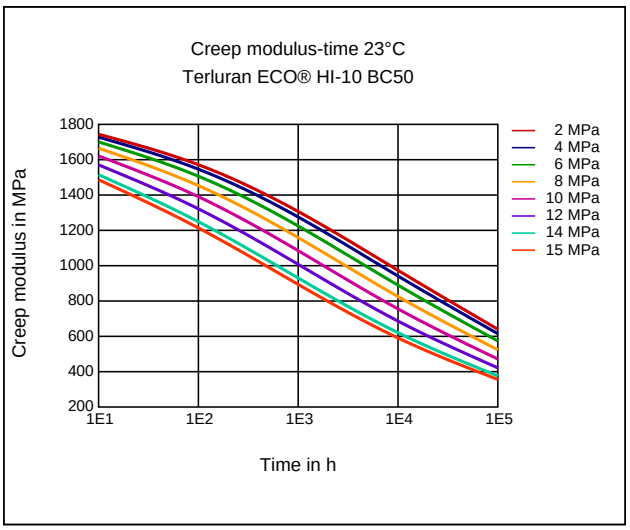

## Secant modulus-strain




## Stress-strain (isochronous) 23 °C




## Creep modulus-time 23 °C



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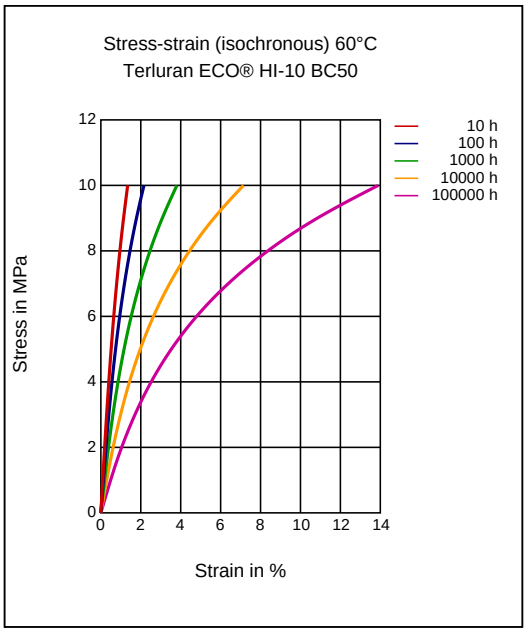
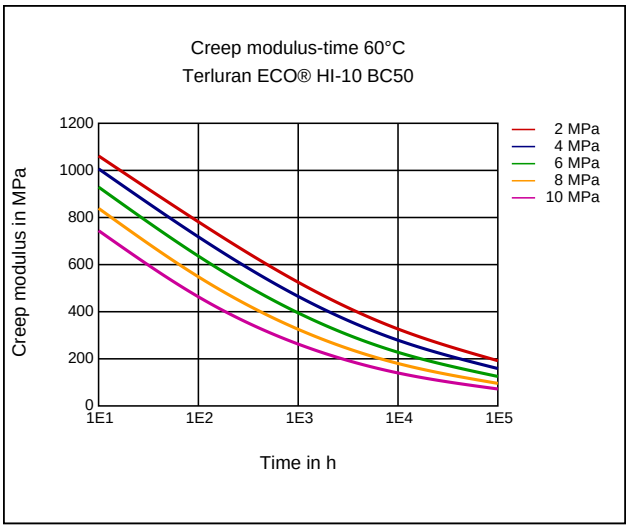
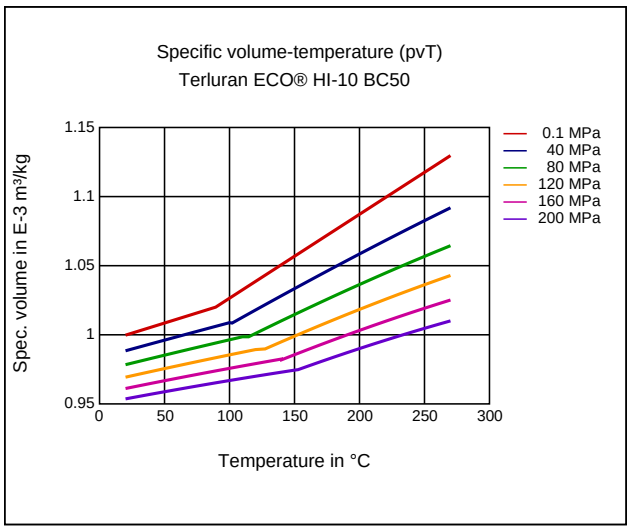
## Stress-strain (isochronous) 60°C



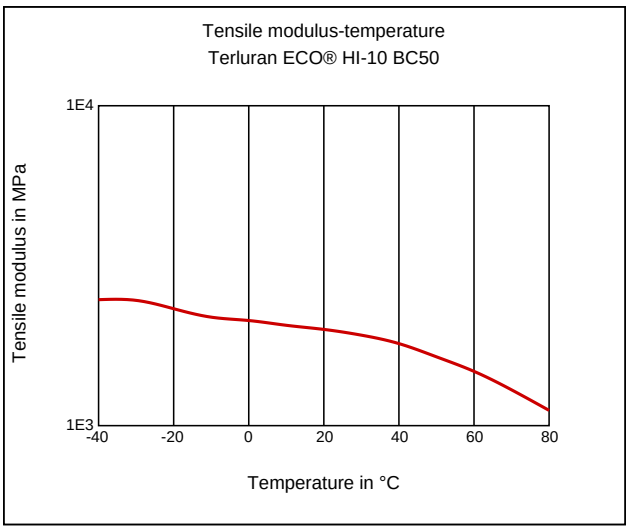

## Creep modulus-time 60°C




## Specific volume-temperature (pvT)




## Tensile Modulus-Temperature




## Characteristics

### Processing

Injection Molding, Profile Extrusion, Sheet Extrusion, Other Extrusion

### Delivery form

Pellets

### Special Characteristics

Impact modified, Heat aging stabilized

### Certifications

Contains renewable resources, ISCC Plus

## Injection Molding

PREPROCESSING

Pre-drying, Temperature: 80 °C

Pre-drying, Time: 2 - 4h

PROCESSING

Melt temperature, range: 220 - 260 °C

Mold temperature, range: 30 - 80 °C

## Other Extrusion

PREPROCESSING
Pre-drying, Temperature: 80 °C
Pre-drying, Time: 2 - 4h
PROCESSING
Pipes, Melt temperature: 200 - 230 °C

## Profile extrusion

PREPROCESSING
Pre-drying, Temperature: 80 °C
Pre-drying, Time: 2 - 4h
PROCESSING
Profiles, Melt temperature: 230 °C

## Sheet Extrusion

PREPROCESSING
Pre-drying, Temperature: 80 °C
Pre-drying, Time: 2 - 4h
PROCESSING
Plates, Melt temperature: 210 - 240 °C

## 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)
- ✔ 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

- ✔ Methanol (23 °C)
- ✔ Ethanol (23 °C)

### Hydrocarbons

- ✔ iso-Octane (23 °C)

### Standard Fuels

- ✔ Diesel fuel (pref. ISO 1817 Liquid F) (23 °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

- ✔ Hydrogen peroxide (23°C)
- ✔ 1% nonylphenoxy-polyethyleneoxy ethanol in water (23°C)
- ✔ Water (23°C)