

# Terluran HI-10

Acrylonitrile Butadiene Styrene (ABS)

## TECHNICAL DATASHEET

### DESCRIPTION

Terluran® HI-10 is a medium flow, injection molding grade with very high resistance to impact with excellent heat distortion and suitable for injection molding and extrusion.

### FEATURES

- High toughness
- Very high impact
- Medium flow
- Great mechanical strength and rigidity
- High impact at sub-zero temperatures

### APPLICATIONS

- Injection molding
- Compounding
- Appliance housings
- Lawn & garden components requiring superior toughness

| Property, Test Condition                             | Standard    | Unit                    | Values |
|--|-------------|-------------------------|--------|
| <b>Rheological Properties</b>                        |             |                         |        |
| Melt Volume Rate 220 °C/10 kg                        | ISO 1133    | cm <sup>3</sup> /10 min | 5.5    |
| <b>Mechanical Properties</b>                         |             |                         |        |
| Izod Notched Impact Strength, 23 °C                  | ISO 180/A   | kJ/m <sup>2</sup>       | 36     |
| Izod Notched Impact Strength, -30 °C                 | ISO 180/A   | kJ/m <sup>2</sup>       | 14     |
| Charpy Notched Impact Strength, 23° C                | ISO 179/1eA | kJ/m <sup>2</sup>       | 35     |
| Charpy Notched Impact Strength, -30 °C               | ISO 179/1eA | kJ/m <sup>2</sup>       | 13     |
| Charpy Unnotched, -30 °C                             | ISO 179/1eU | kJ/m <sup>2</sup>       | 140    |
| Tensile Stress at Yield, 23 °C                       | ISO 527     | MPa                     | 38     |
| Tensile Strain at Yield, 23 °C                       | ISO 527     | %                       | 2.8    |
| Tensile Modulus                                      | ISO 527     | MPa                     | 1900   |
| Nominal Strain at Break, 23 °C                       | ISO 527     | %                       | 9      |
| Flexural Strength, 23 °C                             | ISO 178     | MPa                     | 56     |
| Hardness, Ball Indentation                           | ISO 2039-1  | MPa                     | 74     |
| <b>Thermal Properties</b>                            |             |                         |        |
| Vicat Softening Temperature VST/B/50 (50N, 50 °C/h)  | ISO 306     | °C                      | 90     |
| Vicat Softening Temperature, VST/A/50 (10N, 50 °C/h) | ISO 306     | °C                      | 103    |

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| Property, Test Condition                                      | Standard      | Unit                 | Values            |
|---|---------------|----------------------|-------------------|
| Heat Deflection Temperature A; (annealed 4 h/80 °C; 1.8 MPa)  | ISO 75        | °C                   | 93                |
| Heat Deflection Temperature B; (annealed 4 h/80 °C; 0.45 MPa) | ISO 75        | °C                   | 97                |
| Coefficient of Linear Thermal Expansion                       | ISO 11359     | 10 <sup>-6</sup> /°C | 80 - 110          |
| Thermal Conductivity  | ISO 22007-4   | W/(m K)              | 0.17              |
| <b>Electrical Properties</b>                                  |               |                      |                   |
| Dissipation Factor (100 Hz)                                   | IEC 62631-2-1 | 10 <sup>-4</sup>     | 54                |
| Dissipation Factor (1 MHz)                                    | IEC 62631-2-1 | 10 <sup>-4</sup>     | 82                |
| Relative Permittivity (100 Hz)                                | IEC 62631-2-1 | -                    | 2.9               |
| Relative Permittivity (1 MHz)                                 | IEC 62631-2-1 | -                    | 2.8               |
| Volume Resistivity  | IEC 62631-3-1 | Ohm*m                | >10 <sup>13</sup> |
| Surface Resistivity   | IEC 62631-3-1 | Ohm                  | >10 <sup>13</sup> |
| <b>Optical Properties</b>                                     |               |                      |                   |
| Yellowness Index  | DIN 6167      | -                    | 15                |
| <b>Other Properties</b>                                       |               |                      |                   |
| Density   | ISO 1183      | kg/m <sup>3</sup>    | 1030              |
| Water Absorption, Saturated at 23 °C                          | ISO 62        | %                    | 1.03              |
| Moisture Absorption, Equilibrium 23 °C/50% RH                 | ISO 62        | %                    | 0.21              |
| <b>Processing</b>   |               |                      |                   |
| Linear Mold Shrinkage   | ISO 294-4     | %                    | 0.4 - 0.7         |
| Melt Temperature Range  | ISO 294       | °C                   | 220 - 260         |
| Mold Temperature Range  | ISO 294       | °C                   | 30 - 80           |
| Injection Velocity  | ISO 294       | mm/s                 | 200               |
| Drying Temperature  | -             | °C                   | 80                |
| Drying Time   | -             | h                    | 2 - 4             |

Typical values for uncolored products

Please note that all processing data stated are only indicative and may vary depending on the individual processing complexities.  
Please consult our local sales or technical representatives for details.

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### SUPPLY FORM

Terluran® is delivered as spherical pellets. The bulk density of the pellets is from 0.55 to 0.65 g/cm<sup>3</sup>. Standard Packaging unit: 25 kg PE-bag on palette, shrunk or wrapped with PE film or delivery in silo trucks. PE bags should not be stored outside. In dry areas with normal temperature control, Terluran pellets can be stored for relatively long periods of time without any change in mechanical properties. Under poor storage conditions, Terluran absorbs moisture, but this can be removed by drying.

### PRODUCT SAFETY

No adverse effects on the health of processing personnel have been observed if the products are correctly processed and the production areas are suitably ventilated. For styrene, acrylonitrile and 1,3-butadiene the maximum allowable workplace concentrations must be observed according to the pertaining national regulations. In Germany, the following limit values are valid (Oct. 2002): styrene, MAK-value: 20 ml/m<sup>3</sup> = 86 mg/m<sup>3</sup>; acrylonitrile, TRK-value: 3 ml/m<sup>3</sup> = 7 mg/m<sup>3</sup> and 1,3-butadiene, TRK-value: 5 ml/m<sup>3</sup> = 11 mg/m<sup>3</sup>. According to EU directive 67/548/EWG, Annex I and TRGS 905 (Oct. 2002), acrylonitrile and 1,3-butadiene are classified as carcinogenic, category 2 ('substances which should be regarded as if they are carcinogenic to man') and 1 (substances known to be carcinogenic to man), respectively. Experience has shown that during appropriate processing of Terluran with suitable ventilation the values obtained are well below the limits mentioned above. TRGS 402 (Germany) can be used for determining and assessing the concentrations of hazardous substances in the air within working areas. Inhalation of gaseous degradation products, such as those which may arise on severe overheating of the material or during pumped evacuation, must be avoided. Further information can be found in our Terluran safety data sheets.

### DISCLAIMER

The above mentioned data are accurate to the best of our knowledge. They are based upon reputable labs and industry standard testing methods. These are only typical values and actual product specification may deviate at industrial range. Therefore, no data in this technical data sheet shall constitute a warranty or representation regarding product features, fitness of the product for a specific purpose or application or its processability. INEOS Styrolution disclaims all liability in connection therewith. The customer himself is required to verify whether or not the product is suitable for the further processing or application intended and whether or not the product complies with the relevant statutory requirements. Unless explicitly and individually otherwise agreed in writing, INEOS Styrolution's sole and exclusive liability with respect to its products is set forth in INEOS Styrolution's General Terms and Conditions for Sale.