

## Product Information

12/2006

# Terluran® HI-10

## ABS

**BASF**  
The Chemical Company

### Product description

High impact grade, suitable for injection moulding and extrusion.

### Physical form and storage

Terluran® is delivered in the form of cylindrical or 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. 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, alpha-methylstyrene, 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>; alpha-methylstyrene, MAK-value: 100 ml/m<sup>3</sup> = 480 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. These can be downloaded from the Plastics Portal, [www.plasticsportal.net](http://www.plasticsportal.net).

### Note

The data contained in this publication are based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed. In order to check the availability of products please contact us or our sales agency.

Used by OPTimus filament - The optimum of filament



French product

Typical values at 23°C <sup>1)</sup>	Test method <sup>2)</sup>	Unit	Values <sup>3)</sup>
<b>Properties</b>			
Polymer abbreviation	-	-	<b>ABS</b>
Density	ISO 1183	kg/m <sup>3</sup>	<b>1030</b>
Water absorption, equilibrium in water at 23°C	similar to ISO 62	%	<b>1.03</b>
Moisture absorption, equilibrium 23°C/50% r.h.	similar to ISO 62	%	<b>0.21</b>
<b>Processing</b>			
Processing: Injection moulding (M), Extrusion (E), Blow moulding (B)	-	-	<b>M.E</b>
Melt volume-flow rate MVR	ISO 1133	cm <sup>3</sup> /10min	<b>5.5</b>
Temperature	ISO 1133	°C	<b>220</b>
Load	ISO 1133	kg	<b>10</b>
Pre-drying: Temperature	-	°C	<b>80</b>
Pre-drying: Time	-	h	<b>2 - 4</b>
Melt temperature, injection moulding	-	°C	<b>230 - 260</b>
Mould temperature, injection moulding	-	°C	<b>30 - 60</b>
Moulding shrinkage, free, longitudinal	-	%	<b>0.4 - 0.7</b>
Melt temperature	-	°C	<b>200 - 230</b>
Extrusion, Plates, Melt temperature	-	°C	<b>210 - 240</b>
<b>Flammability</b>			
UL94 rating at 1.6 mm thickness	UL-94	class	<b>HB</b>
Automotive materials (thickness d >= 1mm)	-	-	<b>+</b>
<b>Mechanical Properties</b>			
Tensile modulus	ISO 527-1/-2	MPa	<b>1900</b>
Yield stress, 50 mm/min	ISO 527-1/-2	MPa	<b>38</b>
Yield strain, 50 mm/min	ISO 527-1/-2	%	<b>2.8</b>
Nominal strain at break, 50 mm/min	ISO 527-1/-2	%	<b>9</b>
Flexural strength	ISO 178	MPa	<b>56</b>
Charpy impact strength (23°C)	ISO 179/1eU	kJ/m <sup>2</sup>	<b>N</b>
Charpy impact strength (-30°C)	ISO 179/1eU	kJ/m <sup>2</sup>	<b>140</b>
Izod notched impact strength (23°C)	ISO 180/A	kJ/m <sup>2</sup>	<b>36</b>
Izod notched impact strength (-30°C)	ISO 180/A	kJ/m <sup>2</sup>	<b>14</b>
Charpy notched impact strength (23°C)	ISO 179/1eA	kJ/m <sup>2</sup>	<b>35</b>
Charpy notched impact strength (-30°C)	ISO 179/1eA	kJ/m <sup>2</sup>	<b>13</b>
Izod notched impact strength, method A (23°C)	ASTM D 256	J/m	<b>410</b>
Ball indentation hardness	ISO 2039-1	MPa	<b>74</b>
Force	ISO 2039-1	N	<b>358</b>
Duration	ISO 2039-1	s	<b>30</b>
<b>Thermal properties</b>			
HDT A (1.80 MPa), measured using dried specimens	ISO 75-1/-2	°C	<b>96</b>
HDT B (0.45 MPa), measured using dried specimens	ISO 75-1/-2	°C	<b>101</b>
Vicat softening temperature VST/A/50	ISO 306	°C	<b>103</b>
Vicat softening temperature VST/B/50	ISO 306	°C	<b>90</b>
Max. service temperature (short cycle operation)	-	°C	<b>80</b>
Coefficient of linear thermal expansion, longitudinal (23-80)°C	ISO 11359-1/-2	E-4/°C	<b>0.8 - 1.1</b>
Thermal conductivity	DIN 52612-1	W/(m K)	<b>0.17</b>
<b>Electrical properties</b>			
Relative permittivity (100Hz)	IEC 60250	-	<b>2.9</b>
Relative permittivity (1 MHz)	IEC 60250	-	<b>2.8</b>
Dissipation factor (100 Hz)	IEC 60250	E-4	<b>54</b>
Dissipation factor (1 MHz)	IEC 60250	E-4	<b>82</b>
Volume resistivity	IEC 60093	Ohm*m	<b>1E13</b>
Electric strength K20/P50, d = 0.6 - 0.8 mm	IEC 60243-1	kV/mm	<b>40</b>
Comparative tracking index, CTI, test liquid A	IEC 60112	-	<b>600</b>

## Footnotes

1) If the product definition doesn't state otherwise.

2) Specimens according to CAMPUS.

3) The asterisk symbol "\*" signifies inapplicable properties.