

# Product Information Terlux®

## 2802 TR

11/2010

### MABS



#### Product description

Standard-injection moulding grade for transparent parts.

#### Physical form and storage

Terlux® is supplied as lenticular and as cylindrical pellets. The bulk density is from about 0.55-0.65 g/cm<sup>3</sup>. Standard pack: 25 kg PE sack, palletized and film-secured. Subject to agreement, other means of packing are possible, e.g. 1000 kg bulk containers (octagonal IBCs, or intermediate bulk containers, made from corrugated board with sack insert) or shipping by road tanker can be arranged. Terlux® pellets can be stored for prolonged periods in dry areas subject to normal temperature control without any changes in mechanical properties. However, with sensitive colors storage over some years can cause some color change. In poor storage conditions, Terlux® absorbs moisture, which can be removed again by drying. Packs stored in cold areas should be brought to ambient temperature before opening to prevent condensation on the pellets.

#### Product safety

Given appropriate processing of the products and suitable ventilation measures in production areas, no adverse effects on the health of process operator have been found. Workplace limits for styrene, methyl methacrylate, methyl acrylate, acrylonitrile and 1,3-butadiene, as given in the national listings applicable, must be adhered to. The values currently applicable in Germany under TRGS 900 (issue of September, 1999) for maximum workplace concentrations are as follows. Styrene: 20 ml/m<sup>3</sup> = 85 mg/m<sup>3</sup>; methyl methacrylate: 50 ml/m<sup>3</sup> = 210 mg/m<sup>3</sup>; methyl acrylate: 5 ml/m<sup>3</sup> = 18 mg/m<sup>3</sup>; acrylonitrile: 3 ml/m<sup>3</sup> = 7 mg/m<sup>3</sup>; 1,3-butadiene: 5 ml/m<sup>3</sup> = 11 mg/m<sup>3</sup>. Appendix I of Directive 67/548/EWG (issue of 1999) classifies acrylonitrile and 1,3-butadiene in carcinogenic category II (substances which should be regarded as carcinogenic in humans). Experience has shown that during appropriate processing of Terlux® 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 Terlux® safety data sheets.

#### 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.

## Product Information

Typical values for uncoloured product at 23 °C <sup>1)</sup>	Test method <sup>2)</sup>	Unit	Values <sup>3)</sup>
<b>Properties</b>			
Polymer abbreviation	-	-	<b>MABS</b>
Density	ISO 1183	kg/m <sup>3</sup>	<b>1080</b>
Water absorption, equilibrium in water at 23°C	similar to ISO 62	%	<b>0.7</b>
Moisture absorption, equilibrium 23°C/50% r.h.	similar to ISO 62	%	<b>0.35</b>
Refractive index, crystal clear and transparent	ISO 489	-	<b>1.540</b>
<b>Processing</b>			
Melt volume-flow rate MVR 220 °C/10 kg	ISO 1133	cm <sup>3</sup> /10min	<b>2</b>
Melt volume-flow rate MVR 220 °C/21.6 kg	ISO 1133	cm <sup>3</sup> /10min	<b>17</b>
Melt temperature, injection moulding	-	°C	<b>230 - 260</b>
Mould temperature, injection moulding	-	°C	<b>50 - 80</b>
Moulding shrinkage, free, longitudinal	-	%	<b>0.4 - 0.7</b>
<b>Flammability</b>			
UL 94 at 1.6 mm thickness	IEC 60695-11-10	class	<b>HB</b>
Automotive materials (thickness d >= 1mm)	FMVSS 302	-	<b>+</b>
<b>Mechanical properties</b>			
Tensile modulus	ISO 527-1/-2	MPa	<b>2000</b>
Yield stress, 50 mm/min	ISO 527-1/-2	MPa	<b>48</b>
Yield strain, 50 mm/min	ISO 527-1/-2	%	<b>4</b>
Nominal strain at break, 50 mm/min	ISO 527-1/-2	%	<b>12</b>
Charpy unnotched impact strength (23°C)	ISO 179/1eU	kJ/m <sup>2</sup>	<b>120</b>
Charpy unnotched impact strength (-30°C)	ISO 179/1eU	kJ/m <sup>2</sup>	<b>80</b>
Charpy notched impact strength (23°C)	ISO 179/1eA	kJ/m <sup>2</sup>	<b>5</b>
Charpy notched impact strength (-30°C)	ISO 179/1eA	kJ/m <sup>2</sup>	<b>2</b>
Izod notched impact strength (23°C)	ASTM D 256	J/m	<b>100</b>
Ball indentation hardness at 358 N/30 s	ISO 2039-1	MPa	<b>70</b>
<b>Thermal properties</b>			
HDT A (1.80 MPa), measured using dried specimens	ISO 75-1/-2	°C	<b>90</b>
HDT B (0.45 MPa), measured using dried specimens	ISO 75-1/-2	°C	<b>94</b>
Vicat-Softening-Temperature VST/A/50	ISO 306	°C	<b>105</b>
Vicat-Softening-Temperature VST/B/50	ISO 306	°C	<b>93</b>
Max. service temperature (short cycle operation)	-	°C	<b>75</b>
Coefficient of linear thermal expansion, longitudinal (23-80)°C	ISO 11359-1/-2	E-6/K	<b>80 - 110</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>160</b>
Dissipation factor (1 MHz)	IEC 60250	E-4	<b>140</b>
Volume resistivity	IEC 60093	Ohm*m	<b>1E13</b>
Surface resistivity	IEC 60093	Ohm	<b>1E15</b>
Electric strength K20/P50, d = 1 mm	IEC 60243-1	kV/mm	<b>34</b>

### Footnotes

1) If product name or properties don't state otherwise.

2) Specimens according to CAMPUS.

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

Styrolution GmbH

67056 Ludwigshafen, Germany