

# Product Information Ultrason® E

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PESU

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## Product description

Polyethersulfone flakes, e.g. for membrane applications, coatings and membranes. The product is soluble in N-Methylpyrrolidone (NMP) and N,N-Dimethylacetamide. The product is not developed for injection moulding. Abbreviated designation according to ISO 1043-1: PESU

## Physical form and storage

Ultrason® flakes are supplied in bags and octabins. The bulk density ranges between 200 and 300 g/l. Provided the packaging remains undamaged, Ultrason® can be stored indefinitely. Ultrason® flakes absorb moisture very rapidly. Therefore, the flakes need to be dried at least 4h at 130 °C to 150 °C in a vacuum or dry air drier prior to processing.

## Product safety

From our experience and information, proper treatment and reasonable use of the product will not have any health hazardous effects. In view of the high temperatures involved in processing Ultrason®, great care must be exercised even more than for other thermoplastics- in handling the machinery, molds, moldings and residual melts. If there are concerns or doubts on the thermal capacity and limits, the machinery manufacturer should be consulted. If the normal precautions are taken and the upper temperature limit, i.e. 390°C, is not exceeded, no health hazardous vapors are formed while Ultrason® is being processed. In common with all other thermoplastics, Ultrason® decomposes on exposure to excessive heat. The figures laid down for the maximum allowable dust concentrations (e.g. MAK value in Germany) must be met in further processing. The work place must be well ventilated, preferably by means of an extraction system installed above the barrel unit. Irrespective of this, all precautions relating to accident prevention must strictly be taken.

## 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	Unit	Values <sup>2)</sup>
<b>Properties</b>			
Polymer abbreviation	-	-	<b>PESU</b>
Viscosity number (in 0,01 g/ml Phenol/1,2, ortho-Dichlorbenzol, 1:1)	ISO 307, 1157, 1628	cm <sup>3</sup> /g	<b>56</b>
Glass transition temperature, DSC (10°C/min)	ISO 11357-1/-2	°C	<b>225</b>
Moisture absorption, equilibrium 23°C/50% r.h.	similar to ISO 62	%	<b>1.00</b>
Apparent density	ISO 60	g/cm <sup>3</sup>	<b>0.25</b>
<b>Mechanical properties</b>			
Tensile modulus <sup>3)</sup>	ISO 527-1/-2	MPa	<b>2650</b>
Yield stress, 50 mm/min <sup>3)</sup>	ISO 527-1/-2	MPa	<b>85</b>
Yield strain, 50 mm/min <sup>3)</sup>	ISO 527-1/-2	%	<b>6.9</b>
Charpy unnotched impact strength (23°C) <sup>3)</sup>	ISO 179/1eU	kJ/m <sup>2</sup>	<b>N</b>
Charpy notched impact strength (23°C) <sup>3)</sup>	ISO 179/1eA	kJ/m <sup>2</sup>	<b>6.5</b>
<b>Thermal properties</b>			
HDT A (1.80 MPa)	ISO 75-1/-2	°C	<b>205</b>
<b>Molecular weights</b>			
Molecular weight Mw (GPC in DMAc, PMMA standard)	-	g/mol	<b>48000</b>
Mw/Mn (GPC in DMAc, PMMA standard)	-	-	<b>2.7</b>

### Footnotes

- 1) If product name or properties don't state otherwise.
- 2) The asterisk symbol "\*" signifies inapplicable properties.
- 3) measured at test specimen, prepared from granules

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