# Preliminary Datasheet

### **Ultramid®**

Expand D4H 3510 bk23381



09/2024 **E-PA** 

#### **Product description**

Expandable, heat-stabilized polyamideparticlefoam consisting of predominantly closed-cell foam particles. The particles, which are delivered in bulk, are processed into molded parts of all kinds by steam chest foaming machines. The material has excellent heat resistance, high rigidity combined with high toughness. It also has good chemical resistance to oils, fuels and lubricants.

Possible applications are in the area of body construction, crash-absorbing parts or thermally stressed technical components.

#### **Physical form and Storage**

The product is delivered ready for processing as expanded particles with a density of 285 g/l. Standard packaging is the 400 kg bulk container (octagonal IBC = Intermediate Bulk Container made of corrugated board with an adjustable bag). Upon agreement, additional packaging materials and shipment in road or rail silo wagons are possible. All containers are tightly sealed and should only be opened immediately before processing.

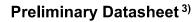
#### **Product safety**

In case processing is done under conditions as recommended (cf. processing data sheet) melts are thermally stable and do not generate hazards by molecular degradation or the evolution of gases and vapors. Like all thermoplastic polymers the product decomposes on exposure to excessive thermal load, e.g. when it is overheated or as a result of cleaning by burning off. Further information is available from the safety data sheet.

#### 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.

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Typical values for uncoloured product at 23 °C <sup>1)</sup>	Test method	Unit	Values <sup>2)</sup>
Properties			
Polymer abbreviation Density of moulded parts Moisture absorption, equilibrium 23°C/50% r.h. Colour; black (bk), uncoloured (un), coloured (co), transparent (tr)	ISO 1183 similar to ISO 62	kg/m³ %	E-PA 400 - 450 2.3 - 2.5 bk
Bulk density	ISO 60	g/cm³	0.35
Processing			
Melting temperature, DSC Steam chest molding Steam pressure Pressure loading pressure (time, optional) Shrinkage (longitudinal) (dry/cond.)	ISO 11357-1/-3 - - - - BASF method	°C - bar bar (h) %	216 + 3 - 4 2 - 3 (5 - 25) 5 / 4.2
Flammability			
Automotive materials (thickness ≥ 1 mm) <sup>4)</sup>	ISO 3795, FMVSS 302	-	+
Mechanical properties dry / cond.			
Tensile modulus (rate 0.001) <sup>5)</sup> Stress at break (rate 0.001) <sup>5)</sup> Strain at break (rate 0.001) <sup>5)</sup> Work (rate 0.001) <sup>5)</sup> Compressive stress at 10 % deformation (rate 0.001) <sup>5)</sup> Compressive stress at 30 % deformation (rate 0.001) <sup>5)</sup> Flexural modulus <sup>6)</sup> Flexural strength <sup>6)</sup>	ISO 1798 ISO 1798 ISO 1798 ISO 1798 ISO 844 ISO 844 ISO 1209-1 ISO 1209-1	MPa MPa % J/cm³ MPa MPa MPa MPa	445 / 223 7 / 6 2.4 / 13.6 0.100 / 0.600 10 / 6 15 / 9 - / 240 - / 9
Thermal properties			
Thermal conductivity, solid material (10°C) 7)	D <b>I</b> N 52612-1	W/(m K)	0.09 / 0.09
Electrical properties			dry / cond.
Comparative tracking index, CTI, test liquid A Electric strength K20/K20, (150*150*5 mm³)	IEC 60112 IEC 60243-1	- kV/mm	600 7 / 6
Other Properties			
Halogen content (Cl, Br, I) based on chloride, coulometry	similar to DIN 51408-2	mg/kg	< 50
Physical form			
Pellet size	-	mm	1

- Footnotes

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

  2) The asterisk symbol \*\* signifies inapplicable properties.

  3) The typical values of preliminary datasheets are not statistically firm.

  4) += passed

  5) measured on test specimens with a density of 400 g/l without pressure loading
- 6) measured on test specimens with a density of 400 g/l with pressure loading 7) measured on test specimens with a density of 240 g/l without pressure loading

#### BASF SE