Preliminary Datasheet

Ultramid®

Expand D4H 2925 bk23381

09/2024

E-PA

We create chemistry

Product description

Expandable 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.

BASF SE
67056 Ludwigshafen, Germany

Ultramid® Expand D4H 2925 bk23381

Preliminary Datasheet [3]

BASF
We create chemistry

Typical values for uncoloured product at 23 °C[1]	Test method	Unit	Values[2]
Properties			
Polymer abbreviation	-	-	**E-PA**
Density of moulded parts	ISO 1183	kg/m³	**340**
Moisture absorption, equilibrium 23°C/50% r.h.	similar to ISO 62	%	**2.3 - 2.5**
Colour; black (bk), uncoloured (un), coloured (co), transparent (tr)	-		**bk**
Bulk density	ISO 60	g/cm³	**0.29**
Flammability			
Burning Behav. at thickness d ≥ 10 mm thickness	UL-94, IEC 60695	class	**HB**
Automotive materials (thickness ≥ 1 mm) [4]	ISO 3795, FMVSS 302	-	**+**
Mechanical properties			**dry / cond.**
Tensile modulus (23°C/rate 0.001) [5]	ISO 1798	MPa	**325 / 131**
Stress at break (23°C/rate 0.001) [5]	ISO 1798	MPa	**5.04 / 4.18**
Strain at break (23°C/rate 0.001) [5]	ISO 1798	%	**2.47 / 9.52**
Tensile modulus (80°C/rate 0.001) [5]	ISO 1798	MPa	**80.8 / -**
Stress at break (80°C/rate 0.001) [5]	ISO 1798	MPa	**3.17 / -**
Strain at break (80°C/rate 0.001) [5]	ISO 1798	%	**10.4 / -**
Tensile modulus (-30°C/rate 0.001) [5]	ISO 1798	MPa	**375 / -**
Stress at break (-30°C/rate 0.001) [5]	ISO 1798	MPa	**5.18 / -**
Strain at break (-30°C/rate 0.001) [5]	ISO 1798	%	**1.49 / -**
Work (23°C/rate 0.001) [5]	ISO 1798	J/cm³	**0.080 / 0.280**
Compressive stress at 10 % deformation (23°C/rate 0.001) [5]	ISO 844	MPa	**8.81 / 3.25**
Work at 10 % deformation (23°C/rate 0.001) [5]	ISO 844	J/cm³	**0.630 / 0.220**
Compressive stress at 10 % deformation (80°C/rate 0.001) [5]	ISO 844	MPa	**3.88 / -**
Work at 10 % deformation (80°C/rate 0.001) [5]	ISO 844	J/cm³	**0.270 / -**
Compressive stress at 10 % deformation (-30°C/rate 0.001) [5]	ISO 844	MPa	**12.2 / -**
Work at 10 % deformation (-30°C/rate 0.001) [5]	ISO 844	J/cm³	**0.850 / -**
Compressive stress at 30 % deformation (23°C/rate 0.001) [5]	ISO 844	MPa	**17.5 / 5.18**
Work at 30 % deformation (23°C/rate 0.001) [5]	ISO 844	J/cm³	**3.830 / 1.070**
Compressive stress at 30 % deformation (80°C/rate 0.001) [5]	ISO 844	MPa	**5.89 / -**
Work at 30 % deformation (80°C/rate 0.001) [5]	ISO 844	J/cm³	**1.260 / -**
Compressive stress at 30 % deformation (-30°C/rate 0.001) [5]	ISO 844	MPa	**17.5 / -**
Work at 30 % deformation (-30°C/rate 0.001) [5]	ISO 844	J/cm³	**3.830 / -**
Flexural modulus [5]	ISO 1209-1	MPa	**- / 140**
Flexural strength [5]	ISO 1209-1	MPa	**- / 8.4**
Thermal properties			
Deflection temp. under load 1.8 MPa (HDT A) [5]	ISO 75-1/-2	°C	**30**
Deflection temp. under load 0.45 MPa (HDT B) [5]	ISO 75-1/-2	°C	**57**
Coefficient of linear thermal expansion, longitudinal (23-55)°C [5]	ISO 11359-1/-2	E-6/K	**78 - 117**
Coefficient of linear thermal expansion, transverse (23-55)°C [5]	ISO 11359-1/-2	E-6/K	**74 - 113**
Thermal conductivity (10°C) [5]	EN 12667	W/(m K)	**- / 0.07**
Electrical properties			**dry / cond.**
Volume resistivity [5]	IEC 62631-3-1	Ohm*m	**2E14 / 4E12**
Surface resistivity [5]	IEC 62631-3-2	Ohm	**2E14 / 2E13**
Processing			
Melting temperature, DSC	ISO 11357-1/-3	°C	**216**
Steam chest molding	-	-	**+**
Steam pressure	-	bar	**3 - 4**
Pressure loading pressure (time, optional)	-	bar (h)	**1.5 - 4 (4 - 24)**
Other Properties			
Halogen content (Cl, Br, I) based on chloride, coulometry	similar to DIN 51408-2	mg/kg	**< 50**

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 340g/l with pressure loading

BASF SE
67056 Ludwigshafen, Germany

Ultramid® Expand D4H 2925 bk23381

Preliminary Datasheet [3)]

Typical values for uncoloured product at 23 °C[1)]	Test method	Unit	Values[2)]
Physical form			
Pellet size	-	mm	**2.5**

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.

BASF SE
67056 Ludwigshafen, Germany