

## Product Information

06/2008

# Ultramid<sup>®</sup> B3WG6 CR bk23210 (PA6-GF30)



The Chemical Company

### Product description

Glass fiber reinforced and heat-ageing resistant injection moulding grade for crash-relevant applications.

### Physical form and storage

Ultramid is supplied dry and ready to use in moisture-proof packaging in the form of cylindrical or flat pellets. Its bulk density is about 0,7g/cm<sup>3</sup>. Standard packs are the special 25kg bag and the 1000kg bulk container (octagonal IBC= intermediate bulk container made from corrugated board with a liner bag). Subject to agreement other forms of packaging and shipment in tankers by road or rail are also possible. All containers are tightly sealed and should be opened only immediately prior to processing. To ensure that the perfectly dry material delivered cannot absorb moisture from the air the containers must be stored in dry rooms and always carefully sealed again after portions of material have been withdrawn. Ultramid can be kept indefinitely in the undamaged bags. Experience has shown that product supplied in IBCs can be stored for about 3 months without any adverse effects on processing properties due to moisture absorption. Containers stored in cold rooms should be allowed to equilibrate to normal temperature so that no condensation forms on the pellets

### Product safety

Ultramid melts are thermally stable at the usual temperature for A, B and C up to 310°C and 350°C for T and do not give rise to hazards due to molecular degradation or the evolution of gases and vapors. Like all thermoplastic polymers Ultramid decomposes on exposure to excessive thermal load, e.g. when it is overheated or as a result of cleaning by burning off. In such cases gaseous decomposition products are formed. Decomposition accelerates above 310°C (T >350°C) approximately, the initial products formed being mainly carbon monoxide and ammonia, and caprolactam too in the case of Ultramid B. At temperatures above about 350°C (T>400°C) small quantities of pungent smelling vapors of aldehydes, amines and other nitrogenous decomposition products are also formed. Further safety information see safety data sheet of the individual product

### Note

The information submitted in this publication is based on our current knowledge and experience. In view of the many factors that may affect processing and application, these data do not relieve processors of the responsibility of carrying out their own tests and experiments; neither do they imply any legally binding assurance of certain properties or of suitability for a specific purpose. It is the responsibility of those to whom we supply 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.

# Ultramid® B3WG6 CR bk23210

Typical values at 23°C <sup>1)</sup>	Test method	Unit	Condition	Values
<b>Properties</b>				
Abbreviated term	ISO 1043	-	-	PA6-GF30
Density	ISO 1183	g/cm <sup>3</sup>	-	1.36
Viscosity number (solution 0.005 g/ml sulfuric acid)	ISO 307	ml/g	-	145
Colour: natural (n), coloured (c), black (bk)	-	-	-	bk
Water absorption, equilibrium in water at 23°C	ISO 62	%	-	6.30 – 6.90
Moisture absorption, equilibrium 23°C/50% r.h.	ISO 62	%	-	1.90 – 2.30
<b>Processing</b>				
Melting temperature, DSC	ISO 3146	°C	-	220
Melt volume rate MVR 275/5	ISO 1133	cm <sup>3</sup> /10 min	-	30
Melt temperature, injection moulding/extrusion	-	°C	-	270 - 290
Mould temperature, injection moulding	-	°C	-	80 - 90
Moulding shrinkage, constrained <sup>6)</sup>	-	%	-	0.3
<b>Flammability</b>				
Automotive materials (thickness d ≥ 1mm)	FMVSS 302	-	-	+
<b>Mechanical properties</b>				
Tensile modulus	ISO 527-2	MPa	dry/cond.	9500 / 5600
Stress at break (v = 5 mm/min)	ISO 527-2	MPa	dry/cond.	170 / 100
Strain at break*	ISO 527-2	%	dry/cond.	3.4 / 7.5
Charpy unnotched impact strength <sup>3)</sup> +23°C	ISO 179/1eU	kJ/m <sup>2</sup>	dry/cond.	95 / 105
Charpy unnotched impact strength -30°C	ISO 179/1eU	kJ/m <sup>2</sup>	dry	75 / -
Charpy notched impact strength <sup>3)</sup> +23°C	ISO 179/1eA	kJ/m <sup>2</sup>	dry/cond.	12.5 / -
Charpy notched impact strength <sup>3)</sup> -30°C	ISO 179/1eA	kJ/m <sup>2</sup>	dry/cond.	8.5 / -
<b>Mechanical properties under dynamical loading <sup>7)</sup></b>				
Availability of high speed tensile test data (parallel / perpendicular)	BASF method			
at 23°C strain rate 0.1/s – 100/s			dry/cond.	available
at 80°C strain rate 0.1/s – 100/s			dry/cond.	available
at -35°C strain rate 0.1/s – 100/s			dry/cond.	available
<b>Thermal properties</b>				
Deflection temperature 1.8 MPa (HDT A)	ISO 75-2	°C	-	205
Max. service temperature (short cycle operation) <sup>2)</sup>	-	°C	-	200

Footnotes:

1) for uncoloured product, unless defined otherwise in the product name

2) Empirical values determined on articles repeatedly subjected to the temperature concerned for several hours at a time over a period of several years.  
The proviso is that the articles were properly designed and processed according to our recommendations.

3) N = no break.

6) Test box with central gating, dimensions of base (107-47-1,5) mm, processing conditions: T<sub>M PA6</sub> = 260 °C, T<sub>M PA66</sub> = 290 °C, mould surface temp. MST = 60 °C for unreinforced, MST = 80 °C for reinforced.

7) Description of the BASF method for high speed tensile testing can be obtained at [ultraplaste-infopoint@basf.com](mailto:ultraplaste-infopoint@basf.com)