

#### Product description

Ultramid® A 219E1 V30 Black (Ultramid® XA 1688 Black) is a polyamide 66, reinforced with 30% of glass fibre, organic heat stabilized, for injection moulding.

This grade offers a formula clean of additive that contain halogen and other substances ( ex: phosphorus) that can migrate and generate corrosion issues. Electrofriendly heat satbilized grade. Suitable for laser printing. < 100ppm halogen content guaranteed, based on internal elution analysis.

#### PROVISIONAL DATA SHEET

The results shown will be further updated as more industrial lots will be produced.

#### Injection Notes

The material is supplied in airtight bags, ready for use. In case that the virgin material has absorbed moisture, it must be dried with a dehumidified air drying equipment, dew point mini -20°C. Recommended time 2-4h

#### Injection Advice:

- For reinforced polyamides, BASF SE recommends the use of steel with a high content of carbon, and purified for polishing, to avoid or limit the abrasion. For example: X38CrMoV5-1 (EN Norm) - 1.2367 /1.2343 (DIN Norm) or X160CrMoV12 (EN Norm) - 1.2601 /1.2379 (DIN Norm). In the case of high requirements on surface quality a mould temperature of up to 120°C can be considered.
- The processing parameters like processing temperatures are a recommendation and can be adjusted in function of injection machine size, part geometry / design.

#### Disclaimer

The information contained in this document is given in good faith based on our current knowledge. It is only an indication and it is in no way binding. This information must on no account be used as a substitutive for necessary prior tests which alone can ensure that a product is suitable for a given use. ANY WARRANTY OF PRODUCT PERFORMANCE, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS EXPRESSLY EXCLUDED. Users are responsible for ensuring compliance with local legislation and for obtaining the necessary certifications and authorizations. Users are requested to check that they are in possession of the latest version of this document, and BASF SE is at their disposal to supply any additional information.

#### Safety Information

Detailed information regarding safety are available on the safety data sheet (MSDS). MSDS is sent with the first material order or available by contacting our customer services

#### Regulations Compliance

This product is not intended to be used for the following regulated market: food contact, drinking water, toys, cosmetics or medical devices.

This grade complies with RoHS Directive 2011/65/EU, 2015/863 and local regulations as amended.

Grades produced or imported in Europe comply with REACH directive 1907/2006/EC as amended.

#### Customer Services

Our customer services are not only concerned with manufacturing and supply of Engineering Plastics products. We are available to assist our customers in finding technical solutions that meet their requirements. Specific support is in particular offered on:

- Material selection
- Material testing
- Parts design advice, training for design engineers
- Part testing
- Design simulation
- Processing through different technologies
- Assembly and post-processing technology expertise
- Parts optimization through Computer Aided Design

## Preliminary Datasheet <sup>3)</sup>

Typical values for uncoloured product at 23 °C <sup>1)</sup>	Test method	Unit	Values <sup>2)</sup>
<b>General Properties</b>			
North America	-	-	+
Asia Pacific	-	-	+
South and Central America	-	-	+
Near East/Africa	-	-	+
Processing: Injection moulding (M), Extrusion (E), Blow moulding (B)	-	-	M
Colour: black (bk), uncoloured (un), coloured (co), transparent (tr)	-	-	bk
Pellets	-	-	+
<b>Physical</b>			
Molding shrinkage (parallel)	ISO 294-4	%	0.35
Molding shrinkage (normal)	ISO 294-4	%	1.10
Water absorption, 24 h in water, 23 °C	ISO 62	%	0.8
Density	ISO 1183	kg/m <sup>3</sup>	1360
<b>Mechanical properties</b>			
Tensile modulus	ISO 527-1/-2	MPa	10000
Stress at break	ISO 527-1/-2	MPa	190
Tensile Strength at Break (ASTM)	ASTM D 638	MPa	190
Strain at break	ISO 527-1/-2	%	3
Tensile elongation at break, 2 in/min (ASTM)	ASTM D 638	%	3.5
Flexural modulus	ISO 178	MPa	9000
Flexural modulus (ASTM)	ASTM D 790	MPa	9000
Flexural strength	ISO 178	MPa	275
Flexural strength (ASTM)	ASTM D 790	MPa	270
Charpy notched impact strength ISO 179/1eA (23°C)	ISO 179/1eA	kJ/m <sup>2</sup>	12
Charpy impact strength ISO 179-1eU (23°C)	ISO 179/1eU	kJ/m <sup>2</sup>	85
Izod notched impact strength ISO 180/A (23°C)	ISO 180/A	kJ/m <sup>2</sup>	12
Izod notched impact strength ASTM D 256 (23 °C)	ASTM D 256	J/m	110
Izod impact strength ISO 180/U (23°C), MPTS	ISO 180/U	kJ/m <sup>2</sup>	75
Izod impact strength (area) ASTM D 256 (23 °C)	ASTM D 256	MPa	95
HDT A (1.80 MPa), ASTM	ASTM D 648	°C	250
<b>Thermal properties</b>			
HDT B (0.45 MPa)	ISO 75-1/-2	°C	260
HDT A (1.80 MPa)	ISO 75-1/-2	°C	255
HDT A (1.82 MPa), ASTM	ASTM D 648	°C	250
Melting temperature, DSC (10°C/min)	ISO 11357-1/-3	°C	262
<b>Electrical properties</b>			
Surface resistivity	IEC 62631-3-2	Ohm	1E15
Volume resistivity	IEC 62631-3-1	Ohm*m	1E13
Electric strength (d = 2.0 mm)	IEC 60243-1	kV/mm	35
Relative permittivity (100Hz)	IEC 62631-2-1	-	3.7
Dissipation factor (100 Hz)	IEC 62631-2-1	E-4	0.02
Comparative tracking index, CTI, test liquid A	IEC 60112	-	600
<b>Flammability</b>			
Burning Behav. at 1.6 mm nom. thickn.	IEC 60695-11-10	class	HB
Burning Behav. at thickness 3.2 mm	IEC 60695-11-10	class	HB
Glow Wire Flammability Index (1.6 mm)	IEC 60695-2-12	°C	650
<b>Injection</b>			
Pre/Post-processing, Pre-drying, Temperature	-	°C	80
Pre/Post-processing, max. allowed water content	-	%	0.2
Injection molding cylinder temperature 1 (feed zone)	-	°C	270 - 280
Injection molding cylinder temperature 2 (compression)	-	°C	275 - 285
Injection molding cylinder temperature 3 (metering-zone, head room of screw)	-	°C	280 - 290
injection molding, Mold temperature, range	ISO 294	°C	70 - 100

### 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 S/A

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