

**Product description**

Ultramid® 2110R BRIGHT is an unreinforced polyamide 66, lubricated for injection moulding. This grade is used in all sectors of industry, offering an excellent long-term heat stability & productivity.

This grade is used for

- Connector, Pin of automobile, Power steering reservoir tank, Switch, Canister, Fuel filler tube

**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 unfilled polyamides, BASF SE recommends the use of high alloy steel with a low chromium content. For example: X38CrMoV5-1 (EN Norm) - 1.2367 /1.2343 (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 substitute 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

**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



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## Product Information

Typical values for uncoloured product at 23 °C <sup>1)</sup>	Test method	Unit	Values <sup>2)</sup>
<b>General Properties</b>			
Asia Pacific	-	-	+
Processing: Injection moulding (M), Extrusion (E), Blow moulding (B)	-	-	M
Colour: black (bk), uncoloured (un), coloured (co), transparent (tr)	-	-	un,bk
Pellets	-	-	+
<b>Physical</b>			
Density	ISO 1183	kg/m <sup>3</sup>	1140 / -
<b>Mechanical properties</b>			
Tensile stress at yield, 2 in/min (ASTM)	ASTM D 638	MPa	85 / -
Tensile elongation at break, 2 in/min (ASTM)	ASTM D 638	%	25 / -
Flexural modulus (ASTM)	ASTM D 790	MPa	3000 / -
Flexural strength (ASTM)	ASTM D 790	MPa	120 / -
Izod notched impact strength ASTM D 256 (23 °C)	ASTM D 256	J/m	60 / -
<b>Thermal properties</b>			
HDT A (1.80 MPa), ASTM	ASTM D 648	°C	75
Melting temperature, DSC (10°C/min)	ISO 11357-1/-3	°C	262
<b>Electrical properties</b>			
Surface resistivity	IEC 62631-3-2	Ohm	1E14 / 1E12
Volume resistivity	IEC 62631-3-1	Ohm*m	1E12 / 1E11
Electric strength (d = 0.8 mm)	IEC 60243-1	kV/mm	30 / 26
Relative permittivity (1 MHz)	IEC 62631-2-1	-	2.9 / 3.2
Dissipation factor (1 MHz)	IEC 62631-2-1	E-4	0.03 / 0.08
Comparative tracking index, CTI, test liquid A	IEC 60112	-	600 / 575
Comparative tracking index, CTI M, test liquid B	IEC 60112	-	525 / -
<b>Flammability</b>			
Burning Behav. at 1.6 mm nom. thickn.	IEC 60695-11-10	class	V-2
Burning Behav. at thickness 3.2 mm	IEC 60695-11-10	class	V-2
Burning Behav. at thickness 0.8 mm	UL-94, IEC 60695	class	V-2
Glow Wire Flammability Index (0.8 mm)	IEC 60695-2-12	°C	650
Glow Wire Flammability Index (1.6 mm)	IEC 60695-2-12	°C	650
Glow Wire Ignition Temperature (1.6 mm)	IEC 60695-2-13	°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	260 - 270
Injection molding cylinder temperature 2 (compression)	-	°C	270 - 275
Injection molding cylinder temperature 3 (metering-zone, head room of screw)	-	°C	275 - 285
injection molding, Mold temperature, range	ISO 294	°C	60 - 80

### Footnotes

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

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



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