

The superhero for engineers

Ultramid® Advanced N for challenging applications

Ultramid® Advanced N shows constant mechanics up to 100 °C (glass transition temperature: 125 °C). It has the highest chemical resistance and lowest water absorption of all Ultramid® Advanced PPAs. With its high toughness and flexibility even for unreinforced grades, it is also suitable for extrusion. The portfolio comprises flame retardant and laser transparent grades.

BASF
We create chemistry



chemical resistance
low water uptake
dimensional stability
hydrophobicity



PPA = Polyphthalamide



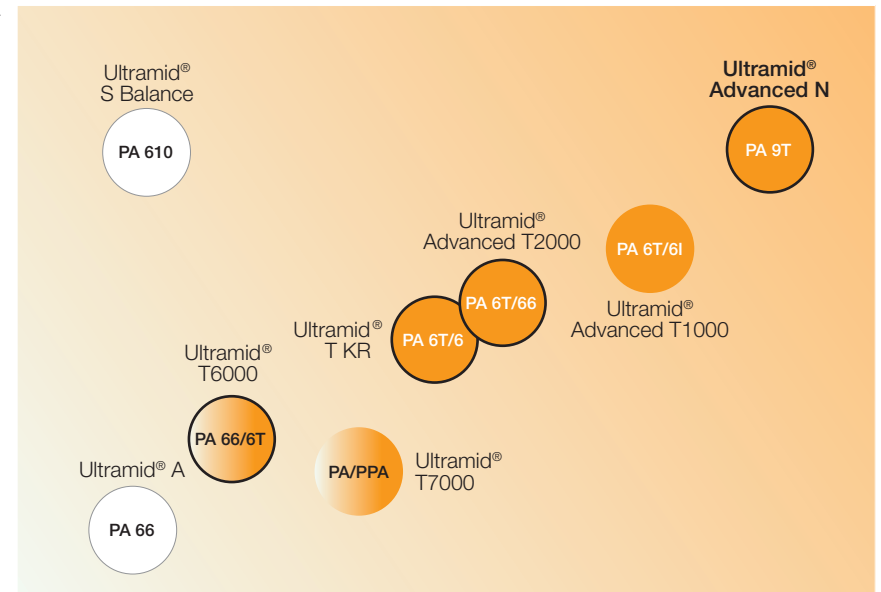
PPA blend or PPA copolymer, < 55% aromatic diacid content



PA = Polyamide



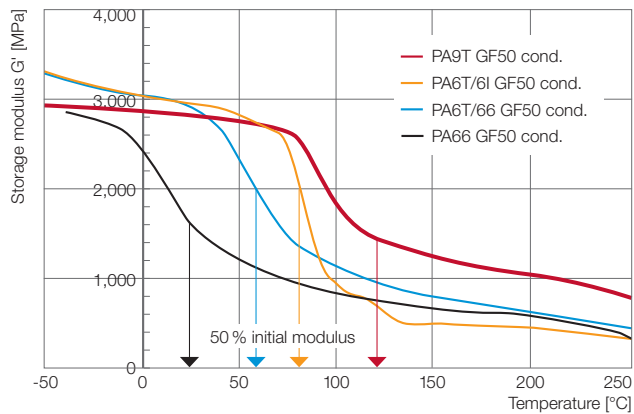
Flame retardant grades available



Performance at elevated temperatures and in humid conditions

Glass transition temperature, conditioned

ULTRAMID® ADV

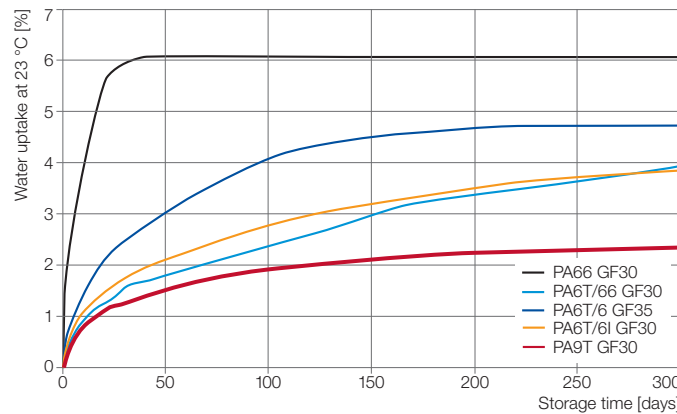


High strength and stiffness over broadest temperature range

- Easier dimensioning of thin-wall parts
- Highest mechanical properties of all Ultramid® grades at temperatures above T_g



Stable mechanics at elevated temperatures



High dimensional stability and lowest water uptake of all Ultramid® PA and PPA grades

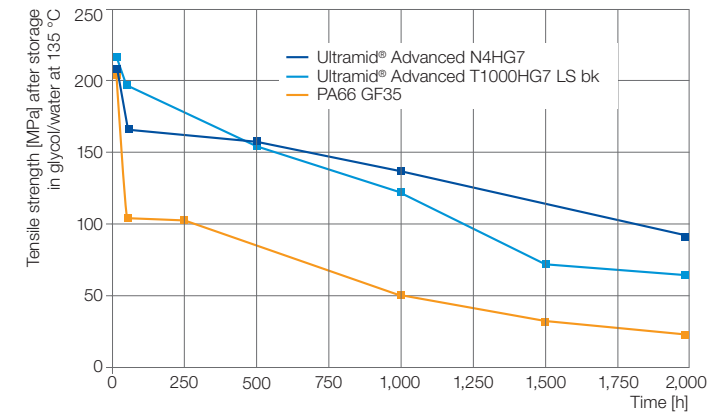
- Small influence on properties due to low water uptake
- No blistering during soldering, therefore perfectly suitable for lead-free soldering



High dimensional stability



Perfect lead-free soldering



Superior resistance to many challenging media such as glycol/water even at highest application temperatures

- High retention of properties even after ageing at elevated temperatures in coolants (up to 135° C), acids, brake fluids, road salt solutions and other challenging media



Outstanding chemical resistance

ADVANCED N

Mechanical properties

Ultramid® Advanced	T _g [°C]	T _m [°C]	HDT A ISO 75 [°C]	Water uptake ISO 62 [%]	Specific gravity ISO 1183 [g/cm ³]	E-modulus at 23 °C ISO 527 [MPa]	Tensile strength at 23 °C ISO 527 [MPa]	Elongation at break ISO 527 [%]	Charpy notched ISO 179/1eA [kJ/m ²]	Flow spiral length [mm]	Shrinkage longit./perpend. [%]
N4H	125	300	130	2.5	1.1	2,600 / cond. 2,600	65 / cond. 65	7	6	370	1.7 / 1.8
N3HG6	125	300	270	2	1.4	10,000 / cond. 10,000	185 / cond. 160	2.5	9	360	0.5 / 0.9
N4HG7	125	300	270	1.9	1.4	11,500 / cond. 11,500	215 / cond. 200	2.6	10	290	0.5 / 0.9
N3U41G6	125	300	265	2	1.4	10,500 / cond. 10,500	140 / cond. 130	2.2	6.5	–	0.3 / 1.0

E&E properties

Ultramid® Advanced	Moisture absorption ISO 62 23 °C / 50 % r.h. [%]	UL 94 Class [mm]	GWFI IEC 60695-2-12 [°C (mm)]	GWIT IEC 60695-2-13 [°C (mm)]	CTI IEC 60112	RTI UL 746 B at 1.5 mm [°C]
N4U41	1.1-1.2	V-2 (0.4) V-0 (1.5)	960 (0.75)	750 (0.75)	600	150
N3U41G6	1.0	V-0 5VA (1.5)	960 (1)	775 (1)	600	150

Processing

Ultramid® Advanced	T _m DIN 53 765 [°C]	Melt temperature [°C]	Mold temperature [°C]
N4H	300	320-340	125-160
N3HG6	300	320-340	125-170
N3U41G6	300	310-340	100-160

Ultramid® Advanced N

Product portfolio and applications

	Ultramid® Advanced	Reinforcement	Stabilization	Colors
Unreinforced	N4H	–	standard (H)	LS bk, un
	N6H	–	standard (H)	Un
Glass-fiber reinforced	N3HG6	30 % GF	standard (H)	LS bk, un, LT bk
	N3WG6	30 % GF	high (W)	LS bk, un
	N4HG7	35 % GF	standard (H)	LS bk, un
	N4WG7	35 % GF	high (W)	LS bk
Flame retardant	N4U41	–	standard, FR	LS bk
	N3U41G6	30 % GF	standard, FR	LS bk, un, colors*
	N3U42G6	30 % GF	standard, FR	LS bk
	N2U40G7	35 % GF	standard, FR	LS bk, un, colors*
	N2U45G7	35 % GF	standard, FR	LS bk
	N2U49G10 SI	50 % GF	standard, FR	Bk
Mineral filled	N2GM28	10 % GF, 40 % Min	high (W)	Bk, wt
	N25EM8 / M9	40 / 45 % Min	standard (E)	Bk
Impact modified	N4Z	IM	standard	LS bk, un
	N4ZG3	IM, 15 % GF	standard	Un
	N6Z4	IM	standard	LS bk

LS: laser sensitive; LT: laser transparent; LR: light reflective; IM: impact modified

*Besides pre-colored compounds in black, grey, orange and white, UL® certified masterbatches are available for self-coloring



The right material for the right part: choose the suitable material for your application!
PPA Product Selector on www.ppa.basf.com

For challenging applications

- Connectors (e.g., auto connectors)
- Power electronics (e.g., IGBT)
- Consumer electronics (e.g., mobile CCM)
- Electric powertrain
- Motors & actuators
- Thermal management
- Structural parts
- Extruded tubes/pipes

→ blow molding and extrusion possible

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 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. (August 2024)



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