**Processing Data Sheet** # Ultramid® Advanced

N4H UN

09/2026 **PA9T**

## Product description

Partially aromatic polyphthalamide for injection molding and extrusion with strong mechanical properties especially at elevated temperatures, good long-term thermal stability and excellent chemical resistance for highly stressed parts. The product can be characterized as polymer with high toughness, extremely low water absorption, outstanding dimensional stability and very good wear/sliding friction properties. It features a high melting point (300°C) and excellent melt stability.

Markets & applications
Automotive: Gear wheels, valves, powertrain, extrusion applications, tribo applications
Industry goods: Tribo applications, extruded lines
Consumer goods: Home appliances, rollers, consumer electronics

## Physical form and storage

The product is supplied in the form of granules with a bulk density of approx. 0.7 g/cm³. Standard packs are bag and bulk container (octagonal IBC=intermediate bulk container made from corrugated board with a liner bag). Other packaging materials and shipping in road or rail silo wagons are possible by agreement. The containers should only be opened immediately before processing or drying. To ensure that the delivered product absorbs as little moisture as possible, the containers should be stored in dry rooms and always carefully closed again after partial quantities have been withdrawn. In principle, the product can be stored for a long period of time. Containers stored in cold rooms should be equalized to ambient temperature before opening in order to avoid condensation on the granules. Regardless of the storage conditions, the product should be pre-dried according to our recommendations and the machine should preferably be loaded using a closed conveyor system.

## 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.

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## Processing Data Sheet

We create chemistry

| | Test method | Unit | Values |
|---|---|---|---|
| **Properties** | | | |
| Polymer abbreviation | - | - | **PA9T** |
| Density | ISO 1183 | kg/m³ | **1130** |
| Melt volume rate MVR 330 °C/5 kg | ISO 1133 | cm³/10min | **53** |
| **Drying** | | | |
| Moisture, recommended [1)] | - | % | **0.03** |
| Dryer temperature [2)] | - | °C | **120** |
| Drying time [3)] | - | h | **8** |
| Moisture, max. | - | % | **0.05** |
| **Injection molding** | | | |
| Melt temperature range | - | °C | **320 - 340** |
| Melt temperature, optimal | - | °C | **330** |
| Mold temperature range | - | °C | **125 - 160** |
| Mold temperature, optimal | - | °C | **≥ 140** |
| Residence time, max. | - | min | **5** |
| **Machine Settings Injection Molding** | | | |
| Temperature hopper throat | - | °C | **80** |
| Cylinder temperature 1 (feed zone) | - | °C | **310** |
| Cylinder temperature 2 (compression) | - | °C | **315** |
| Cylinder temperature 3 (metering-zone, in front of the screw) | - | °C | **320** |
| Cylinder temperature 4 (nozzle) | - | °C | **325** |
| Peripheral screw speed | - | m/s | **≤ 0.3** |
| **Extrusion** | | | |
| Extrusion, Melt temperature | | °C | **315 - 335** |
| Extrusion, Melt temperature, recommended | | °C | **325** |
| Dwell time, thermoplastics, max. | | min | **5** |
| **Machine Settings Extrusion** | | | |
| Extrusion cylinder temperature 1 | | °C | **315** |
| Extrusion cylinder temperature 2 | | °C | **320** |
| Extrusion cylinder temperature 3 | | °C | **325** |
| Extrusion cylinder temperature 4 | | °C | **325** |
| **Shrinkage** | | | |
| Molding shrinkage (parallel) | ISO 294-4 | % | **1.74** |
| Molding shrinkage (normal) | ISO 294-4 | % | **1.82** |

Footnotes
1) A slight increase in viscosity during processing is possible.
2) Dry air dryer; drying time is dependent on the inital moisture content of the granules, drying temperature and the dew point of the dried air.
3) In case of improper storage (e.g. open packages) drying time may have to be extended.

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