

#### Product description

Ultramid® C 402M Natural is an unreinforced polyamide 6, high viscosity, for extrusion. This grade offers high flexibility and high impact performance.

#### Extrusion 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.

#### 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

#### 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

## Product Information

| 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   | -               | -                 | +                    |
| Near East/Africa   | -               | -                 | +                    |
| Processing: Injection moulding (M), Extrusion (E), Blow moulding (B) | -               | -                 | E                    |
| Colour; black (bk), uncoloured (un), coloured (co), transparent (tr) | -               | -                 | un                   |
| Pellets  | -               | -                 | +                    |
| <b>Physical</b>  |                 |                   |                      |
| Molding shrinkage (parallel)   | ISO 294-4       | %                 | 1.50                 |
| Molding shrinkage (normal)   | ISO 294-4       | %                 | 1.50                 |
| Water absorption, 24 h in water, 23 °C                               | ISO 62          | %                 | 1.9                  |
| Density  | ISO 1183        | kg/m <sup>3</sup> | 1140 / -             |
| <b>Mechanical properties</b>   |                 |                   |                      |
|  |                 |                   | dry / cond.          |
| Tensile modulus  | ISO 527-1/-2    | MPa               | 1200 / 550           |
| Yield stress, 50 mm/min  | ISO 527-1/-2    | MPa               | 55 / 35              |
| Flexural modulus   | ISO 178         | MPa               | 1000 / 530           |
| Flexural strength  | ISO 178         | MPa               | 50 / 30              |
| Charpy notched impact strength ISO 179/1eA (23°C)                    | ISO 179/1eA     | kJ/m <sup>2</sup> | 18 / N               |
| Charpy impact strength ISO 179-1eU (23°C)                            | ISO 179/1eU     | kJ/m <sup>2</sup> | N / -                |
| Izod notched impact strength ISO 180/A (23°C)                        | ISO 180/A       | kJ/m <sup>2</sup> | 15 / -               |
| <b>Thermal properties</b>  |                 |                   |                      |
| HDT A (1.80 MPa)   | ISO 75-1/-2     | °C                | 65                   |
| Melting temperature, DSC (10°C/min)                                  | ISO 11357-1/-3  | °C                | 222                  |
| <b>Electrical properties</b>   |                 |                   |                      |
|  |                 |                   | dry / cond.          |
| Surface resistivity  | IEC 62631-3-2   | Ohm               | 1E14 / 1E12          |
| Volume resistivity   | IEC 62631-3-1   | Ohm*m             | 1E13 / 1E11          |
| Electric strength (d = 2.0 mm)                                       | IEC 60243-1     | kV/mm             | - / 18               |
| Relative permittivity (100Hz)  | IEC 62631-2-1   | -                 | 3.6 / 4.1            |
| Dissipation factor (100 Hz)  | IEC 62631-2-1   | E-4               | 0.021 / 0.12         |
| <b>Flammability</b>  |                 |                   |                      |
| Burning Behav. at 1.6 mm nom. thickn.                                | IEC 60695-11-10 | class             | HB                   |
| <b>Extrusion Notes</b>   |                 |                   |                      |
| Pre/Post-processing, max. allowed water content                      | -               | %                 | 0.08                 |
| Extrusion cylinder temperature 1                                     |                 | °C                | 225 - 240            |
| Extrusion cylinder temperature 2                                     |                 | °C                | 230 - 250            |
| Extrusion cylinder temperature 3                                     |                 | °C                | 235 - 255            |
| Extrusion, Die temperature   |                 | °C                | 240                  |

### Footnotes

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

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

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