

## Ultraform® N2720 M63 AT

### POM-MD30

BASF

Mineral-reinforced material for low-warpage moldings with high stiffness, strength and hardness.

Abbreviated designation according to ISO 1043: POM-MD30  
Designation according to ISO 29988-POM-K,MD30,M-GNR,2-3

| Rheological properties      | Value | Unit                   | Test Standard   |
|-----------------------------|-------|------------------------|-----------------|
| <b>ISO Data</b>             |       |                        |                 |
| Melt volume-flow rate, MVR  | 3.8   | cm <sup>3</sup> /10min | ISO 1133        |
| Temperature                 | 190   | °C                     | -               |
| Load                        | 2.16  | kg                     | -               |
| Molding shrinkage, parallel | 1.2   | %                      | ISO 294-4, 2577 |
| Molding shrinkage, normal   | 1.5   | %                      | ISO 294-4, 2577 |

| Mechanical Properties                   | Value | Unit              | Test Standard |
|-----------------------------------------|-------|-------------------|---------------|
| <b>ISO Data</b>                         |       |                   |               |
| Tensile Modulus                         | 7000  | MPa               | ISO 527       |
| Yield stress                            | 75    | MPa               | ISO 527       |
| Yield strain                            | 5     | %                 | ISO 527       |
| Nominal strain at break                 | 6     | %                 | ISO 527       |
| Tensile Creep Modulus, 1h               | 4100  | MPa               | ISO 899-1     |
| Tensile Creep Modulus, 1000h            | 2750  | MPa               | ISO 899-1     |
| Impact Strength (Charpy), +23°C         | 55    | kJ/m <sup>2</sup> | ISO 179/1eU   |
| Impact Strength (Charpy), -30°C         | 55    | kJ/m <sup>2</sup> | ISO 179/1eU   |
| Notched Impact Strength (Charpy), +23°C | 3.5   | kJ/m <sup>2</sup> | ISO 179/1eA   |
| Notched Impact Strength (Charpy), -30°C | 3     | kJ/m <sup>2</sup> | ISO 179/1eA   |

| Thermal Properties                          | Value | Unit  | Test Standard  |
|---------------------------------------------|-------|-------|----------------|
| <b>ISO Data</b>                             |       |       |                |
| Melting Temperature (10°C/min)              | 167   | °C    | ISO 11357-1/-3 |
| Temp. of deflection under load (1.80 MPa)   | 140   | °C    | ISO 75-1/-2    |
| Temp. of deflection under load (0.45 MPa)   | 160   | °C    | ISO 75-1/-2    |
| Vicat softening temperature, 50°C/h 50N     | 155   | °C    | ISO 306        |
| Coeff. of Linear Therm. Expansion, parallel | 45    | E-6/K | ISO 11359-1/-2 |
| Burning Behav. at 1.5 mm Nom. Thickn.       | HB    | class | UL 94          |
| Thickness tested                            | 1.6   | mm    | -              |
| UL recognition                              | yes   | -     | -              |
| Burning Behav. at thickness h               | HB    | class | UL 94          |
| Thickness tested                            | 0.8   | mm    | -              |

| Electrical Properties        | Value | Unit  | Test Standard |
|------------------------------|-------|-------|---------------|
| <b>ISO Data</b>              |       |       |               |
| Relative permittivity, 100Hz | 4     | -     | IEC 62631-2-1 |
| Relative permittivity, 1MHz  | 4.2   | -     | IEC 62631-2-1 |
| Dissipation Factor, 100Hz    | 70    | E-4   | IEC 62631-2-1 |
| Dissipation Factor, 1MHz     | 50    | E-4   | IEC 62631-2-1 |
| Volume Resistivity           | 1E10  | Ohm*m | IEC 62631-3-1 |
| Surface Resistivity          | 1E14  | Ohm   | IEC 62631-3-2 |
| Electric Strength            | 43    | kV/mm | IEC 60243-1   |
| Comparative tracking index   | 600   | -     | IEC 60112     |

| Other Properties    | Value | Unit              | Test Standard  |
|---------------------|-------|-------------------|----------------|
| <b>ISO Data</b>     |       |                   |                |
| Water Absorption    | 0.9   | %                 | Sim. to ISO 62 |
| Humidity absorption | 0.15  | %                 | Sim. to ISO 62 |
| Density             | 1650  | kg/m <sup>3</sup> | ISO 1183       |

| Rheological calculation properties | Value | Unit | Test Standard |
|------------------------------------|-------|------|---------------|
| <b>ISO Data</b>                    |       |      |               |
| Ejection temperature               | 125   | °C   | -             |

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| Test specimen production              | Value | Unit | Test Standard |
|---------------------------------------|-------|------|---------------|
| <b>ISO Data</b>                       |       |      |               |
| Injection Molding, melt temperature   | 200   | °C   | ISO 294       |
| Injection Molding, mold temperature   | 90    | °C   | ISO 294       |
| Injection Molding, injection velocity | 200   | mm/s | ISO 294       |

| Processing Recommendation Injection Molding | Value     | Unit | Test Standard |
|---------------------------------------------|-----------|------|---------------|
| Pre-drying - Temperature                    | 100       | °C   | -             |
| Pre-drying - Time                           | 3         | h    | -             |
| Processing humidity                         | ≤0.2      | %    | -             |
| Melt temperature                            | 190 - 220 | °C   | -             |
| Mold temperature                            | 60 - 120  | °C   | -             |

### Characteristics

#### Processing

Injection Molding

#### Additives

Release agent

#### Delivery form

Pellets

#### Features

Copolymer

### Injection Molding

#### PREPROCESSING

Pre/Post-processing, max. allowed water content: .2 %

Pre/Post-processing, Pre-drying, Temperature: 100 °C

Pre/Post-processing, Pre-drying, Time: 3 h

#### PROCESSING

injection molding, Melt temperature, range: 190 - 220 °C

injection molding, Melt temperature, recommended: 210 °C

injection molding, Mold temperature, range: 60 - 120 °C

injection molding, Mold temperature, recommended: 100 °C

injection molding, Dwell time, thermoplastics: 10 min

#### Processing

Usual single-flighted three-section screws with an effective screw length of at least 15 D, better 20 - 23 D are suitable for the injection molding of Ultraform.

#### Pretreatment

Granules or pellets in original packaging can be processed without any special pretreatment. Granules or pellets which have become moist due to prolonged or incorrect storage (e.g. by formation of condensed water) must be dried in dehumidifying or recirculating air dryers for approx. 3 hours at about 100 - 110 °C. The moisture content should not exceed 0.2 %.

#### Postprocessing

If parts were produced at a comparatively low mold temperature (e.g. in order to obtain short cycle times) and must not change their geometry in use thermal postprocessing inducing dimensional changes by postcrystallization may be necessary. In such cases parts should be stored in an oven with recirculated air at temperatures of 100 - 130 °C until dimensions don't change significantly any further. The time needed for this has to be determined experimentally.