

# BADAMID® | UL B703 GF30 FR03 HF

PA6-GF30-FR(40)

with 30% glass fibres reinforced, halogenfree and free of red phosphorus flame retardent polyamide 6 injection moulding grade for the electronic industry

| Properties                                                     | Test conditions              | Test method                                                          | Unit                                                                       | dry as molded          | conditioned<br>23 °C, 50 % r.F. |
|----------------------------------------------------------------|------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------------|------------------------|---------------------------------|
| <b>Mechanical Properties</b>                                   |                              |                                                                      |                                                                            |                        |                                 |
| Tensile Modulus                                                | 23°C, 1 mm/Min               | ISO 527-1/2                                                          | MPa                                                                        | 12000                  | 8500                            |
| Tensile Strength at yield                                      | 23°C, 50 mm/Min              | ISO 527-1/2                                                          | MPa                                                                        | -                      | -                               |
| Tensile strain at yield                                        | 23°C, 50 mm/Min              | ISO 527-1/2                                                          | %                                                                          | -                      | -                               |
| Nominal strain at break                                        | 23°C, 50 mm/Min              | ISO 527-1/2                                                          | %                                                                          | -                      | -                               |
| Tensile stress at break                                        | 23°C, 5 mm/Min               | ISO 527-1/2                                                          | MPa                                                                        | 125                    | 85                              |
| Tensile strain at break                                        | 23°C, 5 mm/Min               | ISO 527-1/2                                                          | %                                                                          | 2                      | 3.5                             |
| Flexural Modulus                                               | 23°C                         | ISO 178                                                              | MPa                                                                        | -                      | -                               |
| Flexural Strength                                              | 23°C                         | ISO 178                                                              | MPa                                                                        | -                      | -                               |
| Charpy Impact Strength                                         | 23°C<br>-30°C                | ISO 179/1eU<br>ISO 179/1eU                                           | kJ/m²<br>kJ/m²                                                             | 43<br>-                | 65                              |
| Charpy Notched Impact Strength                                 | 23°C<br>-30°C                | ISO 179/1eA<br>ISO 179/1eA                                           | kJ/m²<br>kJ/m²                                                             | 8<br>-                 | 17                              |
| Izod Notched Impact Strength                                   | 23°C<br>-30°C                | ISO 180/1A<br>ISO 180/1A                                             | kJ/m²<br>kJ/m²                                                             | -<br>-                 | -                               |
| Ball indentation hardness                                      | 358 N                        | ISO 2039-1                                                           | MPa                                                                        | -                      | -                               |
| <b>Thermal Properties</b>                                      |                              |                                                                      |                                                                            |                        |                                 |
| Melting temperature                                            | 10 K/min                     | ISO 3146                                                             | °C                                                                         | 222                    |                                 |
| Temperature of deflection under load                           | 0,45 MPa<br>1,8 MPa<br>8 MPa | ISO 75-1/2<br>ISO 75-1/2<br>ISO 75-1/2                               | °C<br>°C<br>°C                                                             | 210<br>200<br>-        |                                 |
| Coefficient of linear thermal expansion                        | parallel<br>across           | ISO 11359-2<br>ISO 11359-2                                           | E-4/K<br>E-4/K                                                             | -<br>-                 |                                 |
| Thermal conductivity                                           | Test plate 2 mm              | DIN 52612-1                                                          | W/(m*K)                                                                    | -                      |                                 |
| Maximum service temperature (50% decrease in tensile strength) | some hours<br>20.000 h       | IEC-60216<br>IEC-60216                                               | °C<br>°C                                                                   | 200<br>120             |                                 |
| Flammability                                                   |                              | UL94<br>UL94<br>UL94<br>UL94                                         | Wall thickness mm<br>Rating<br>Wall thickness mm<br>Rating                 | 0,4<br>V-0<br>3<br>V-0 |                                 |
| Glow wire test GWIT                                            |                              | IEC-60695-2-13<br>IEC-60695-2-13<br>IEC-60695-2-13<br>IEC-60695-2-13 | Wall thickness mm<br>Temperature °C<br>Wall thickness mm<br>Temperature °C | 1,5<br>775<br>-<br>-   |                                 |
| Glow wire test GWF1                                            |                              | IEC-60695-2-12<br>IEC-60695-2-12<br>IEC-60695-2-12<br>IEC-60695-2-12 | Wall thickness mm<br>Temperature °C<br>Wall thickness mm<br>Temperature °C | 0,4<br>960<br>3<br>960 |                                 |
| <b>Electrical Properties</b>                                   |                              |                                                                      |                                                                            |                        |                                 |
| Relative Permittivity                                          | 1 MHz                        | IEC-62631-2-1                                                        | -                                                                          | 4,2                    | 4,5                             |
| Dissipation Factor                                             | 1 MHz                        | IEC-62631-2-1                                                        | E-4                                                                        | 200                    | 1000                            |
| Spec. Volume Resistivity                                       | -                            | IEC-62631-3-1                                                        | Ohm*cm                                                                     | 1.0E15                 | 1.0E12                          |

# BADAMID® | UL B703 GF30 FR03 HF

PA6-GF30-FR(40)

with 30% glass fibres reinforced, halogenfree and free of red phosphorus flame retardent polyamide 6 injection moulding grade for the electronic industry

| Properties                          | Test conditions                   | Test method                      | Unit                               | dry as molded | conditioned<br>23 °C, 50 % r.F. |
|-------------------------------------|-----------------------------------|----------------------------------|------------------------------------|---------------|---------------------------------|
| Spec. Surface Resistivity           | -                                 | IEC-62631-3-2                    | Ohm                                | 1.0E13        | 1.0E11                          |
| Dielectric Strength                 | -                                 | IEC-60243-1                      | kV/mm                              | -             | -                               |
| Comparative Tracking Index (CTI)    | -                                 | IEC-60112                        | V                                  | 600           | -                               |
| <b>Other Data</b>                   |                                   |                                  |                                    |               |                                 |
| Water absorption                    | 23°C, Saturation                  | ISO 62                           | %                                  | 6.8           |                                 |
| Moisture absorption                 | 23°C, 50% r.h.                    | ISO 62                           | %                                  | 2             |                                 |
| Density                             | 23°C                              | ISO 1183                         | g/cm <sup>3</sup>                  | 1.53          |                                 |
| Melt Volume Rate (MVR)              | Value<br>Temperature<br>Test Load | ISO 1133<br>ISO 1133<br>ISO 1133 | cm <sup>3</sup> /10min<br>°C<br>kg | -<br>-<br>-   |                                 |
| Viscosity number                    | 0,5% in 96% H2SO4                 | ISO 307                          | cm <sup>3</sup> /g                 | -             |                                 |
| <b>Processing injection molding</b> |                                   |                                  |                                    |               |                                 |
| Melt temperature                    |                                   |                                  | °C                                 | 260 - 280     |                                 |
| Mold temperature                    |                                   |                                  | °C                                 | 80 - 90       |                                 |
| Guide Value Moisture                |                                   |                                  | %                                  | < 0,05        |                                 |
| Drying temperature                  |                                   |                                  | °C                                 | 80 - 100      |                                 |
| Guide Value Drying time             |                                   |                                  | h                                  | 3 - 4         |                                 |

Issue date 08.05.2025

## Legend

- = not tested  
NB = No break

Based on our current state of knowledge, this data represents reference values and, unless otherwise stated, stands for uncoloured material. Therefore, it does not constitute a warranty of certain properties, more particularly it is no material specification. It is the responsibility of the processors to check the suitability of the material for a particular application as well as compliance with statutory regulations and intellectual property rights. The data stated above may be modified at any time without prior notice. The information does not imply any contractual obligation on our part, any liability is expressly excluded.