

# AKROLOY® PA GF 50 natural (2916)

Polyamide 66 + PA 6I/6T

AKRO-PLASTIC GmbH

## Message:

AKROLOY® PA GF 50 natural (2916) is a 50% glass fibre reinforced polyamide blend with very high stiffness and strength, even in conditioned state. Applications are components with high dimensional stability, independent from moisture content. AKROLOY® PA GF 50 is an alternative for aluminium- and zinc diecast alloys.

| General Information                        |            |                                  |                        |                 |
|--------------------------------------------|------------|----------------------------------|------------------------|-----------------|
| Filler / Reinforcement                     |            | Glass Fiber,50% Filler by Weight |                        |                 |
| Features                                   |            | Good Dimensional Stability       |                        |                 |
|                                            |            | High Stiffness                   |                        |                 |
|                                            |            | High Strength                    |                        |                 |
| Uses                                       |            | Metal Replacement                |                        |                 |
| Appearance                                 |            | Natural Color                    |                        |                 |
| Resin ID (ISO 1043)                        |            | PA66+PA6I/6T GF50                |                        |                 |
| Physical                                   | Dry        | Conditioned                      | Unit                   | Test Method     |
| Density (23°C)                             | 1.59       | --                               | g/cm <sup>3</sup>      | ISO 1183        |
| Melt Volume-Flow Rate (MVR) (275°C/5.0 kg) | 9.00       | --                               | cm <sup>3</sup> /10min | ISO 1133        |
| Spiral Flow                                | 54.0       | --                               | cm                     | Internal Method |
| Molding Shrinkage                          |            |                                  |                        | ISO 294-4       |
| Across Flow                                | 0.50       | --                               | %                      |                 |
| Flow                                       | < 0.30     | --                               | %                      |                 |
| Water Absorption (Saturation, 23°C)        | 3.5 to 4.0 | --                               | %                      | ISO 62          |
| Humidity Absorption - 62% RH (70°C)        | 1.1        | --                               | %                      | ISO 1110        |
| Temperature Index                          |            |                                  |                        | IEC 216         |
| 50% Loss of Tensile Strength, 20000 hr     | 110 to 130 | --                               | °C                     |                 |
| 50% Loss of Tensile Strength, 5000 hr      | 140 to 150 | --                               | °C                     |                 |
| Hardness                                   | Dry        | Conditioned                      | Unit                   | Test Method     |
| Ball Indentation Hardness (H 961/30)       | 290        | --                               | MPa                    | ISO 2039-1      |
| Mechanical                                 | Dry        | Conditioned                      | Unit                   | Test Method     |
| Tensile Modulus                            | 17500      | 16500                            | MPa                    | ISO 527-2/1     |
| Tensile Stress (Break)                     | 250        | 220                              | MPa                    | ISO 527-2/5     |
| Tensile Strain (Break)                     | 3.0        | 3.0                              | %                      | ISO 527-2/5     |
| Flexural Modulus <sup>1</sup>              | 16400      | --                               | MPa                    | ISO 178         |
| Flexural Stress <sup>2</sup>               | 380        | --                               | MPa                    | ISO 178         |

| Impact                                  | Dry           | Conditioned | Unit              | Test Method    |
|-----------------------------------------|---------------|-------------|-------------------|----------------|
| Charpy Notched Impact Strength          |               |             |                   | ISO 179/1eA    |
| -30°C                                   | 15            | --          | kJ/m <sup>2</sup> |                |
| 23°C                                    | 17            | 17          | kJ/m <sup>2</sup> |                |
| Charpy Unnotched Impact Strength        |               |             |                   | ISO 179/1eU    |
| -30°C                                   | 95            | --          | kJ/m <sup>2</sup> |                |
| 23°C                                    | 110           | 100         | kJ/m <sup>2</sup> |                |
| Thermal                                 | Dry           | Conditioned | Unit              | Test Method    |
| Heat Deflection Temperature             |               |             |                   |                |
| 0.45 MPa, Unannealed                    | 245           | --          | °C                | ISO 75-2/B     |
| 1.8 MPa, Unannealed                     | 225           | --          | °C                | ISO 75-2/A     |
| Vicat Softening Temperature             | 242           | --          | °C                | ISO 306/B50    |
| Melting Temperature <sup>3</sup>        | 255           | --          | °C                | DIN EN 11357-1 |
| CLTE                                    |               |             |                   | ISO 11359-2    |
| Flow : 23 to 80°C                       | 1.5E-5        | --          | cm/cm/°C          |                |
| Transverse : 23 to 80°C                 | 6.5E-5        | --          | cm/cm/°C          |                |
| Electrical                              | Dry           | Conditioned | Unit              | Test Method    |
| Surface Resistivity                     | 1.5E+17       | --          | ohms              | IEC 60093      |
| Volume Resistivity                      | 9.1E+13       | --          | ohms·cm           | IEC 60093      |
| Relative Permittivity (1 MHz)           | 4.42          | --          |                   | IEC 60250      |
| Comparative Tracking Index (Solution A) | 600           | --          | V                 | IEC 60112      |
| Flammability                            | Dry           | Conditioned | Unit              | Test Method    |
| Burning Rate <sup>4</sup> (1.00 mm)     | < 100         | --          | mm/min            | FMVSS 302      |
| Flame Rating (0.800 mm)                 | HB            | --          |                   | UL 94          |
| NOTE                                    |               |             |                   |                |
| 1.                                      | 2.0 mm/min    |             |                   |                |
| 2.                                      | 2.0 mm/min    |             |                   |                |
| 3.                                      | 10 K/min, DSC |             |                   |                |
| 4.                                      | >1 mm         |             |                   |                |

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