Röchling

Industrial

# Technical Data Sheet

# Sustamid® 12 GF 30

### Product characteristics

- High stiffness
- High hardness
- Good dimensional stability

### Product applications

- Mechanical engineering
- Electrical industry
- Chemical engineering and tank building

| | Test method | Unit | Guideline Value |
|---|---|---|---|
| **General properties** | | | |
| Density | DIN EN ISO 1183-1 | g / $cm^3$ | 1,25 |
| Water absorption | DIN EN ISO 62 | % | 0,5 |
| Flammability (Thickness 3 mm / 6 mm) | UL 94 | | HB / HB |
| **Mechanical properties** | | | |
| Yield stress | DIN EN ISO 527 | MPa | 60 |
| Elongation at break | DIN EN ISO 527 | % | 15 |
| Tensile modulus of elasticity | DIN EN ISO 527 | MPa | 4200 |
| Notched impact strength | DIN EN ISO 179 | kJ / $m^2$ | 5,0 |
| Shore hardness | DIN EN ISO 868 | scale D | 79 |
| **Thermal properties** | | | |
| Melting temperature | ISO 11357-3 | °C | 178 |
| Coefficient of linear thermal expansion | DIN 53752 | $10^{-6}$ / K | 50 |
| Service temperature, long term | Average | °C | -40 ... 80 |
| Service temperature, short term (max.) | Average | °C | 150 |
| Heat deflection temperature | DIN EN ISO 75, Verf. A, HDT | °C | 130 |
| **Electrical properties** | | | |
| Dielectric constant | IEC 60250 | | 4,1 |
| Dielectric dissipation factor (50 Hz) | IEC 60250 | | 0,031 |
| Volume resistivity | DIN EN 62631-3-1 | Ω * cm | $10^{15}$ |
| Surface resistivity | DIN EN 62631-3-2 | Ω | $10^{14}$ |
| Comparative tracking index | IEC 60112 | | 600 |
| Dielectric strength | IEC 60243 | kV / mm | 40 |

The following applies to Polyamides: Under the influence of moisture absorption, the mechanical properties change. The material becomes tougher and more resistant to impact, the modulus of elasticity declines. Depending on the environmental atmosphere, the temperature and the period of moisture absorption, only the surface layer is affected by alterations of property to a certain depth. On thick-walled parts, the center area remains unaffected. The short-term maximum application temperature only applies to very low mechanical stress for a few hours. The long-term maximum application temperature is based on the thermal ageing of plastics by oxidation, resulting in a decrease of the mechanical properties. This applies to an exposure to temperatures for at least 5.000 hours causing a 50% loss of the tensile strength from the original value (measured at room temperature). This value says nothing about the mechanical strength of the material at high application temperatures. In case of thick-walled parts, only the surface layer is affected by oxidation from high temperatures. With the addition of antioxidants, a better protection of the surface layer is achieved. In any case, the center area of the material remains unaffected. The minimum application temperature is basically influenced by possible stress factors like impact and/or shock under application. The values stated refer to an minimum degree of impact stress. The data stated above are average values ascertained by statistical tests on a regular basis. They are in accordance with DIN EN 15860. They serve as information about our products and are presented as a guide to choose from our range of materials. This, however, does not include an assurance of specific properties or the suitability for particular application purposes that are legally binding. Since the properties also depend on the dimension of the semi-finished products and the degree of crystallization (e.g. nucleating by pigments), the actual values of the properties of a particular product may differ from the indicated values.

Röchling Industrial Lahnstein SE & Co. KG
Sustaplast-Str. 1 • D-56112 Lahnstein/Germany • Tel. +49 2621 693-0 • Fax +49 2621 693-170
info@sustaplast.de • www.roechling.com/industrial
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