

Material Data Sheet for AuTai PTFE Virgin

Material : PTFE Virgin

Description : Polytetrafluoroethylene, semi-crystalline

Colour : Natural (white)

| Testing | Test value | Unit | Test standard |
|---|---------------|----------------------------------|------------------------|
| Tensile strength at yield | - | MPa | - |
| Elongation at Yield | - | MPa | DIN EN ISO 527 |
| Tensile strength at break | ≥25 | MPa | ISO 12086 / ISO 527 |
| Elongation at break | ≥250 | | ISO 12086 / ISO 527 |
| Modulus of elasticity in tension | 550 | % | ISO 12086 / ISO 527 |
| Modulus of elasticity after flexural test | - | MPa | - |
| Ball Indentation hardness | 22-32 | MPa | ISO 12086 / ISO 2039-1 |
| Impact strength 23C ⁰ under testing(Charpy) | 16 | KJ/M ² | ISO 179/1eA |
| Creep rupture strength (after 1000h with static load) | - | MPa | - |
| Time yield limit (for 1% elongation after 1000h) | - | MPa | - |
| Coefficient of friction(p=0.05N/mm ² ,v=0.6m/s) against hardened and polished steel | 0.08-0.10(13) | - | dynamic |
| Wear(p=0.05N/mm ² ,v=0.6m/s) against hardened and polished steel | >1000 | unm/km | - |
| Crystalline melting point | 327 | °C | ASTM 2116 |
| Glass transition temperature | - | °C | - |
| Heat distortion temperature HDT | - | °C | DIN 53 461(HDT A) |
| Min.service temperature | (-),200 | °C | reference value |
| Max.service temperature short term | 280 | °C | reference value |
| long term | 260 | °C | reference value |
| Thermal conductivity(23C ⁰) | 0.23 | W/(m K) | - |
| Specific heat(23C ⁰) | - | kJ/(kg K) | - |
| Coefficient of thermal expansion (20...60C ⁰) | 100-160 | 10 ⁻⁶ K ⁻¹ | - |
| Dielectric constant | 2.1 | 1MHz | IEC60250 |
| Dielectric loss factor(10 ⁶ Hz) | <0.0003 | 1MHz | IEC60250 |
| Specific volume resistance | 1.00E+18 | Ωcm | IEC60093 |
| Surface resistance | 1.00E+17 | Ω | IEC60093 |
| Dielectric strength | >40 | kV/mm | IEC60234 |
| Resistance to tracking (CTI) | 600 | - | IEC60112 |
| Density | 2.18 | g/cm ³ | ISO 12086 / ISO 1183 |
| Moisture absorption (23C ⁰ /50% Rel.H.) | <0.01 | % | Normklima |
| Water absorption at saturation | - | - | - |
| Flammability | V-O/V-O | 3/6mm | UL94 |

| | |
|-------------------|--|
| Main features: | extremely low sliding friction coefficient, anti-adhesive surface, exceptionally high and low temperature and chemical resistance, very good dielectrically behaviour, weather resistant |
| Preferred fields: | |
| Applications: | <p>Tube:</p> <ul style="list-style-type: none"> -for slide bearings, sealing elements, guide, scrapers -for electrical insulation parts for in and outdoor applications <p>Round bar:</p> <ul style="list-style-type: none"> -for sealing elements, guides, scrapers -for electrical insulation parts in HF or high voltage range -for thermal insulation parts at low and high temperatures for internal and external applications <p>Foil:</p> <ul style="list-style-type: none"> -electrical insulation, flat gaskets, sliding intermediate layer |
| Conformities: | FDA |
| Remark: | <p>The above information corresponds with our current knowledge and indicates our products and possible applications. The data listed herein fall within the normal range of product properties for the products described, but they should not be used to establish specification limits nor used alone as the basis of design. We cannot give a legally binding guarantee of chemical resistance, of certain properties and the suitability of our products and their applications. Our products are not destined for use in medical and dental implants. Existing commercial patents must be observed.</p> |