PA66+GF30 - polyamide 66 glass fiber reinforced

Other material namesPA66+GF30: Nylon 6/6 glass fiber reinforcedMaterial group:Polyamide

PA66+GF30 is a 30 % glass fibre reinforced PA66. It demonstrates outstanding mechanical properties such as higher strength, rigidity, creep strength and dimensional stability. Compared to unreinforced PA66, the properties of this glass filled modification GF30 make this material suitable for use in parts that are exposed to high static loads over long periods in high temperature conditions. As glass fibres tend in some cases to have a marked abrasive effect on mating surfaces, PA66+GF30 is less suitable for sliding applications.

Processing of glass-filled plastics - composites.

Such composites are known for their excellent properties, but their machining is extremely difficult. However, the other benefits of these materials are worth the effort. When machining by milling, turning or just cutting, internal stress is created more than in ordinary plastics, and the stresses occur unevenly, which can have undesirable results. Composites also cause rapid tool wear. Improper machining can generate excessive heat, which leads to cracks and delamination, making the material unusable. Coolants present additional problems. Sharp tools, their correct geometry, annealing, heating before machining, etc. can help. It is always advisable to consider the processing of composites by a professional company with experience, such as TechPlasty.

Color of material:



Typical applications:

- Highly loaded structural elements
- Abrasion-resistant and dimensionally stable machine components
- Pulleys



The material is used in:

Electrotechnical industry Automobile industry Engineering industry Paper industry Production of single-purpose machines

Features:

- very high stiffness
- resistant to many oils, greases and fuels
- good wear properties



- very high strength
- high dimensional stability
- good weldable and bondable

Material availability: Some sizes are in stock

| Specific weight1.29 g/cm³Yield strength160 N/mm²Allowable mean pressure deformation 1%28.00 N/mm²Allowable mean pressure deformation 2%55.00 N/mm²Allowable mean pressure deformation 5%90.00 N/mm²Allowable mean pressure deformation 5%90.00 N/mm²Flexural strength250 N/mm²Tensibility5 %Tensibility5 %Motched toughness50Notched toughness56 kJ/m²Ball hardness240 N/mm²Value240 N/mm²Friction coefficient0.45Antistatic materialNoSpecific internal resistance10^(14) ΩSpecific internal resistance10^(14) ΩMelting point255 °CThermal conductivity0.30 W/(K.m)Permanent use temperature-30; 120 °CAbsorbability1,7 %Water absorption5,5 %Kater absorption5,5 %Chater absorption5,5 %AbsorbabilityiresistantOurability - alcaliresistantDurability - alcaliresistant | Material properties table | |
|--|--|--------------------------|
| Yield strength160 N/mm²Allowable mean pressure deformation 1%28.00 N/mm²Allowable mean pressure deformation 2%55.00 N/mm²Allowable mean pressure deformation 5%90.00 N/mm²Allowable mean pressure deformation 5%90.00 N/mm²Flexural strength250 N/mm²Tensibility5 %Tensibe modulus11 000 N/mm²Impact toughness50Notched toughness6 kJ/m²Ball hardness240 N/mm²Antistatic materialNoNo90.00 (14) ΩSpecific internal resistance10^(14) ΩSpecific internal resistance10^(13) Ω.cmMelting point255 °CThermal expansion310^(-5)/KMelting point30 kV/mmPermanent use temperature-30; 120 °CAbsorbability1,7 %Water absorption5,5 %Resistance - oilsesistantMater absorption5,5 %Resistance - oilsconditionally resistantInternal expansion5,5 %Absorbability - alcaliconditionally resistant | Specific weight | 1.29 g/cm ³ |
| Allowable mean pressure deformation 1%28.00 N/mm²Allowable mean pressure deformation 2%55.00 N/mm²Allowable mean pressure deformation 5%90.00 N/mm²Allowable mean pressure deformation 5%90.00 N/mm²Flexural strength250 N/mm²Tensibility5 %Tensibe modulus11 000 N/mm²Impact toughness50Notched toughness56 kJ/m²Ball hardness240 N/mm²Friction coefficient0.45Antistatic materialNoPermittivity3.90Electrical strength30 kV/mmSpecific internal resistance10^(13) Ω.cmMelting point255 °CThermal expansion3 10^(-5)/KThermal conductivity0.30 W/(K.m)Permanent use temperature Absorbability-30 ; 120 °CKater absorption5,5 %Resistance - oilsresistantAcid resistanceconditionally resistantDurability - alcaliresistant | Yield strength | 160 N/mm ² |
| Allowable mean pressure deformation 2%55.00 N/mm²Allowable mean pressure deformation 5%90.00 N/mm²Flexural strength250 N/mm²Tensibility5 %Tensibe modulus11 000 N/mm²Impact toughness50Notched toughness6 kJ/m²Ball hardness240 N/mm²Friction coefficient0.45Antistatic materialNoPermittivity3.90Electrical strength30 kV/mmSpecific internal resistance10^(14) ΩSpecific internal resistance10^(13) Ω.cmMelting point255 °CThermal expansion31 0° (-5)/KThermal expansion31 0° (-5)/KPermanent use temperature of use Absorbability-30 ; 120 °CWater absorption-55 %Resistance - oilsresistantAcid resistanceconditionally resistantDurability - alcaliresistant | Allowable mean pressure deformation 1% | 28.00 N/mm ² |
| Allowable mean pressure deformation 5%90.00 N/mm²Flexural strength250 N/mm²Tensibility5 %Tensile modulus11 000 N/mm²Impact toughness50Notched toughness240 N/mm²Ball hardness240 N/mm²Friction coefficient0.45Antistatic materialNoPermittivity3.90Electrical strength30 kV/mmSpecific internal resistance10^(14) ΩSpecific internal resistance10^(13) Ω.cmMelting point255 °CThermal conductivity0.30 W/(K.m)Permanent use temperature-30; 120 °CAbsorbability1,7 %Water absorption7.5 %Resistance - oilsresistantAcid resistanceconditionally resistantDurability - alcaliresistantFood contactNo | Allowable mean pressure deformation 2% | 55.00 N/mm ² |
| Flexural strength250 N/mm²Tensibility5 %Tensile modulus11 000 N/mm²Impact toughness50Notched toughness50Ball hardness240 N/mm²Ball hardness240 N/mm²Friction coefficient0.45Antistatic materialNoPermittivity3.90Electrical strength30 kV/mmSpecific internal resistance10^(14) ΩSpecific surface resistance10^(13) Ω.cmMelting point255 °CThermal conductivity0.30 W/(K.m)Permanent use temperature-30 ; 120 °CTransient temperature of use-30 ; 120 °CAbsorbability1,7 %Water absorption5,5 %Resistance - oilsresistantAcid resistanceconditionally resistantDurability - alcaliresistantFood contactNo | Allowable mean pressure deformation 5% | 90.00 N/mm ² |
| Tensibility5 %Tensile modulus11 000 N/mm²Impact toughness50Notched toughness>6 kJ/m²Ball hardness240 N/mm²Friction coefficient0.45Antistatic materialNoPermittivity3.90Electrical strength30 kV/mmSpecific internal resistance10^(14) ΩSpecific surface resistance10^(13) Ω.cmMelting point255 °CThermal expansion31 0^(-5)/KThermal conductivity0.30 W/(K.m)Permanent use temperature-30; 120 °CTransient temperature of use Absorbability1,7 %Water absorption5,5 %Resistance - oilsresistantAcid resistanceconditionally resistantDurability - alcaliresistantNo | Flexural strength | 250 N/mm ² |
| Tensile modulus11 000 N/mm²Impact toughness50Notched toughness>6 kJ/m²Ball hardness240 N/mm²Friction coefficient0.45Antistatic materialNoPermittivity3.90Electrical strength30 kV/mmSpecific internal resistance10^(14) ΩSpecific surface resistance10^(13) Ω.cmMelting point255 °CThermal expansion3 10^(-5)/KThermal conductivity0.30 W/(K.m)Permanent use temperature-30 ; 120 °CAbsorbability1,7 %Water absorption5,5 %Resistance - oilsresistantAcid resistanceconditionally resistantDurability - alcaliresistant | Tensibility | 5 % |
| Impact toughness50Notched toughness>6 kJ/m²Ball hardness240 N/mm²Friction coefficient0.45Antistatic materialNoPermittivity3.90Electrical strength30 kV/mmSpecific internal resistance10^(14) ΩSpecific surface resistance10^(13) Ω.cmMelting point255 °CThermal expansion3 10^(-5)/KThermal conductivity0.30 W/(K.m)Permanent use temperature-30; 120 °CAbsorbability1,7 %Water absorption5,5 %Resistance - oilsresistantAcid resistanceconditionally resistantDurability - alcaliresistantNoNo | Tensile modulus | 11 000 N/mm ² |
| Notched toughness>6 kJ/m²Ball hardness240 N/mm²Friction coefficient0.45Antistatic materialNoPermittivity3.90Electrical strength30 kV/mmSpecific internal resistance10^(14) ΩSpecific surface resistance10^(14) ΩMelting point255 °CThermal expansion3 10^(-5)/KThermal conductivity0.30 W/(K.m)Permanent use temperature-30 ; 120 °CTransient temperature of use-30 ; 180 °CAbsorbability1,7 %Water absorption5,5 %Resistance - oilsresistantAcid resistanceconditionally resistantDurability - alcaliresistantFood contactNo | Impact toughness | 50 |
| Ball hardness240 N/mm²Friction coefficient0.45Antistatic materialNoPermittivity3.90Electrical strength30 kV/mmSpecific internal resistance10^(14) ΩSpecific surface resistance10^(13) Ω.cmMelting point255 °CThermal expansion3 10^(-5)/KThermal conductivity0.30 W/(K.m)Permanent use temperature-30; 120 °CTransient temperature of use-30; 180 °CAbsorbability1,7 %Water absorption5,5 %Resistance - oilsresistantAcid resistanceconditionally resistantPurability - alcaliresistant | Notched toughness | >6 kJ/m ² |
| Friction coefficient0.45Antistatic materialNoPermittivity3.90Electrical strength30 kV/mmSpecific internal resistance10^(14) ΩSpecific surface resistance10^(13) Ω.cmMelting point255 °CThermal expansion3 10^(-5)/KThermal conductivity0.30 W/(K.m)Permanent use temperature-30 ; 120 °CTransient temperature of use-30 ; 180 °CAbsorbability1,7 %Water absorption5,5 %Resistance - oilsresistantAcid resistanceconditionally resistantFood contactNo | Ball hardness | 240 N/mm ² |
| Antistatic materialNoPermittivity3.90Electrical strength30 kV/mmSpecific internal resistance10^(14) ΩSpecific surface resistance10^(13) Ω.cmMelting point255 °CThermal expansion3 10^(-5)/KThermal conductivity0.30 W/(K.m)Permanent use temperature-30 ; 120 °CTransient temperature of use-30 ; 180 °CAbsorbability1,7 %Water absorption5,5 %Resistance - oilsresistantAcid resistanceconditionally resistantDurability - alcaliresistantFood contactNo | Friction coefficient | 0.45 |
| Permittivity3.90Electrical strength30 kV/mmSpecific internal resistance10^(14) ΩSpecific surface resistance10^(13) Ω.cmMelting point255 °CThermal expansion3 10^(-5)/KThermal conductivity0.30 W/(K.m)Permanent use temperature-30 ; 120 °CTransient temperature of use-30 ; 180 °CAbsorbability1,7 %Water absorption5,5 %Resistance - oilsresistantAcid resistanceconditionally resistantDurability - alcaliresistantFood contactNo | Antistatic material | No |
| Electrical strength30 kV/mmSpecific internal resistance10^(14) ΩSpecific surface resistance10^(13) Ω.cmMelting point255 °CThermal expansion3 10^(-5)/KThermal conductivity0.30 W/(K.m)Permanent use temperature-30 ; 120 °CTransient temperature of use-30 ; 180 °CAbsorbability1,7 %Water absorption5,5 %Resistance - oilsresistantAcid resistanceconditionally resistantDurability - alcaliresistantFood contactNo | Permittivity | 3.90 |
| Specific internal resistance10^(14) ΩSpecific surface resistance10^(13) Ω.cmMelting point255 °CThermal expansion3 10^(-5)/KThermal conductivity0.30 W/(K.m)Permanent use temperature-30 ; 120 °CTransient temperature of use-30 ; 180 °CAbsorbability1,7 %Water absorption5,5 %Resistance - oilsresistantAcid resistanceconditionally resistantDurability - alcaliresistantFood contactNo | Electrical strength | 30 kV/mm |
| Specific surface resistance10^(13) Ω.cmMelting point255 °CThermal expansion3 10^(-5)/KThermal conductivity0.30 W/(K.m)Permanent use temperature-30 ; 120 °CTransient temperature of use-30 ; 180 °CAbsorbability1,7 %Water absorption5,5 %Resistance - oilsresistantAcid resistanceconditionally resistantDurability - alcaliresistantFood contactNo | Specific internal resistance | 10^(14) Ω |
| Melting point255 °CThermal expansion3 10^(-5)/KThermal conductivity0.30 W/(K.m)Permanent use temperature-30 ; 120 °CTransient temperature of use-30 ; 180 °CAbsorbability1,7 %Water absorption5,5 %Resistance - oilsresistantAcid resistanceconditionally resistantDurability - alcaliresistantFood contactNo | Specific surface resistance | 10^(13) Ω.cm |
| Thermal expansion3 10^(-5)/KThermal conductivity0.30 W/(K.m)Permanent use temperature-30 ; 120 °CTransient temperature of use-30 ; 180 °CAbsorbability1,7 %Water absorption5,5 %Resistance - oilsresistantAcid resistanceconditionally resistantDurability - alcaliresistantFood contactNo | Melting point | 255 °C |
| Thermal conductivity0.30 W/(K.m)Permanent use temperature-30 ; 120 °CTransient temperature of use-30 ; 180 °CAbsorbability1,7 %Water absorption5,5 %Resistance - oilsresistantAcid resistanceconditionally resistantDurability - alcaliresistantFood contactNo | Thermal expansion | 3 10^(-5)/K |
| Permanent use temperature Transient temperature of use-30 ; 120 °CAbsorbability-30 ; 180 °CAbsorbability1,7 %Water absorption5,5 %Resistance - oilsresistantAcid resistanceconditionally resistantDurability - alcaliresistantFood contactNo | Thermal conductivity | 0.30 W/(K.m) |
| Transient temperature of use-30 ; 180 °CAbsorbability1,7 %Water absorption5,5 %Resistance - oilsresistantAcid resistanceconditionally resistantDurability - alcaliresistantFood contactNo | Permanent use temperature | -30 ; 120 °C |
| Absorbability1,7 %Water absorption5,5 %Resistance - oilsresistantAcid resistanceconditionally resistantDurability - alcaliresistantFood contactNo | Transient temperature of use | -30;180 °C |
| Water absorption5,5 %Resistance - oilsresistantAcid resistanceconditionally resistantDurability - alcaliresistantFood contactNo | Absorbability | 1,7 % |
| Resistance - oilsresistantAcid resistanceconditionally resistantDurability - alcaliresistantFood contactNo | Water absorption | 5,5 % |
| Acid resistanceconditionally resistantDurability - alcaliresistantFood contactNo | Resistance - oils | resistant |
| Durability - alcaliresistantFood contactNo | Acid resistance | conditionally resistant |
| Food contact No | Durability - alcali | resistant |
| | Food contact | No |

Engineering plastics are supplied in the form of bars, plates, strips, tubes and sheets. From the semi-finished products the company TechPlasty has regularly in stock, we also supply blanks.

All standard and special materials are designed to meet your specific requirements. Their mechanical, thermal, and electrical properties and chemical resistance satisfy the most demanding requirements and this allows them to work even in the most difficult conditions. If you need advice when choosing the appropriate material for your application, please contact us. We'll gladly advise you. You can utilize the long-term experience of our technical advisors free-of- charge, who can visit you right in your operation and solve your requirements for engineering plastics directly at the site of their usage.

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