Tisarbon®
Tisapet®
Tisester®

Tisan

Polyester Solutions

Tisarbon® - Tisapet® - Tisester®

Thermoplastic polyester resins can be compounded with different reinforcements and modifiers to be hard, tough or flexible. The three main resins in this family are polycarbonate (PC), polyethylene terephthalate (PET), and polybutylene terephthalate (PBT). Tisan offers best solutions for polyester based compounds under Tisarbon®, Tisapet® and Tisester® brands. Our engineers formulate the suitable resin with the best modifications due to the application of our customers.

Polycarbonate is a special type of polyesters with a notable stiffness used as engineering plastics. Tisarbon® PC has very high impact resistance even at low temperatures. It is transparent and it has dimensional stability. Tisarbon® PC being a good electrical insulator having heat and flame resistant properties.

Tisapet® PET can be both amorphous and semi-crystalline which affects the visual of the material. Amorphous PET is transparent and it has better ductility but less stiffness and hardness. Semi-crystalline PET is opaque and white which has good strength, ductility, stiffness, and hardness. Both types of PET has good barrier properties against oxygen.

Tisester® PBT is a semi-crystalline, white color which is similar to polyethylene terephthalate (PET) in both composition and properties. PBT has lower strength and stiffness than PET. PBT is a little softer but has higher impact strength and similar chemical resistance. PBT has higher crystallization rate with respect to PET.

Tisarbon®, Tisapet® and Tisester® grades can be provided fully colored in customized colors with narrow color specifications colorability even in light colors.

Main Specifications

Tisarbon® PC

- High thermal stability,
- Dimensional stability,
- High light transmission,
- High impact resistance,
- Excellent mechanical properties,
- Good electrical properties,
- Low moisture,
- Low smoke density for halogen free flame retardant grades,
- Light diffusing and reflective grades,

Tisester® PET

- Excellent level of wear resistance,
- High flexural modulus,
- Low coefficient of friction,
- High stiffness,
- High thermal stability,
- Attractive surface,
- High dimensional stability,
- Higher productivity and total cost-down solutions.
- Low smoke density for halogen free flame retardant grades,

Tisapet® PBT

- Excellent stiffness and hardness,
- Good mechanical strength,
- Good creep and fatigue resistance,
- Very good thermal stability,
- High wear resistance and low friction,
- Good dimensional stability,
- Very good chemical resistance,
- Excellent flow and processing properties,
- Low water absorption,
- Very good surface finish,
- No tendency to form stress cracks,
- High tracing resistance,
- High good sliding properties,
- Excellent heat ageing behavior
- Low smoke density for halogen free flame retardant grades,

Fillers / Reinforcements / Modifiers

- Glass fibers
- Glass beads
- Heat stabilizers
- Hydrolysis stabilizers
- Lubricants
- UV stabilizers,
- Flame retardant compound with halogen and halogen free
  - UL94 V-2 or V-0 classifications (UL approved grades)
  - Glow wire flammability index
  - Glow wire ignition behavior (no flame)

Markets

- Automotive
- Electric & Electronics
- Home appliances
- Construction
- Industrial applications
- Defense industry
- Safety equipment
- Transportation
- Office Furniture
- Sports
- Energy
- Others

T-LAB

1 Mechanical tests	**2** Physical properties	**3** Weathering and aging tests
4 Flammability tests	**5** Color arrangement and measurements	**6** Thermal and flow analysis
7 Heat deflection analysis	**8** Electrical and chemical resistance	**9** Dimensional tests

ISO 9001 · ISO OHSAS 18001 · ISO 14001 · REACH · RoHS COMPLIANT · INTERNATIONAL MATERIAL DATA SYSTEM

Our quality is **your guarantee**

Our product reach reliably the customer having passed all the quality tests in our T-LAB laboratory matching international standards.

More than 40 years **experience**

Tisan Engineering Plastics specialized on production of compounds used as raw materials more than 40 years experience. Tisan produces competitive and favorable solutions to customers based on their requirements. Our aim is to provide competitive solutions, qualified products, flexible production, high-speed service with strong technical infrastructure, human quality competitive solutions in both standard and exclusive products for all markets.

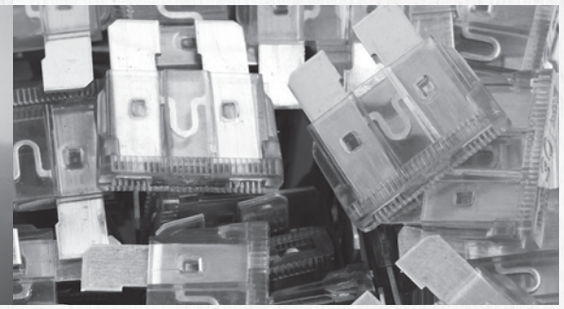
Tisan

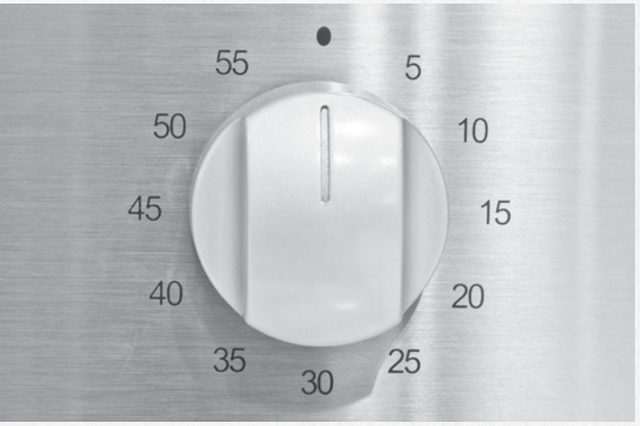
POLYCARBONATE

Tisarbon H 5D03 F01 R01 PC, 5% glass fiber reinforced, flame retardant-halogen	**Tisarbon H 15D03 R01** PC, 15% glass fiber reinforced	**Tisarbon H 30D03 R01** PC, 30% milled glass fiber reinforced	**Tisarbon H UNR K01 K03 R01** PC, unreinforced, UV stabilized, anti-static
Tisarbon H 5D03 R01 PC, 5% glass fiber reinforced	**Tisarbon H 15D11 K02 R02** PC, 15% carbon fiber reinforced, heat stabilized	**Tisarbon H 30D03D11 K14 R01** PC, 30% glass fiber and carbon fiber reinforced, thermal conductive	**Tisarbon H UNR K01 R01** PC, unreinforced, anti-static
Tisarbon H 10D03 F01 K03 R01 PC, 10% glass fiber reinforced, flame retardant-halogen, UV stabilized	**Tisarbon H 15D12 K02 R02** PC, 15% aramid fiber reinforced, heat stabilized	**Tisarbon H 40 D03 R01** PC, 40% glass fiber reinforced	**Tisarbon H UNR K06 R01** PC, unreinforced, hydrolysis stabilized
Tisarbon H 10D03 F01 R01 PC, 10% glass fiber reinforced, flame retardant-halogen	**Tisarbon H 20D03 F02 K03 R01** PC, 20% glass fiber reinforced, flame retardant-halogen free, UV stabilized	**Tisarbon H 40D03 F02 R01** PC, 40% glass fiber reinforced, flame retardant-halogen free	**Tisarbon H UNR K04 R01** PC, unreinforced, impact modified at cold temperature
Tisarbon H 10D03 F02 R01 PC, 10% glass fiber reinforced, flame retardant-halogen free	**Tisarbon H 20D03 F02 R01** PC, 20% glass fiber reinforced, flame retardant-halogen free	**Tisarbon H D15 K02 K14 R01** PC, special filled, heat stabilized, thermal conductive, electrical insulative	**Tisarbon H UNR K08 R01** PC, unreinforced, PTFE modified, low friction, self lubricated
Tisarbon H 10D03 K01 R01 PC, 10% glass fiber reinforced, antistatic	**Tisarbon H 20D03 K04 R01** PC, 20% glass fiber reinforced, impact modified	**Tisarbon H UNR F01 K04 K02 R01** PC, unreinforced, flame retardant-halogen, impact modified, heat stabilized	**Tisarbon H UNR K15 R010** PC, unreinforced, high reflective, opaque, white
Tisarbon H 10D03 K04 R01 PC, 10% glass fiber reinforced, impact modified	**Tisarbon H 20D03 R01** PC, 20% glass fiber reinforced	**Tisarbon H UNR F01 R01** PC, unreinforced, flame retardant-halogen	**Tisarbon H UNR K16 R01** PC, unreinforced, light diffusing, high transparent, low gloss
Tisarbon H 10D03 R01 PC, 10% glass fiber reinforced	**Tisarbon H 25D03 R01** PC, 25% glass fiber reinforced	**Tisarbon H UNR F02 R01** PC, unreinforced, flame retardant-halogen free	**Tisarbon H UNR R01** PC, unreinforced
Tisarbon H 15D03 K03 R01 PC, 15% glass fiber reinforced, UV stabilized	**Tisarbon H 30D03 R01** PC, 30% glass fiber reinforced		

POLYETHYLENE TEREPHTHALATE

Tisapet L 15D03 F01 R01 PET, 15% glass fiber reinforced, flame retardant-halogen	**Tisapet L 33D03 F02 R01** PET, 33% glass fiber reinforced, flame retardant-halogen free	**Tisapet L 15D03 K02 R01** PET, 15% glass fiber reinforced, heat stabilized	**Tisapet L 20D03 F02 K02 R01** PET, 20% glass fiber reinforced, flame retardant-halogen free, heat stabilized
Tisapet L 15D03 K04 R01 PET, 15% glass fiber reinforced, impact modified	**Tisapet L 35D03 F01 R01** PET, 35% glass fiber reinforced, flame retardant-halogen	**Tisapet L 30D03 K02 R01** PET, 30% glass fiber reinforced, heat stabilized	**Tisapet L 30D11 R02** PET, 30% carbon fiber reinforced
Tisapet L 15D03 R01 PET, 15% glass fiber reinforced	**Tisapet L 35D03 R01** PET, 35% glass fiber reinforced	**Tisapet L 35D03 K02 R01** PET, 35% glass fiber reinforced, heat stabilized,	**Tisapet L UNR R01** PET, unreinforced, high clarity
Tisapet L 30D03 F01 R01 PET, 30% glass fiber reinforced, flame retardant-halogen	**Tisapet L UNR F01 R01** PET, unreinforced, flame retardant-halogen	**Tisapet L 30D03 F02 K02 R01** PET, 30% glass fiber reinforced, flame retardand-halogen, heat stabilized	**Tisapet L UNR R01** PET, unreinforced, heat stabilized, platable
Tisapet L 30D03 F02 R01 PET, 30% glass fiber reinforced, flame retardant-halogen free	**Tisapet L UNR K06 R01** PET, unreinforced, hydrolysis stabilized	**Tisapet L UNR R01** PET, unreinforced	

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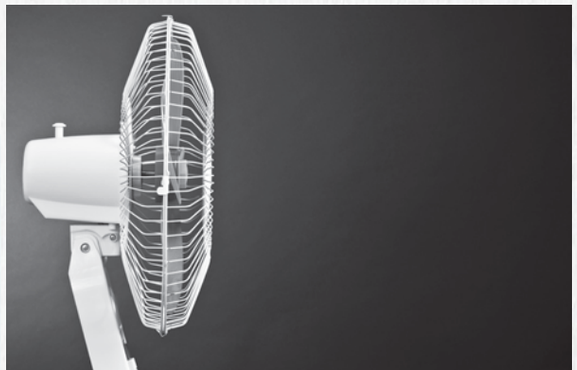

POLYBUTYLENE TEREPHTALATE

Tisester F 10D03 R01 PBT, 10% glass fiber reinforced	**Tisester F 15D03 K08 R01** PBT, 15% glass fiber reinforced, PTFE modified	**Tisester F 20D03 F01 K02 R01** PBT, 20% glass fiber reinforced, flame retardant-halogen, heat stabilized	**Tisester F 30D03 K04 R01** PBT, 30% glass fiber reinforced, impact modified
Tisester F 10D12 K02 R01 PBT, 10% aramid fiber reinforced, heat stabilized	**Tisester F 15D03 R01** PBT, 15% glass fiber reinforced	**Tisester F 20D03 F01 R01** PBT, 20% glass fiber reinforced, flame retardant-halogen	**Tisester F 30D03 K08 R01** PBT, 30% glass fiber reinforced, PTFE modified
Tisester F 12D03 F01 K03 R01 PBT, 12% glass fiber reinforced, flame retardant-halogen, UV stabilized	**Tisester F 15D05 R01** PBT, 15% glass bead reinforced	**Tisester F 20D03 K02 K12 R01** PBT, 20% glass fiber reinforced, heat stabilized, laser markable	**Tisester F 30D03 F01 K02 R02** PBT, 30% glass fiber reinforced, flame retardant-halogen, heat stabilized
Tisester F 12D03 R01 PBT, 12% glass fiber reinforced	**Tisester F 15D11 K08 R02** PBT, 15% carbon fiber reinforced, PTFE modified, electrical conductive	**Tisester F 20D05 R01** PBT, 20% glass bead reinforced	**Tisester F 30D03 F01 K04 R01** PBT, 30% glass fiber reinforced, flame retardant-halogen, impact modified
Tisester F 15D03 F01 R01 PBT, 15% glass fiber reinforced, flame retardant-halogen	**Tisester F 15D12 K08 K02 R01** PBT, 15% aramid fiber reinforced, PTFE modified, heat stabilized	**Tisester F 20D14 K02 R02** PBT, 20% graphite filled, heat stabilized, thermal conductivity	**Tisester F 30D03 F01 R01** PBT, 30% glass fiber reinforced, flame retardant-halogen
Tisester F 15D03 F02 R01 PBT, 15% glass fiber reinfoced, flame retardant-halogen free	**Tisester F UNR K08 R01** PBT, unreinforced, PTFE modified	**Tisester F 25D03 F01 K02 R01** PBT, 25% glass fiber reinforced, flame retardant-halogen, heat stabilized	**Tisester F 30D03 F02 R01** PBT, 30% glass fiber reinforced, flame retardant-halogen free
Tisester F 15D03 K01 K03 R01 PBT, 15% glass fiber reinforced, UV stabilized, anti-static	**Tisester F 15K10 R01** PBT, 15% barium sulphate filled	**Tisester F 25D03 F01 K04 R01** PBT, 25% glass fiber reinforced, flame retardant-halogen, impact modified	**Tisester F 30D03 K03 R01** PBT, 30% glass fiber reinforced, UV stabilized
Tisester F 15D03 K04 R01 PBT, 15% glass fiber reinforced, impact modified	**Tisester F 20D01 F01 R01** PBT, 20% talc filled	**Tisester F 25D03 F01 R01** PBT, 25% glass fiber reinforced, flame retardant-halogen	**Tisester F 30D03 K04 R01** PBT, 30% glass fiber reinforced, impact modified
Tisester F 15D03 K06 K02 K12 R01 PBT, 15% glass fiber reinforced, heat stabilized, hydrolysis stabilized, laser markable	**Tisester F 20D03 K02 R01** PBT, 20% glass fiber reinforced, heat stabilized	**Tisester F 25D03 F02 R01** PBT, 25% glass fiber reinforced, flame retardant-halogen free	**Tisester F 30D03 R01** PBT, 30% glass fiber reinforced
Tisester F 15D03 K06 K02 R01 PBT, 15% glass fiber reinforced, heat stabilized, hydrolysis stabilized	**Tisester F 30D03D01 R01** PBT, 30% glass fiber reinforced and talc filled	**Tisester F 30D03 R01** PBT, 30% glass fiber reinforced	**Tisester F 30D05 R01** PBT, 30% glass bead reinforced
Tisester F 30D11 R02 PBT, 30%carbon fiber reinforced	**Tisester F 45D03 R01** PBT, 45% glass fiber reinforced	**Tisester F UNR F01 K02 R01** PBT, unreinforced, flame retardant-halogen, heat stabilized	**Tisester F UNR K03 R01** PBT, unreinforced, UV stabilized
Tisester F 30D11 K08 R02 PBT, 30% carbon fiber reinforced, PTFE modified	**Tisester F 50D03 R01** PBT, 50% glass fiber reinforced	**Tisester F UNR F01 K04 K02 R01** PBT, unreinforced, flame retardant-halogen, impact modified, heat stabilized	**Tisester F UNR K04 R01** PBT, unreinforced, impact modified
Tisester F 30D11 R01 PBT, 30% carbon fiber reinforced	**Tisester F 7D03 K03 R01** PBT, 7% glass fiber reinforced, UV stabilized	**Tisester F UNR F01 R01** PBT, unreinforced, flame retardant-halogen	**Tisester F UNR K05 R01** PBT, unreinforced, MoS2 modified
Tisester F 35D03 F01 R01 PBT, 35% glass fiber reinforced, flame retardant-halogen	**Tisester F D15 K02 K14 R01** PBT, special filled, heat stabilized, thermal conductive, electrical insulative	**Tisester F UNR K02 K04 R01** PBT, unreinforced, impact modified, heat stabilized	**Tisester F UNR K08 R01** PBT, unreinforced, PTFE modified
Tisester F 40D03 R01 PBT, 40% glass fiber reinforced	**Tisester F UNR K02 R02** PBT, unreinforced, heat stabilized	**Tisester F UNR K03 K04 R01** PBT, unreinforced, UV stabilized, impact modified	**Tisester F UNR R01** PBT, unreinforced
Tisester F 40D13 R01 PBT, 40% barium sulfate filled	**Tisester F UNR K04 R01** PBT, unreinforced, impact modified		

Tisan

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