



SDPPL - SD Polymer Pvt Ltd

TECHNICAL DATA SHEET

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PP-TF (Talc Filled Polypropylene)

Empowering Plastics Through Technology

High Stiffness • Dimensional Stability • Excellent Surface Finish

45+ Years of Excellence in Polymer Compounding

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Product Overview

SDPPL's PP-TF (Talc Filled Polypropylene) compounds are specially formulated to deliver high stiffness, dimensional stability, and excellent surface finish for demanding

automotive and industrial applications. Talc reinforcement provides enhanced mechanical properties while maintaining good processability and cost-effectiveness.

Product Family: PP Compounds

Grade Series: SDPP-TF Series

Applications: Automotive interior/exterior, appliances, industrial components

Certifications: ISO 9001:2015, IATF 16949:2016, ISO 14001:2015

Key Features & Benefits

| Feature | Benefit |
|--------------------------|---|
| High Stiffness | Enhanced structural integrity and dimensional stability |
| Excellent Surface Finish | Smooth appearance with minimal surface defects |
| Low Warpage | Tight tolerances and consistent part geometry |
| Good Heat Resistance | Maintains properties up to 120°C (HDT) |
| Cost-Effective | Optimal balance of performance and economics |
| Easy Processing | Good flow characteristics and fast cycle times |

Product Grades & Specifications

Standard Talc Filled Grades

| Property | Test Method | Unit | PP-TF20 | PP-TF30 | PP-TF40 |
|--|-------------|-------------------|-----------|-----------|-----------|
| Talc Content | Internal | % | 20 | 30 | 40 |
| Tensile Strength | ISO 527 | MPa | 30-34 | 32-36 | 34-38 |
| Tensile Modulus | ISO 527 | MPa | 2800-3200 | 3500-3900 | 4200-4600 |
| Flexural Strength | ISO 178 | MPa | 45-50 | 50-55 | 55-60 |
| Flexural Modulus | ISO 178 | MPa | 2600-3000 | 3300-3700 | 4000-4400 |
| Impact Strength (Notched Izod, 23°C) | ISO 180 | kJ/m ² | 3.0-4.0 | 2.5-3.5 | 2.0-3.0 |
| Heat Deflection Temperature (0.45 MPa) | ISO 75 | °C | 110-115 | 115-120 | 120-125 |
| Melt Flow Index (230°C, 2.16 kg) | ISO 1133 | g/10 min | 25-35 | 20-30 | 15-25 |
| Density | ISO 1183 | g/cm ³ | 1.05-1.08 | 1.10-1.13 | 1.15-1.18 |

High Flow Talc Filled Grades

| Property | Test Method | Unit | PP-TF20HF | PP-TF30HF |
|--|-------------|-------------------|-----------|-----------|
| Talc Content | Internal | % | 20 | 30 |
| Tensile Strength | ISO 527 | MPa | 28-32 | 30-34 |
| Flexural Modulus | ISO 178 | MPa | 2600-3000 | 3300-3700 |
| Impact Strength (Notched Izod, 23°C) | ISO 180 | kJ/m ² | 3.5-4.5 | 3.0-4.0 |
| Heat Deflection Temperature (0.45 MPa) | ISO 75 | °C | 108-113 | 113-118 |
| Melt Flow Index (230°C, 2.16 kg) | ISO 1133 | g/10 min | 40-55 | 35-50 |
| Density | ISO 1183 | g/cm ³ | 1.04-1.07 | 1.09-1.12 |

Note: HF = High Flow grades designed for thin-wall applications and complex geometries

Typical Applications

Automotive Interior:

- Dashboard components and instrument panels
- Door panels and pillar trims
- Console boxes and storage compartments
- Air vent housings and trim parts
- Interior trim and decorative elements

Automotive Exterior:

- Battery covers and underbody shields
- Wheel arch liners and mud guards
- Air duct systems and HVAC components
- Exterior trim and moldings

Industrial & Appliances:

- Appliance housings and structural parts
 - Power tool housings
 - Industrial equipment components
 - Furniture components
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Processing Guidelines

Injection Molding Parameters

| Parameter | Recommended Range | Notes |
|-----------------------------|---------------------|--|
| Drying | Not required* | *If moisture > 0.1%, dry at 80°C for 2 hours |
| Barrel Temperature - Rear | 200-210°C | Gradual temperature increase |
| Barrel Temperature - Middle | 210-220°C | Maintain uniform melt |
| Barrel Temperature - Front | 220-230°C | Optimize flow |
| Nozzle Temperature | 220-230°C | Prevent premature solidification |
| Mold Temperature | 30-50°C | Higher temp improves surface finish |
| Injection Pressure | 60-110 MPa | Adjust based on part geometry |
| Holding Pressure | 40-70% of injection | Optimize for dimensional stability |
| Back Pressure | 5-15 MPa | Ensure melt homogeneity |
| Screw Speed | 50-150 rpm | Avoid excessive shear |

Processing Recommendations

- **Purging:** Use virgin PP or commercial purging compound when switching grades
- **Regrind:** Up to 20-25% regrind can be incorporated without significant property loss

- **Colorants:** Compatible with standard PP masterbatches (1-3% addition)
 - **Mold Design:** Use adequate venting to prevent gas traps; gate thickness should be 50-70% of wall thickness
 - **Cycle Time:** Comparable to unfilled PP; cooling time may be slightly reduced due to higher thermal conductivity
 - **Wear Considerations:** Talc is mildly abrasive; use hardened steel screws and barrels for extended service life
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Quality Control & Testing

Incoming Material Inspection:

- Visual inspection for contamination and color consistency
- Melt flow index verification
- Moisture content check

Process Monitoring:

- Real-time temperature and pressure monitoring
- Cycle time tracking
- Dimensional checks on production parts

Property Testing:

- Mechanical properties per ISO standards (tensile, flexural, impact)
- Thermal properties (HDT, Vicat softening point)
- Rheological properties (MFI, viscosity)
- Appearance and surface quality assessment

Certifications:

- ISO 9001:2015 Quality Management System
 - IATF 16949:2016 Automotive Quality Management
 - ISO 14001:2015 Environmental Management
 - RoHS & REACH Compliance
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Packaging & Storage

Standard Packaging:

- 25 kg polyethylene bags
- 1000 kg (1 MT) big bags / super sacks
- Bulk delivery in tankers (for high-volume customers)

Storage Conditions:

- Store in dry, cool, well-ventilated area
- Keep away from direct sunlight and heat sources
- Temperature: 5-35°C
- Relative Humidity: < 70%
- Shelf Life: 12 months from manufacturing date under proper storage conditions
- Keep bags sealed until use to prevent moisture absorption

Handling:

- Use appropriate material handling equipment
 - Avoid dropping or damaging bags
 - Follow FIFO (First In, First Out) inventory management
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Safety & Environmental Information

Health & Safety:

- PP-TF compounds are thermoplastic materials with low toxicity
- Use standard industrial hygiene practices
- Avoid inhalation of dust during handling
- Ensure adequate ventilation during processing
- Processing fumes should be exhausted

Personal Protective Equipment:

- Safety glasses or face shield

- Dust mask (if dust is generated during handling)
- Heat-resistant gloves (during processing)
- Protective clothing as appropriate

Fire Hazard:

- Combustible material - avoid open flames and ignition sources
- Fire Extinguishing: Water spray, foam, dry chemical, or CO₂
- Decomposition products may include carbon monoxide and carbon dioxide

Environmental:

- Material is recyclable - collect and reprocess production scrap
 - Dispose of waste according to local environmental regulations
 - No hazardous substances under normal use conditions
 - RoHS and REACH compliant
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Technical Support & Custom Solutions

SDPPL offers comprehensive technical support for PP-TF applications:

Services Available:

- Grade selection assistance based on application requirements
- Processing optimization and troubleshooting support
- Custom compound development for specific performance needs
- Color matching and appearance optimization
- Mold flow analysis and part design consultation
- On-site technical support and training
- Failure analysis and quality issue resolution

Custom Formulations: We can develop custom PP-TF grades with:

- Specific talc content (15-50%)
- Modified impact properties

- Enhanced UV stability for outdoor applications
 - Special color requirements
 - Flame retardant variants
 - Conductive or anti-static grades
 - Food contact approved formulations
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Contact Information

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