



# SDPPL - SD Polymer Pvt Ltd

## TECHNICAL DATA SHEET

### Sustainable Polymer Compounds

**Empowering Plastics Through Technology**

*Sustainable Circular Economy Solutions*

**45+ Years of Excellence in Polymer Compounding**

---

## Product Overview

SDPPL's sustainable compounds portfolio represents our commitment to sustainability and circular economy principles. Our advanced sustainable material technology produces high-quality compounds from post-consumer and post-industrial waste streams, delivering performance comparable to virgin materials while significantly reducing environmental impact.

**Sustainable Material Processing Capacity:** 1300 TPM across facilities

**EPR Compliance:** Full support for Extended Producer Responsibility requirements

**Certifications:** ISO 14001:2015, RCS (Recycled Claim Standard), GRS (Global Recycled Standard), ISCC-Plus (International Sustainability and Carbon Certification) certified

---

## Environmental Benefits

| Metric                     | Sustainable vs Virgin Material         |
|----------------------------|----------------------------------------|
| Carbon Footprint Reduction | 40-60% lower CO <sub>2</sub> emissions |
| Energy Consumption         | 50-70% less energy required            |
| Landfill Diversion         | 100% waste diverted from landfills     |
| Water Usage                | 30-50% reduction                       |
| Virgin Material Saved      | 1:1 replacement ratio                  |

---

## Product Portfolio

### 1. Sustainable Polypropylene (S-PP) Compounds

**Grade Series:** SDS-PP Series

**Post-Consumer S-PP (PCS-PP)**

| Property                               | Test Method | Unit              | Standard Grade | Reinforced Grade | Impact Modified |
|----------------------------------------|-------------|-------------------|----------------|------------------|-----------------|
| Sustainable Content                    | Internal    | %                 | 25-100         | 25-100           | 25-100          |
| Tensile Strength                       | ISO 527     | MPa               | 24-28          | 32-36            | 18-22           |
| Flexural Modulus                       | ISO 178     | MPa               | 1200-1400      | 2000-2200        | 800-1000        |
| Impact Strength (Notched Izod, 23°C)   | ISO 180     | kJ/m <sup>2</sup> | 3.0-4.0        | 2.5-3.5          | 10-15           |
| Heat Deflection Temperature (0.45 MPa) | ISO 75      | °C                | 90-100         | 110-120          | 80-90           |
| Melt Flow Index (230°C, 2.16 kg)       | ISO 1133    | g/10 min          | 15-25          | 10-18            | 12-20           |
| Density                                | ISO 1183    | g/cm <sup>3</sup> | 0.90-0.92      | 1.08-1.12        | 0.89-0.91       |

**Source Material:** Post-consumer automotive parts, appliances, packaging

**Applications:** Automotive interior parts, industrial components, consumer goods, crates

### Post-Industrial S-PP (PIS-PP)

| Property                               | Test Method | Unit              | Standard Grade | Talc-Filled | Glass-Filled |
|----------------------------------------|-------------|-------------------|----------------|-------------|--------------|
| Sustainable Content                    | Internal    | %                 | 90-100         | 85-95       | 80-90        |
| Tensile Strength                       | ISO 527     | MPa               | 26-30          | 30-34       | 50-60        |
| Flexural Modulus                       | ISO 178     | MPa               | 1300-1500      | 1900-2100   | 3500-4000    |
| Impact Strength (Notched Izod, 23°C)   | ISO 180     | kJ/m <sup>2</sup> | 3.5-4.5        | 3.0-4.0     | 5.0-6.5      |
| Heat Deflection Temperature (0.45 MPa) | ISO 75      | °C                | 95-105         | 110-120     | 135-145      |
| Melt Flow Index (230°C, 2.16 kg)       | ISO 1133    | g/10 min          | 18-28          | 12-22       | 8-15         |

**Source Material:** Manufacturing scrap, rejected parts, production waste

**Applications:** Automotive components, appliance parts, industrial applications

---

## 2. Sustainable Polyethylene (S-PE) Compounds

**Grade Series:** SDS-PE Series

### R-HDPE (High Density Polyethylene)

| Property                               | Test Method | Unit              | PCR Grade | PIR Grade | Reinforced |
|----------------------------------------|-------------|-------------------|-----------|-----------|------------|
| Sustainable Content                    | Internal    | %                 | 80-100    | 90-100    | 75-90      |
| Tensile Strength                       | ISO 527     | MPa               | 22-26     | 24-28     | 28-32      |
| Flexural Modulus                       | ISO 178     | MPa               | 900-1100  | 1000-1200 | 1400-1600  |
| Impact Strength (Notched Izod, 23°C)   | ISO 180     | kJ/m <sup>2</sup> | 4.0-6.0   | 5.0-7.0   | 3.5-5.0    |
| Heat Deflection Temperature (0.45 MPa) | ISO 75      | °C                | 75-85     | 80-90     | 90-100     |
| Melt Flow Index (190°C, 2.16 kg)       | ISO 1133    | g/10 min          | 8-15      | 10-18     | 6-12       |
| Density                                | ISO 1183    | g/cm <sup>3</sup> | 0.94-0.96 | 0.95-0.97 | 1.00-1.04  |

**Source Material:** Post-consumer bottles, containers, packaging, industrial waste

**Applications:** Packaging, containers, pipes, industrial components

### R-LDPE (Low Density Polyethylene)

| Property                             | Test Method | Unit              | PCR Grade | Film Grade |
|--------------------------------------|-------------|-------------------|-----------|------------|
| Sustainable Content                  | Internal    | %                 | 80-100    | 85-100     |
| Tensile Strength                     | ISO 527     | MPa               | 8-12      | 10-14      |
| Elongation at Break                  | ISO 527     | %                 | 400-600   | 500-700    |
| Impact Strength (Notched Izod, 23°C) | ISO 180     | kJ/m <sup>2</sup> | NB        | NB         |
| Melt Flow Index (190°C, 2.16 kg)     | ISO 1133    | g/10 min          | 1.5-3.0   | 0.5-2.0    |
| Density                              | ISO 1183    | g/cm <sup>3</sup> | 0.91-0.93 | 0.91-0.92  |

**Source Material:** Post-consumer films, bags, agricultural films

**Applications:** Films, bags, flexible packaging, liners

---

### 3. Sustainable Mixed Plastics (R-Mix)

**Grade Series:** SDR-MIX Series

**S-PP/PE Blends**

| Property                               | Test Method | Unit              | 70/30<br>PP/PE | 50/50<br>PP/PE | 30/70<br>PP/PE |
|----------------------------------------|-------------|-------------------|----------------|----------------|----------------|
| Sustainable Content                    | Internal    | %                 | 85-100         | 85-100         | 85-100         |
| Tensile Strength                       | ISO 527     | MPa               | 20-24          | 18-22          | 16-20          |
| Flexural Modulus                       | ISO 178     | MPa               | 1000-1200      | 900-1100       | 800-1000       |
| Impact Strength (Notched Izod, 23°C)   | ISO 180     | kJ/m <sup>2</sup> | 4.0-6.0        | 5.0-7.0        | 6.0-8.0        |
| Heat Deflection Temperature (0.45 MPa) | ISO 75      | °C                | 85-95          | 80-90          | 75-85          |
| Melt Flow Index (230°C, 2.16 kg)       | ISO 1133    | g/10 min          | 12-20          | 10-18          | 8-15           |

**Source Material:** Mixed post-consumer automotive parts, appliances

**Applications:** Non-critical automotive parts, industrial pallets, construction materials

---

### 4. Sustainable Engineering Plastics

**Grade Series:** SDR-ENG Series

**S-ABS (Sustainable ABS)**

| Property                              | Test Method | Unit              | PCR Grade | PIR Grade |
|---------------------------------------|-------------|-------------------|-----------|-----------|
| Sustainable Content                   | Internal    | %                 | 75-95     | 85-100    |
| Tensile Strength                      | ISO 527     | MPa               | 35-40     | 38-43     |
| Flexural Modulus                      | ISO 178     | MPa               | 1800-2000 | 1900-2100 |
| Impact Strength (Notched Izod, 23°C)  | ISO 180     | kJ/m <sup>2</sup> | 15-20     | 18-23     |
| Heat Deflection Temperature (1.8 MPa) | ISO 75      | °C                | 88-94     | 90-96     |
| Melt Flow Index (220°C, 10 kg)        | ISO 1133    | g/10 min          | 18-28     | 15-25     |

**Source Material:** Electronic waste, automotive trim, appliance housings

**Applications:** Consumer electronics, automotive interior, appliances

**S-PC (Sustainable Polycarbonate)**

| Property                              | Test Method | Unit              | PCR Grade | Optical Grade |
|---------------------------------------|-------------|-------------------|-----------|---------------|
| Sustainable Content                   | Internal    | %                 | 70-90     | 50-70         |
| Tensile Strength                      | ISO 527     | MPa               | 55-60     | 58-63         |
| Flexural Modulus                      | ISO 178     | MPa               | 2000-2200 | 2100-2300     |
| Impact Strength (Notched Izod, 23°C)  | ISO 180     | kJ/m <sup>2</sup> | 55-65     | 60-70         |
| Heat Deflection Temperature (1.8 MPa) | ISO 75      | °C                | 125-130   | 128-133       |
| Melt Flow Index (300°C, 1.2 kg)       | ISO 1133    | g/10 min          | 10-16     | 8-14          |

**Source Material:** Optical media (CDs/DVDs), automotive glazing, electronic housings

**Applications:** Automotive parts, electronic housings, construction materials

---

# Sustainable Materials Processing & Quality Control

## Advanced Sustainable Material Technology

1. **Collection & Sorting:** Automated sorting using NIR (Near-Infrared) technology
2. **Cleaning & Washing:** Multi-stage washing to remove contaminants
3. **Size Reduction:** Grinding and shredding to uniform particle size
4. **Extrusion & Filtration:** Melt filtration to remove impurities
5. **Compounding:** Addition of stabilizers, compatibilizers, and reinforcements
6. **Quality Testing:** Comprehensive testing to ensure consistent properties
7. **Pelletizing:** Production of uniform pellets ready for processing

## Quality Assurance

- **Incoming Material Inspection:** Visual and analytical testing of source material
  - **Process Monitoring:** Real-time monitoring of extrusion parameters
  - **Property Testing:** Mechanical, thermal, and rheological testing per ISO standards
  - **Traceability:** Batch tracking from source to finished product
  - **Certification:** Third-party verification of sustainable content (GRS certified)
- 

## EPR Compliance Support

SDPPL provides comprehensive Extended Producer Responsibility (EPR) support:

- **Collection Services:** Nationwide collection network for post-consumer waste
  - **Processing Processing & Recycling Sustainable Materials:** State-of-the-art recycling facilities
  - **Documentation:** Complete audit trail and compliance reporting
  - **Consulting:** EPR strategy development and implementation support
  - **Certification:** Sustainable materials certificates for regulatory compliance
-

# Processing Guidelines

## General Processing Parameters

| Parameter          | S-PP       | S-PE       | S-ABS            | S-PC              |
|--------------------|------------|------------|------------------|-------------------|
| Drying Required    | No*        | No*        | Yes (80°C, 2-3h) | Yes (120°C, 3-4h) |
| Barrel Temperature | 200-230°C  | 180-210°C  | 200-230°C        | 270-290°C         |
| Mold Temperature   | 30-50°C    | 20-40°C    | 50-70°C          | 80-100°C          |
| Injection Pressure | 60-110 MPa | 50-100 MPa | 60-110 MPa       | 80-130 MPa        |

\*Drying recommended if moisture content > 0.1%

## Processing Recommendations

- **Purging:** Use virgin material or commercial purging compound when switching grades
- **Regrind:** Up to 20-30% regrind can be added back without significant property loss
- **Colorants:** Compatible with standard masterbatches
- **Additives:** UV stabilizers recommended for outdoor applications
- **Cycle Time:** Similar to virgin materials

---

## Sustainability Metrics & Certifications

### Carbon Footprint Calculation:

Each ton of sustainable compound saves approximately 1.5-2.5 tons of CO<sub>2</sub> equivalent compared to virgin material production.

### Certifications:

- **RCS (Recycled Claim Standard)** - Verified recycled content tracking and chain of custody
- **GRS (Global Recycled Standard)** - Third-party verified recycled content, environmental and social responsibility

- **ISCC-Plus (International Sustainability and Carbon Certification)** - Sustainable and circular materials certification
  - **ISO 14001:2015** - Environmental Management System
  - **ISO 9001:2015** - Quality Management System
  - **EPR Compliance Certificates** - Government-approved sustainable materials processor
  - **RoHS & REACH Compliant**
- 

## Packaging & Storage

**Standard Packaging:** 25 kg bags, 1000 kg big bags, or bulk delivery

### Storage Conditions:

- Store in dry, cool place away from direct sunlight
- Temperature: 5-35°C
- Relative Humidity: < 70%
- Shelf Life: 12 months from manufacturing date under proper storage

**Note:** Recycled materials may have slightly higher moisture sensitivity. Keep sealed until use.

---

## Safety Information

**Handling:** Use standard industrial hygiene practices. Avoid dust generation.

**Personal Protection:** Safety glasses, dust mask (if dust is generated), gloves recommended.

**Processing:** Ensure adequate ventilation during processing. Some sustainable materials may contain trace contaminants.

**Fire Hazard:** Combustible material. Use water spray, foam, or CO<sub>2</sub> extinguisher.

**Disposal:** Material is sustainable and recyclable. Dispose according to local environmental regulations.

---

## Technical Support & Custom Solutions

SDPPL offers comprehensive support for sustainable compound applications:

- **Grade Selection:** Assistance in selecting optimal sustainable grade
- **Processing Optimization:** On-site support for processing setup
- **Custom Compounding:** Development of custom sustainable formulations
- **EPR Consulting:** Complete EPR compliance strategy and implementation
- **Sustainability Reporting:** Carbon footprint calculations and environmental impact reports

### SDPPL Sustainability & EPR Support

**Contact Person:** Mr. Naveen Mittal

**Email (EPR):** [epr@sdpolymer.in](mailto:epr@sdpolymer.in)

**Email (Sustainability):** [sustainability@sdpolymer.in](mailto:sustainability@sdpolymer.in)

**Phone:** +91-9911143733

**Website:** [www.sdpolymer.in](http://www.sdpolymer.in)

---

## Disclaimer

The information provided in this technical data sheet is based on our current knowledge and experience with sustainable materials. It is intended as a guide only and does not constitute a specification or warranty. Properties may vary depending on source material quality, processing conditions, and application requirements. Due to the nature of sustainable materials, some variation in color and properties between batches may occur. Users should conduct their own tests to determine suitability for specific applications.

**Document Version:** 1.0

**Issue Date:** November 2025

**Supersedes:** New Document

---

**SDPPL - SD Polymer Pvt Ltd**

*Sustainable Polymer Solutions for a Better Tomorrow*

*Committed to Circular Economy & Zero Waste*