PPCO
Co-polymer Polypropylene

Description
A widely used polymer. The ethylene-propylene block copolymers have lower heat distortion temperature, lower clarity, less rigidity than homo-polymer but have greater impact properties. PP can be extensively modified with glass fibres, mineral fillers and thermoplastic rubbers.

Typical Applications
Boxes that have integral hinges, automotive bumpers, instrument panels, pillar and quarter panel trim. Bottle crates, textile bobbins. Talc filled grades have high heat performance and applications include electric kettles.

Types of grade available
Talc filled
Glass coupled grades
Very high impact grades
Flame retardants
High rigidity
Random copolymers giving improved clarity

General Processing
Drying Time N/A
Drying Temperature N/A
Type of Drier N/A
Purging DYNAPURGE D2 OR F
Moisture Absorption 0.2% in 24 hours at room temperature
Other Considerations PPCO offers a wide processing window. Tensile Modulus is an important factor with regard to flexibility and softness. Grades with TM-1000 -1200 are softer higher impact and grades with a TM 1300 – 1750 are becoming more rigid.

Processing Injection Moulding
Barrel Settings 190C to 230C
Injection speed High
Injection Pressure Medium to High
Back Pressure Low
Screw Speed Medium
Tool Temperature 15C to 50C
Melt Temperature 200C to 240C
Processing Stability At a temperature of 260C, residence time no more than 5 or 6 minutes
Gate Considerations Gates used include pin, submarine and edge
Sprue & Runner Use large full round runners and sprues
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**Mechanical Properties**

- Shrinkages: 1.5% to 2%
- Flexural Modulus: 950 – 1750 MPa
- Tensile strength at Yield: 12 – 45 MPa

**Physical Properties**

- Density: 0.905
- Cold Bend: N/A
- Cold Flex: N/A
- Elongation at Break: 6%
- Tensile Modulus: 0.5 – 7 MPa
- General Impact Strength: Good to Excellent
- Material Finish: Glossy shiny finish

**Thermal Properties**

- Vicat Softening Temperature: 70C
- Heat Deflection Temperature: 92C (standard unfilled grade)

**Flammability**

- Flammability Rating: Flame retardant grades available

**Weatherability**

- Suitability for outdoor use: Only if UV stabilised or carbon black grade used

**Fillers & Additives**

- Glass, mineral, TPE, FR and UV

**Chemical Resistance**

- Resistant to: Solvents, acids, alkalis
- Not resistant to: Aromatic and chlorinated hydrocarbons

**Food Contact Status**

- Suitable for food contact
| **Colouring** | As the natural colour of material is a translucent, ivory white, then a wide colour range is possible. Masterbatch is commonly used. Best results given by the use of fully compounded material as dry colours and masterbatches can sometimes give rise to streaking, due to dispersion problems in high impact grades. |
| **REACH & ROHS Compliance** | Contains no hazardous substances |
| **Bonding** | Because of PP’s excellent resistance to solvents the use of solvent based adhesives is limited. |
| **Welding** | Hot plate, shoe, friction and ultrasonic welding methods are often preferred. When hot plate welding PP, it is usual to coat or cover the hot plates with PTFE so as to prevent the material sticking to the surfaces of the hot plate. |

This information has been provided as a general guide and we suggest that you carry out your own specific tests to be sure that this material is suitable for your application.