

***Purell* SP170G**
New Soft PP Copolymer for Healthcare Applications

LyondellBasell Commitment to the Healthcare Industry

- **LyondellBasell (LYB)**
 - Traceability
 - Quality
 - Experience
 - Innovation

- **Dedicated “Purell” portfolio:**
 - Consistency of formulation
 - Continuity of supply
 - Quality consistency
 - Regulatory compliance



LyondellBasell *Purell* Concept

■ ***Purell* Concept is defined in an official Standard Operating Procedure (SOP) at LyondellBasell**

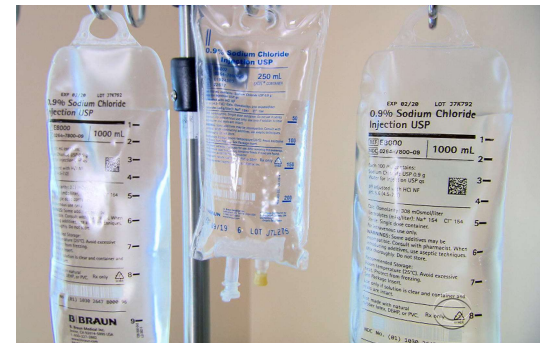
- Consistency in formulation
- Change management and change notification with 2 years pre-warning
- Risk management procedures in place
- Regulatory Support via Portal and dedicated Sales/ADTS Team
- Compliance statements available for the applicable healthcare regulations
- Risk contingency plan: back-up plant and/or safety stock
- Quality Agreement may be considered upon request
- Customer Audits supported
- Special procedures for manufacturing, storage and handling

The *Purell* Concept addresses the requirements of the Medical Grade Plastics (MGP) guideline*

(*) as defined by VDI (Association of German Engineers) - Workgroup Plastics in Medical & Akzept Network

Purell SP170G – New Soft PP Copolymer for Healthcare

- **Purell SP170G is a polypropylene copolymer designed for Extrusion Blow Molding (EBM), Blown Fill & Seal (BFS) and Blown Film conversions**
 - It provides an excellent balance of mechanical (softness, toughness) and optical (transparency) properties, combined with good processability
 - The material can be sterilized in autoclave at 121°C, keeping good aesthetics and mechanical properties after sterilization
 - Its good toughness and optical properties would allow use in full PP multilayer films, enhancing recyclability
- **Typical application areas: BFS IV bottles and ampoules, Blow molded bottles, Film for IV bags, soft components in closures and other medical devices.**



Purell SP170G – New Soft PP Copolymer for Healthcare

Description and Properties

■ Resin Description:

Low fluidity Soft PP copolymer, offering good opticals and mechanical properties

■ Conversion:

Blow Molding, BFS, Blown Film

■ Resin Properties (*):

| | | |
|----------------------------|--------------|------------|
| MFR 230°C/2.16 kg: | 1.5 g/10 min | ISO1133 |
| Tensile modulus: | 600 Mpa | ISO527 |
| Charpy notch. 23°C Impact: | 21 kJ/m | ISO179 |
| Haze (1mm placque): | 22 % | ASTM D1003 |

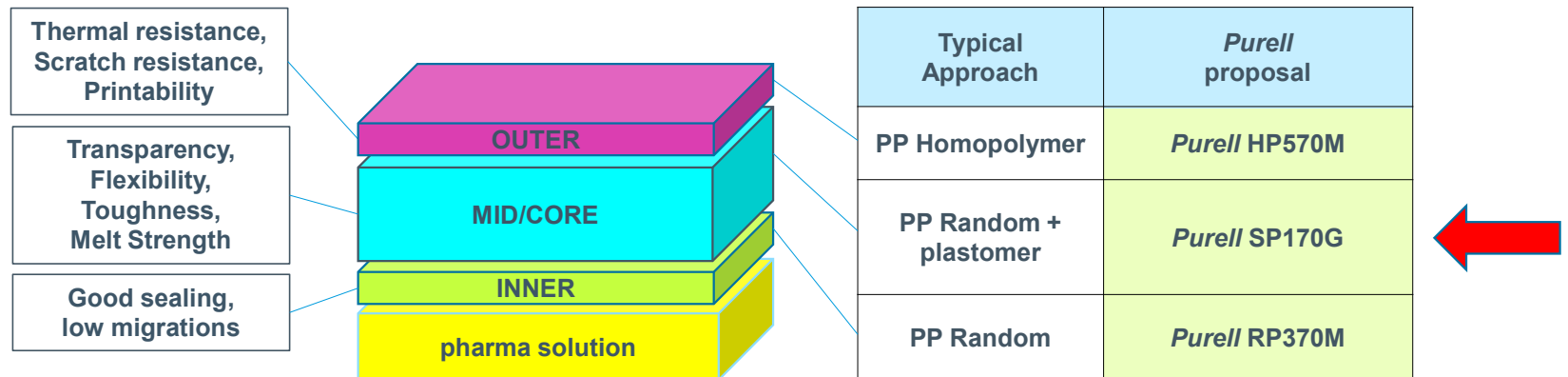
(*) typical property values not to be construed as specification limits

Typical Applications

- BFS IV bottles
- Ampoules
- Film for IV bags
- Caps & closures components
- Other medical device components



Purell SP170G – potential use in Healthcare Film for IV Bags



- **Purell SP170G** provides an excellent balance of mechanical (softness, toughness) and optical (transparency) properties, combined with good processability. It could allow plastomer elimination/reduction, for PP monosolution.
- **Purell RP370M** is a polypropylene random copolymer, with good clarity and softness. It offers excellent sealing properties in film structures. This material does not contain anti-blocking, slip or other internal and surface lubricants.
- **Purell HP570M** is a polypropylene homopolymer. It offers excellent thermal stability and high scratch resistance.

Purell SP170G – Features

Material Characteristics

- Excellent balance of mechanical and optical properties, for Blow molding and Blown film conversions
- Enhanced softness
- Sterilizable in autoclave at 121°C
- Good processability in Blow molding (EBM, BFS) and in Blown Film conversions
- Tailor made additivation package

Regulatory

- Compliance with EP Pharmacopeia (*)
- Compliance with US Pharmacopeia (*)
- US FDA Drug Master File listing (*)
- Regulatory documentation (PSB) available via PSInfo portal
- Non-phthalate based catalyst
- No animal derived components used in the manufacture or formulation of this product

(*) = *analysis in progress*

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Thanks