

Great question! Blown film extrusion is one of the most widely used processes for polypropylene (PP), especially in packaging. Producers like Braskem offer **several homopolymer and random copolymer PP grades** because blown film applications demand different balances of **processability, mechanical strength, optical properties, and end-use performance**. Here's why multiple grades exist:

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## Why Multiple PP Grades Exist in Blown Film Extrusion

### 1. Processing Requirements

- **Melt Flow Index (MFI):**
    - **Low MFI grades** → higher viscosity, better bubble stability, ideal for thicker films and heavy-duty packaging.
    - **High MFI grades** → easier flow, faster throughput, suited for thin films and high-speed extrusion.
  - Blown film extrusion requires **stable bubble formation and uniform thickness**, so different grades are tuned for line speed, film gauge, and cooling conditions.
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### 2. Mechanical Property Needs

- **Homopolymer PP (HOMO):**
    - Provides **high stiffness, tensile strength, and heat resistance**.
    - Multiple grades allow fine-tuning between productivity and mechanical strength.
    - Common in films that need rigidity and dimensional stability (e.g., industrial packaging, lamination base films).
  - **Random Copolymer PP (RACO):**
    - Offers **clarity, gloss, and flexibility**.
    - Different grades balance transparency with mechanical performance.
    - Used in consumer-facing packaging where aesthetics and flexibility matter (e.g., food wraps, medical films).
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### 3. Application Diversity

- **Food packaging films:** Require clarity and heat resistance → random copolymer grades.
- **Industrial packaging (sacks, heavy-duty wraps):** Need stiffness and strength → homopolymer grades.

- **Lamination films:** Require dimensional stability and printability → homopolymer grades.
  - **Consumer packaging (clear bags, wraps):** Require gloss and flexibility → random copolymer grades.
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#### 4. Additive & Performance Packages

- Different grades incorporate **antioxidants, slip agents, antistatic agents, or UV stabilizers** depending on whether the film is for food contact, outdoor use, or industrial packaging.
  - Some grades are optimized for **pigment dispersion** or **recycling compatibility**, which is increasingly important in blown film production.
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### Summary

- **Homopolymer PP grades** → chosen for **rigidity, strength, and dimensional stability**.
  - **Random copolymer PP grades** → chosen for **clarity, gloss, and flexibility**.
  - Multiple grades exist because blown film applications range from **clear food wraps** to **heavy-duty industrial sacks**, each requiring a different balance of **flowability, stiffness, toughness, and optical properties**.
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👉 I can also prepare a **comparison chart of Braskem's blown film PP grades** (melt flow, clarity, tensile strength, typical applications) so you can see how each one is positioned in the portfolio. Would you like me to build that chart?