

Bottles for hot-filling beverages

Other than glass bottles, PET plastic bottles are one of the most popular packaging used in beverage industry. However, PET bottles can only withstand filling temperature up to 60 °C. If your beverage needs to be to be boiled up to higher temperature, PET bottle would not be the perfect option, unless cooling is allowed before filling.

Factors considered when purchasing hot-filled beverage bottles

Rule #1: Costing

To increase the output of production and lower the production cost, we need the production to be:

1. Stable;
2. Fast, and;
3. Cost-effective.

Rule #2: Perspective of Customers

Secondly, when products go into consumer's level, they are required to be:

- **Good looking** that can attract people;
- **User-friendly** (easy to drink);
- **Safe-to-drink** (drink itself & the packing), and;
- **Social Responsible.**



Hot-filled beverage bottles available in the market

There are mainly two type of hot-filled bottles in the market:

- a. PET neck-crystallized bottle
- b. PP bottle

The former is only suitable for filling temperature less than 80°C. If it is required to withstand higher filling temperature, PP bottle would be a better option, withstanding up to 95-120°C.

PP bottles are made by two different production process:

- I. Extrusion Blow Moulding (EBM)
- II. Injection Stretch Blow Moulding (ISBM)



Comparison between EBM & ISBM's bottle

As we already introduced the production process of EBM & ISBM in another article (ISBM Vs EBM), let's focus on the appearance & functional differences.

PP Bottle	Extrusion Blow Moulding EBM	Injection Stretch Blow Moulding ISBM
1. Transparency	Opaque with flow-line	Transparent with NO flow-line
2. Parting Line	Obvious	Almost Invisible
3. Neck Finish	Sharp	Smooth
4. Strength	Less Strong	Strong
5. Bottle Thickness	Thicker but Uneven	Thinner
6. Balance of Bottles	Unstable	Balanced

#1/ Transparency/ Clarity

Stretching in ISBM allows better transparency in bottles! Not only the resin properties and quality, the technique and experience of manufacturers are important in bottle transparency.

PP bottle made by EBM could be very cloudy with flow lines. It may not be very attractive to consumers.



#2/ Neck Finish

In the production process of EBM, the plastic tube is cut into suitable length for moulding. Hence, the edges at the neck and bottom are sharp. Extra processing is required to polish the edges, ensuring safe for drinking. The unpolished cut edge would also possibly cause leakage problem.

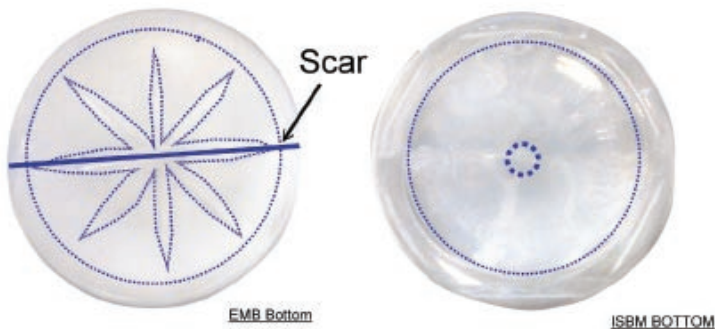
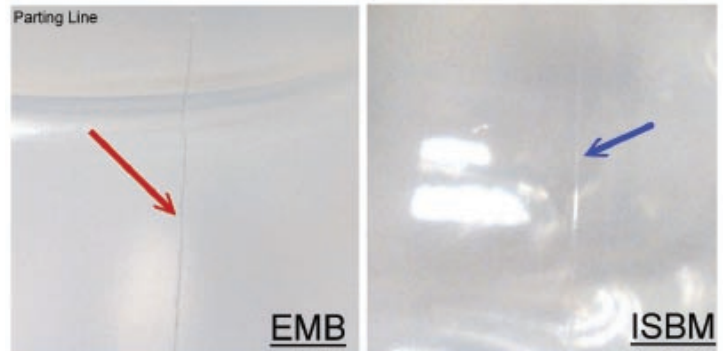
The neck finish of ISBM bottle is made by injection. It is smooth and leakage proof, make it safe for consumers.



#3/ Parting Line

Clamping Process of the mould creates a Parting Line on the bottle surface, which in turn affects the appearance of the bottle.

EBM bottle has obvious parting line generally. Though varies upon mould and machinery, the parting line of ISBM bottle can be almost invisible !



#4/ Bottle Strength

As mentioned, there are sharp edges at the bottom of the EBM bottle. The cutting scar weakens strength of bottle. Upon impact, the weakened point can be cracked easily.

The difference in bottom of ISBM bottles leads to a better strength and tolerance on impact. It performs better in drop test. Loss during transportation can be avoided.

#5/ Bottle Thickness

Without stretching in the production process, EBM bottle has a thick but uneven wall. More materials is required to compensate the uneven distribution.

Stretching is an important part of the ISBM process, which ensures material distribute well and evenly. By ISBM process, 30% of material can be saved in the same bottle. Minimizing wastage provides a cost effective yet Eco-friendly option for your product.

#6/ Balance of Bottles

Balance of a bottle relies on the design of the bottom. The scar in the bottom of EBM leads to poor balance. It may be difficult for the EBM bottles to stand stably.

Concave bottom design in ISBM bottles ensures balance and stability of the bottle. Not only affecting the presentation and appearance of your products, it may even slow down production rate during filling procedure.



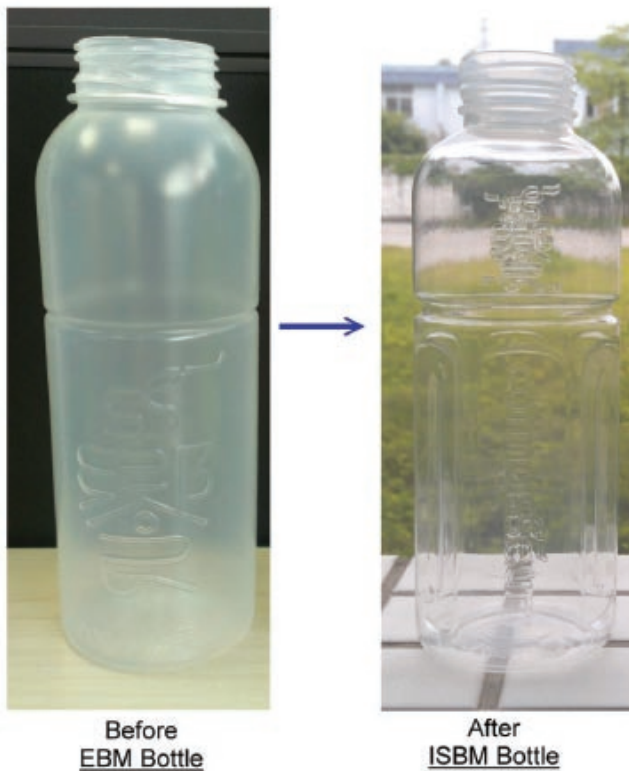
Make your packaging better!

PP Hot-filled Bottle

ISBM PP bottle production are now drawing more attention from the brand owners. It may not be well known in the past. With limitation on the narrow processing window of PP in ISBM process, only very few manufacturers are capable of producing PP ISBM bottle with a stable quality.

With solid foundation and experience, Pack Pro have been developing PP bottle design and production process since 1997! We have been embracing the challenges, working with different resin suppliers for more than 10 years. We have developed the highly transparent PP material for baby feeding & sport bottles made in two-stage ISBM process. Now we are supplying PP bottles to world leading brands for their sport bottle and feeding bottles!

Successful Case Sharing



Features:

- BPA Free
- Leakage Proof
- Light in Weight
- High Transparency
- Smooth Neck Finish
- User Friendly Neck Size
- Withstand High Temperature



For more detail on our product range, please visit our website at: www.pack-pro.com.
You are welcome to email your enquiry to us: info@pack-pro.com !