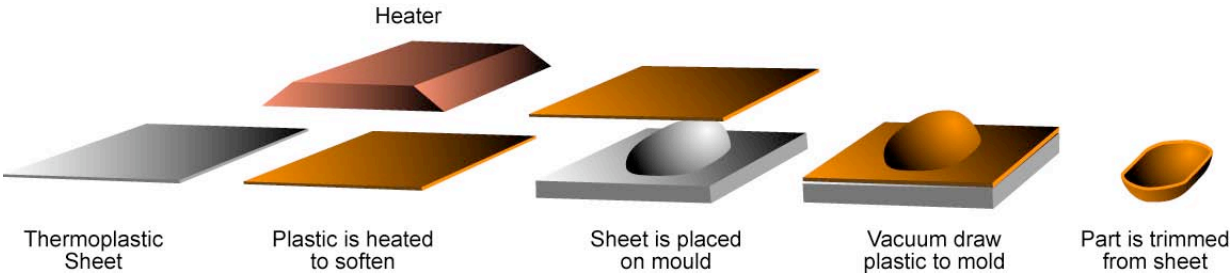
Thermoforming Manufacturing Process

Barrier PP cups and CPET trays are produced using a thermoforming process. In thermoforming, the cups/trays are created by using a vacuum to draw pre-heated plastic over a mould.

There are 2 thermoforming processes undertaken at VisyPak Food Packaging:

- Single stage thermoforming – PP Cups & Trays
- Two stage thermoforming – CPET Trays & Bowls

Single Stage Thermoforming – PP Cups and Trays



Step 1

The PP extruded sheet is heated top and bottom by passing through heating stations. The plastic is heated to a temperature at which the plastic softens but below its melting point.

Step 2

The sheet is clamped over the mould and held in place. The mould is a multi-cavity chilled mould.

Step 3

The cups are formed by the use of a vacuum that removes the air from between the sheet and the mould and presses the sheet hard up against the wall of the mould. We use a plug assist (like a punch) to push the material into the mould before the vacuum starts.

Step 4

After the vacuum is removed the atmospheric pressure combined with the cold mould cools the plastic so that it retains its shape when removed from the mould. Any unused/discarded plastic is re-granulated and recycled back into extrusion process.

Two Stage Thermoforming – PP Cups and Trays

Step 1

The two stage thermoforming process is similar to the single stage process except that the tray or bowl passes through two moulds – one hot (160°C) and one cold.

Step 2

The purpose of the hot mould is to finish heating the CPET to achieve the desired crystallinity. At this stage the tray is still malleable (soft). The transfer to the cold mould locks in the crystallinity and hardens the tray.

VisyCorq Manufacturing Process

VisyCorq is an environmentally friendly sealing membrane uniquely designed to preserve the integrity and flavour of wine.

VisyCorq is an injection moulded thermoplastic cork structure that ensures consistent quality of wine by eliminating the risks of taint, scalping and leakage under a range of storage and transport conditions.

VisyCorq is locally manufactured using a precise injection-moulding process. Measuring stations check each cork to ensure it is within length, diameter and weight specifications as well as density design for optimum gas transmission properties.

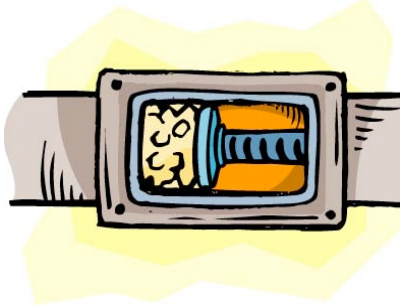
VisyCorq is manufactured from food grade polyethylene.

Step 1

The injection moulding process begins when the resins are loaded into the batching system hoppers. The material is weighed into the blend chamber as per the recipe. It then gets mixed and released into the extruder barrel. The action of the screw rotating, along with the application of heat, causes the plastic to become molten as it moves forward along the extruder.

Step 2

The material moving forward creates enough pressure in front of the screw to force the screw to move backwards. This continues until there is enough material in front of the screw to fill all the cavities. This is called the shot size. The screw is released and acts like a syringe to inject the plastic into a closed, cold mould with multiple cavities.



Step 3

The plastic solidifies within the mould; the mould is opened and the VisyCorqs drop from the mould.