



## Plastic Wine Bottle Caps

Plastic wine bottle caps are a packaging material used to close wine bottles, usually made of plastic materials such as polyethylene (PE) or polypropylene (PP). Their main function is to prevent the leakage of wine and maintain the quality of wine, as well as to facilitate opening and closing.

### Commonly used materials:

- PP (polypropylene): strong temperature resistance ( $-20\sim 120^{\circ}\text{C}$ ), high hardness, low cost, suitable for low-end and middle-end wines.
- PE (polyethylene): good flexibility, good sealing, but weak high temperature resistance ( $\leq 80^{\circ}\text{C}$ ).
- PET (polyester): high transparency, can do color injection molding, mostly used for premixed wine or fruit wine bottle caps.
- Molding process: injection molding (short cycle, high efficiency), can be integrated with anti-counterfeit teeth, pull ring and other structures.

### Types of plastic wine bottle caps:

- Screw caps: commonly used for beer, beverages and certain types of wine, rotate to open and close for a good seal.
- Press caps: open by pressing down, commonly used for fruit juices and soft drinks.
- Anti-theft caps: designed with a safety ring or other mechanism to ensure the bottle is not opened before it is sold.

### Performance of Plastic Wine Bottle Caps:

- Sealability: Relying on elastic gaskets (e.g. silicone), short-term sealing is OK, but long-term aging leads to leakage (especially for high alcohol or aerated wines).
- Pressure resistance: the ultimate pressure is about 0.3-0.5MPa, which is lower than that of aluminum caps ( $\geq 1.2\text{MPa}$ ), and is not suitable for high-pressure scenarios such as champagne.

### Application of Plastic Bottle Caps:

Type of Liquor	Adaptability Analysis
Low alcoholic beverages	Low-alcohol ( $\leq 20\%\text{vol}$ ), non-pressurized beverages such as yellow wine, fruit wine, pre-mixed wine, etc Short-term consumption scenarios (e.g., ready-to-drink packages)
Economical alcohol	Low-cost large circulation products (e.g. some beers, kegs), relying on large-scale production to compress costs.
Disposable packaging	Hotel mini-sets, airline small wine versions, lightweight demand takes precedence over long-term sealing