



Aluminum Plastic Tamper Evident Caps

Aluminum plastic tamper evident caps are usually designed with a multi-layer structure that includes an inner cap, an outer cap, and an opening assembly. This design prevents secondary use by destroying the cap structure (e.g., cutting the tamper-evident portion) when it is opened, and realizes the anti-counterfeiting function.

Some designs also utilize special connecting rods and circular structures to ensure that they cannot be recovered after opening, providing visible signs of opening.

Structural Design of Aluminum Plastic Tamper Evident Caps:

1. Double-layer irreversible opening structure

- Aluminum cover layer: It is made of food-grade aluminum alloy, and the surface can be physically anti-counterfeiting such as laser engraving and roller printing.
- Plastic cover layer: injection molded from polypropylene (PP), with built-in anti-counterfeiting components (e.g. RFID chip slot), fixed to the aluminum cover by 8-12 anti-counterfeiting connecting rods.
- Opening Mechanism: When the plastic cover is rotated, the connecting rod breaks at the preset break point, and the plastic cover is permanently separated from the aluminum cover, forming an opening gap of about 1-2mm wide.

2. Anti-counterfeit section cutting system

- Laser micro-engraved anti-counterfeiting ring: located on the top of the aluminum cap, engraved with brand micro-text (height $\leq 0.2\text{mm}$).
- Automatic destruction when opening: the plastic cover rotates to drive the cutting head, splitting the anti-counterfeiting ring in two, with the fracture surface showing a unique serrated shape.

Application Areas of Aluminum Plastic Tamper Evident Caps:

- High-end beverages: liquor, wine, imported beverages.
- Pharmaceutical industry: anti-tampering drug packaging.
- Cosmetics: high-grade skin care products, perfume bottle sealing.

Advantages of Aluminum Plastic Tamper Evident Caps:

- Strong anti-counterfeiting: multiple technologies overlap, high difficulty in imitation.
- Excellent sealing: Plastic pads and aluminum caps closely match to extend shelf life.
- Brand value-added: exquisite appearance enhances the product grade.