

## Cap Material & Liner Descriptions

### Cap Material

#### **Thermoset or Phenolic (Bakelite)**

These caps are known for providing the widest range of chemical compatibility and for being the most temperature tolerant of plastic closures. They also provide the most consistent adherence to close dimensional tolerances. Ideal for pharmaceutical applications. Thermoset closures cannot be remelted after they are formed. Common resins include urea, phenolic, and melamine.

#### **Metal**

Metal caps offer the widest range of temperature tolerances and are very resistant to fracture from impact. Metal caps are great for industrial and food applications. A metal closure is manufactured from either steel (coated with anti-corrosive coating of either chromeplate or tinplate) or aluminum.

#### **Polypropylene (Thermoplastic)**

Polypropylene caps are known for good impact strength, cost effectiveness, and pliability. They can be remelted after they are formed.

### Liner Material

#### **F217 & PTFE Lined Caps**

Foam backed PTFE liners resist attack from virtually all chemicals at room temperature and provides resilience for a tight seal with a low moisture transmission rate. F217 has a low density foam core between two solid layers of LDPE. Uses include: Analytical lab samples, high purity chemicals, strong acids, solvents, environmental samples, pharmaceuticals, and diagnostic reagents. The color green easily identifies the PTFE liner system. Available in Thermoset and Phenolic caps.

#### **Pulp/Vinyl Lined Caps**

Phenolic caps with pulp and vinyl liners are perfect for general use. The liner is made of a vinyl coating applied to high density polyethylene coated paper and then it is laminated to pulpboard. This general purpose liner is commonly used for food, beverage, medical and chemical applications packed at less than 120° F., including mild acids, alkalis, solvents, alcohols, oils and aqueous products; not recommended for active hydrocarbons or bleaches. Available in Phenolic caps.

#### **PolyCone Lined Caps**

These caps form an exceptionally tight seal and offer a good chemical barrier. This liner molds itself around the sealing areas of the finish as the cap is screwed on, virtually eliminating leakage, evaporation, contamination, binding and backing off. Great for everything from liquids, to soaps, to macro-invertebrates. Available in Phenolic caps.

#### **Rubber Lined Caps**

Black phenolic caps with rubber liners are autoclavable. This liner is FDA approved for food and pharmaceutical applications. Excellent properties of resilience, resistance to moisture vapor and relatively low gas transmission. Also widely used for packaging injectables. Great for culture work. They also provide the most consistent adherence to close dimensional tolerances. Available in Phenolic caps.

#### **Rubber Backed/PTFE Faced Caps**

Designed for the ultimate in product safety. Autoclavable PTFE provides totally inert inner seal and surface facing the sample or product.

#### **.030 Solid Polyethylene Lined Caps**

Caps with solid PE liners offer good chemical resistance and low moisture vapor transmission rate and is great for nail polish remover and higher concentration acids & alkalis. Good for non-oil products filled at room temperature. Because this lining system is paperless, your samples will not be contaminated with fiber or paper particles from the

closure. Available in Phenolic caps.

#### **Aluminum Foil Lined Caps**

These caps are typically used for food applications. Free of odor and taste problems. Also can be used for non-acid, non-alkaline products. Great for organic solvents, chrome cleaners, brake fluids and mineral oils. Available in Phenolic and Metal caps.

#### **Tin Foil Lined Caps**

These caps offer good chemical resistance and are typically used with solids and powders. Good resistance to hydrocarbons, alcohols, ketones and oils. Not recommended for acids and alkalis. Available in Phenolic caps.

#### **SturdeeSeal® PE Foam Lined Caps**

These polypropylene caps have excellent sealing characteristics and offer good chemical resistance including acids, alcohols, alkalis, aqueous products, cosmetics, and household oils.

#### **F422 HDPE Foam Lined Caps**

Also called Acid Caps, these polypropylene caps are acid resistant. This F422 liner is comprised of a .38" LDPE core sandwiched between identical layers of .002" - .003" virgin HDPE.

#### **Unlined Caps**

Unlined polypropylene closures are available in white or black. These caps are autoclavable and are suitable for many dry products.

#### **Plastisol Lined Caps**

Metal caps with a Plastisol liner offer excellent resistance to mild acids as in food products. Permits "hot fill" operations to effectively produce a vacuum seal.

#### **Pulp/Polyethylene Lined Caps**

These metal caps are a great general purpose closure. They are ideal for powders and non-acidic food products and consumer products such as jar candles and honey.

Information provided courtesy of Qorpak®