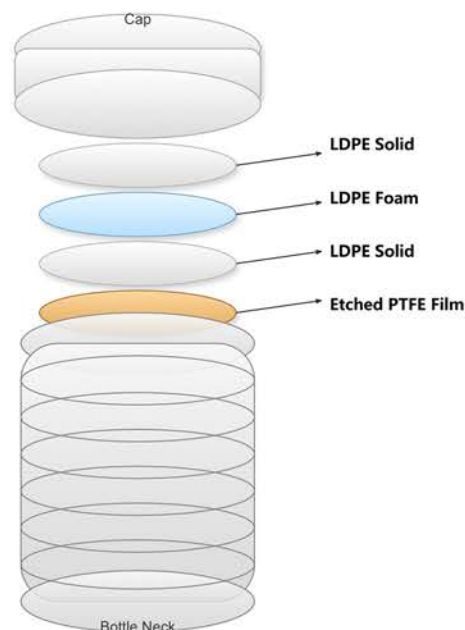


PTFE Film Composite Cap Liner Structure



PTFE/PE Composite

PTFE/PE Composite Film: High-Performance Cap and Container Sealing Solutions

In critical packaging applications, where integrity, safety, and reliability are paramount, sealing materials must withstand chemical exposure, extreme temperatures, and repeated stress. **ESONE PTFE/PE Composite Film**, particularly the PTFE/LDPE laminated series, are engineered to deliver outstanding performance in these demanding environments. By combining the superior chemical resistance of polytetrafluoroethylene (PTFE) with the compressibility of polyethylene (PE) foam, these laminates provide a dependable sealing solution for pharmaceutical, food, beverage, and industrial markets.

Product Structure

The PTFE/PE laminated series consists of a **skived PTFE film laminated to PE foam and solid PE backings**, available in a range of thicknesses.

This dual-layer design leverages the inert and durable characteristics of PTFE film with the cushioning properties of a foam backing to ensure both chemical protection and mechanical sealing.

Studies and reviews in packaging science and polymer materials consistently highlight PTFE as one of the most chemically inert and thermally durable polymers, making it well-suited for specialized sealing applications. When combined with a foam backing, PTFE-based composites not only improve sealing performance but also extend container life by preventing leaks and contamination. Compared to single-material liners, PTFE/foam laminates offer superior sealing reliability under mechanical stress and diverse environmental conditions.



Key Advantages

- **Thermal Stability:** The laminates retain sealing integrity under fluctuating temperatures, making them suitable for sterilization cycles and hot or cold storage conditions.
- **Chemical Resistance:** PTFE is renowned for its non-reactivity with a wide spectrum of acids, bases, solvents, and high-purity water. This ensures long-lasting compatibility for sensitive formulations.
- **Sterilization Compatibility:** ESONE products can be sterilized using Ethylene Oxide (EtO) or autoclave methods, supporting pharmaceutical and biological applications.
- **Regulatory Compliance:** Selected versions comply with EU 10/2011 and FDA 21 CFR 177.1550 standards, making them suitable for direct food and drug contact. All laminates are free from PFOA.
- **Compression and Torsional Sealing:** The foam backing provides excellent compression recovery, enabling tight, consistent seals in threaded closures.

Applications

- **Food and Beverage:** Safe for beverages, flavorings, and consumables requiring tight closures and compliance with regulatory standards.
- **Pharmaceutical and Biotech:** Ideal for high-purity water storage, diagnostic reagents, and liquid formulations where sterility and chemical resistance are essential.
- **Industrial and Household Chemicals:** Effective for sealing acidic, alkaline, or solvent-based chemicals, ensuring product safety and user confidence.

PTFE/Silicone Composite Film Properties

Model Name	Film Thickness mm(mil)	Foam Thickness mm(mil)	Peel Adhesion g/cm(oz/in)	Color	Description
ESLAM CSS1	0.06(2.5)	1.3(52)	500 (45)	White	PTFE Film/ LDPE Solid/ LDPE Foam
ESLAM CSS2	0.13(5)	1.0(40)	500 (45)	White	PTFE Film/ LDPE Solid/ LDPE Foam
ESLAM CSS3	0.13(5)	1.3(52)	500 (45)	White	PTFE Film/ LDPE Solid/ LDPE Foam
ESLAM CSS4	0.25(10)	1.0(40)	500 (45)	White	PTFE Film/ LDPE Solid/ LDPE Foam



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