

Choosing the best film for your gas sampling needs

Film	Unique Properties	Advantages	Limitations
ALTEF	 Developed specifically for gas sampling applications Chemically inert to most acids, aliphatic and aromatic organic compounds, chlorinated solvents, and alcohols Max. operating temp: 302°F <i>ALTEF</i> bags are made of .003" thick film vs. competitor's bags of .002" thick 	 Economical Readily available Suitable for sampling VOC's and sulfur compounds Low VOC background Longer sample storage times than most other bag materials Does not exhibit background levels of DMAC or phenol, as Tedlar[®] does 	 More permeable than Tedlar[®] (.003" thickness is recommended versus .002" for Tedlar[®]) Not suitable for sampling ketones and esters in high concentrations (>30%) Lower resistance to UV light than Tedlar[®]
Multi-Layer Foil	 Multiple layers provide low permeability and a moisture barrier Opaqueness protects samples from ultraviolet light 	 The only bag material that adequately holds H₂S for long pe- riods (>5 to 7 days) Ideal for collecting low molecular weight compounds Sample stability for up to 5 days for most compounds Good VOC stability Readily available 	Not suitable for collecting low ppm to high ppb VOC's
Tedlar [®]	 Low gas permeation levels High tensile strength Continuous temperature range from –98°F to 225°F Unaffected by the chemical components of gases commonly sampled, like carbon monoxide, sulfur dioxide, hydrogen sulfide, radon and mercaptons 	 Less permeable than FEP, PFA and TFM Bags resist puncture in the field Less expensive than FEP and PFA film Recommended in many EPA testing methods 	 Exhibits background levels of DMAC and phenol Not readily available Substantial recent price increases due to global shortage
FEP	One of the most chemically inert materials available for making gas sampling bags	 Works well in extreme temperatures ranging from -400°F to 400°F; allowing it to be used in all stack sampling conditions Heavier gauge (.005") film is resistant to most severe corrosives as well as tolerates applications involving rough handling or difficult service conditions Less expensive than PFA Readily available 	 Poor storage stability for most VOC's and sulfur compounds More permeable than Tedlar[®], <i>ALTEF</i>, and Multi-Layer Foil bags More expensive than Tedlar[®], <i>ALTEF</i>, Multi-Layer Foil bags
PFA	 Highest purity, most chemically inert film available for making gas sampling bags Widest temperature range; from -420°F to 500°F 	 Not affected by the most corrosive chemicals, such as HF, Nitric, HCL and Sulfuric Acids Readily available 	 The most expensive film option for gas sampling bags Much more permeable than Tedlar[®]

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