

CHOOSING THE BEST FILM FOR YOUR GAS SAMPLING BAG NEEDS

	PROPERTIES	ADVANTAGES	LIMITATIONS
TEDLAR®	<ul style="list-style-type: none"> • Low gas permeation levels – Most gases • High tensile strength • Withstands temperatures up to 400°F • Unaffected by the chemical components of gases commonly sampled, like carbon monoxide, sulfur dioxide, hydrogen sulfide, radon and mercaptans 	<ul style="list-style-type: none"> • Less permeable than FEP, PFA and TFM • Bags resist puncture in the field • Less expensive than FEP, PFA, TFM film • Recommended in many EPA testing methods 	<ul style="list-style-type: none"> • Exhibits background levels of DMAC and phenol • High permeation rate for CO₂ • Relatively high permeation rate for O₂
ALTEF	<ul style="list-style-type: none"> • Developed specifically for gas sampling applications • Chemically inert to most acids, aliphatic and aromatic organic compounds, chlorinated solvents, and alcohols • Max. operating temp: 260°F • ALTEF bags are made of .003" thick film 	<ul style="list-style-type: none"> • Suitable for sampling most VOC's and many 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 • Lower permeability than Tedlar® to CO₂, N₂, CH₄ • Superior resistance to solvents 	<ul style="list-style-type: none"> • More permeable to most compounds than Tedlar® (.003" thick versus .002" for Tedlar® Bags) • Not suitable for sampling ketones and esters in high concentrations (>30%) • Less resistance to UV light than Tedlar® • Many sulfur compounds should be analyzed within 24 hours. • More expensive than Tedlar®
MULTI-LAYER FOIL	<ul style="list-style-type: none"> • Ideal for collecting low molecular weight compounds such as: CH₄, H₂S, CO, CO₂ • Foil layers provide very low permeability and complete moisture barrier • Maximum operating temperature: 190°F • Opaqueness protects samples from ultraviolet light 	<ul style="list-style-type: none"> • The only bag material that adequately holds H₂S for long periods (>5 to 7 days) • Ideal for collecting low molecular weight compounds • Sample stability for up to 5 days for most compounds • Very low permeability to O₂, CO₂ • Good VOC stability • Less expensive than Tedlar® and ALTEF 	<ul style="list-style-type: none"> • Not recommended for collecting low ppm to high ppb VOC's due to background levels from bag materials • Recommend analyzing within 48 hours after collection for methane, hydrogen sulfide, carbon monoxide and carbon dioxide
FEP	<ul style="list-style-type: none"> • One of the most chemically inert materials available for making gas sampling bags • Maximum operating temperature: 400°F • Virtually transparent 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • Poor long term storage stability for most VOC's and sulfur compounds • Much more permeable than Tedlar®, ALTEF, and Multi-Layer Foil bags • More expensive than Tedlar®, ALTEF, Multi-Layer Foil and TFM bags • Lower tensile strength than Tedlar®
PFA	<ul style="list-style-type: none"> • Highest purity, most chemically inert film available for making gas sampling bags • Wide temperature range; from -420°F to 500°F 	<ul style="list-style-type: none"> • Not affected by the most corrosive chemicals, such as HF, Nitric, HCL and Sulfuric Acids • Withstands temperatures from -400°F to 500°F 	<ul style="list-style-type: none"> • Poor long term storage stability for most VOC's and sulfur compounds • The most expensive film option for gas sampling bags • Much more permeable than Tedlar®
TFM	<ul style="list-style-type: none"> • High purity, flexible, low permeation versus FEP and PFA • Translucent • Wide temperature range; from -328°F to 500°F 	<ul style="list-style-type: none"> • Non-stick, easy to clean • Not affected by the most corrosive chemicals, such as HF, Nitric, HCL and Sulfuric Acids • Sample stability for 4 to 5 days for most compounds • Smooth surface • Withstands temperatures from -400°F to 500°F 	<ul style="list-style-type: none"> • Expensive • Tears easily • Low tensile strength • More permeable than Tedlar®, ALTEF, and Multi-Layer foil bags