

## Comparison: Liquids Sampling Technologies

Technology:	Sample Transfer Stripper ( ASI Membrane Technologies)	Stripping Column / Sparger	Gas Chromatography
	Model 204	Flame Ionization Detector or similar	Injection valves
Principles incorporated	Henry's Law & proprietary methods	Henry's Law	Absorption
Maintenance requirements	<b>✓ LOW</b> STS Membrane creates ultra-clean sample for detector & physically blocks liquids from passing through to detector. Clean only one to two times per year typical	<b>✗ HIGH</b> Plagued by frequent liquid "carry-overs". No physical block to prevent liquids from contaminating detector and gas sample lines. User reported constant cleaning & upkeep	<b>✗ HIGH</b> Column fouling common occurrence with liquid measurements. Requires high upkeep and cleaning
Moving parts	<b>✓ NONE</b> No moving parts	<b>✗ HIGH</b> Complicated system using 85% more parts than STS Membrane	<b>✗ HIGH</b> User reported frequent fouling of chromatograph injection valves
Cost of ownership	<b>✓ Cost-Effective</b> Minimal maintenance means less cost over time	<b>✗ HIGH</b> High long term cost due to constant cleaning/maintenance requirements	<b>✗ HIGH</b> High long term cost due to constant cleaning/maintenance requirements and fuel
Accuracy	<b>✓ HIGH</b> STS creates ultra-clean sample for analysis	<b>✗ LOW</b> As system contamination occurs, accuracy drops significantly	<b>✗ LOW</b> As system contamination occurs, accuracy drops significantly
Versatility	<b>✓ YES</b> STS maintains accuracy by preventing liquid carry-over. Calibrations maintains stability over long term	<b>✗ NO</b> System fouls as liquids frequently pass through to detector and gas sample lines requiring frequent cleaning	<b>✗ NO</b> Injection valves foul requiring replacement
Range	<b>✓ PPB, PPM and up to 100% ranges with high precision</b>	<b>✗ Low ppm ranges not reliable</b>	Wide range ability but fouling reduces ability over time
Consumables	<b>✓ LOW</b> Carrier Gas/Air only. Calibrations not required.	<b>✗ HIGH</b> Requires Carrier Gas (Nitrogen), Hydrogen fuel (for FID) and Cal Gas	<b>✗ HIGH</b> Requires Carrier Gas (Nitrogen), Hydrogen fuel (for FID) and Cal Gas
Safety	<b>✓ SAFE</b> Closed loop system for analysis and cleaning. No sample exposure to user	<b>✗ CAUTION</b> User potentially exposed to residual sample when cleaning is required	<b>✗ CAUTION</b> User potentially exposed to residual sample when cleaning is required

NOTE: Data listed is typical and may vary based on manufacturer.