

Comparison: H₂S in Liquids Sampling Technologies

Sampling Technology:	Sample Transfer Stripper (STS) with exclusive <i>ASI Membrane Technologies</i>	Headspace stripping column	Gas Chromatography	"Can Test" Method
Principles incorporated	Henry's Law & proprietary methods	Henry's Law	Absorption	Henry's Law
Maintenance requirements	✓ LOW 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	✗ HIGH Plagued by frequent liquid "carry-overs". No physical block to prevent liquids from contaminating detector and gas sample lines. User reported constant cleaning & upkeep	✗ HIGH Column fouling common occurrence with liquid measurements. Requires high upkeep and cleaning	✗ HIGH Must clean equipment before each measurement
Moving parts	✓ NONE No moving parts	✗ HIGH Complicated system using 85% more parts than STS Membrane	✗ HIGH Chromatograph injection valves	Hand operated with Stain Tubes
Cost of ownership	✓ Cost-Effective Minimal maintenance means less cost over time	✗ HIGH High long term cost due to constant cleaning & maintenance requirements	✗ HIGH High long term cost due to cleaning requirements	✓ Cost-Effective
Accuracy	✓ HIGH STS creates ultra-clean sample for analysis	✗ LOW As system contamination occurs, accuracy drops significantly	✗ LOW As system contamination occurs, accuracy drops significantly	Dependent on Stain Tubes: typical ± 10-25% of full scale range of tube
Versatility	✓ YES STS maintains accuracy by preventing liquid carry-over	✗ NO System fouls as liquids frequently pass through to detector and gas sample lines requiring frequent cleaning	✗ NO System fouls requiring frequent cleaning	✗ NO Online analysis not possible
Range	✓ PPB, PPM and up to 100% ranges with high precision	✗ Low ppm ranges not reliable	Wide range ability but fouling reduces ability over time	✗ Low ppm ranges not reliable
Consumables	✓ LOW Carrier Gas/Air only	✗ HIGH Requires Carrier Gas (Nitrogen), Zero Gas and Span Gas (for calibrations)	✗ Membrane separator/ Scrubber (Copper nanoparticle) replaced every year	Minimal
Safety	✓ SAFE Closed loop system for analysis and cleaning. No H ₂ S exposure to user	✗ CAUTION User potentially exposed to residual H ₂ S when cleaning is required	✗ CAUTION User potentially exposed to residual H ₂ S when cleaning is required	✗ CAUTION User exposed to H ₂ S when analysis is performed

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