

Dynamic generation of gas standards from liquids.

ISO 6145-7 COMPLIANT

NIST-TRACEABLE



% → ppb

CONCENTRATION RANGE

UP TO 10^8

DILUTION FACTOR (WITH CASCADE)

±2%

SETPPOINT ACCURACY

UP TO 2

LIQUID CHANNELS

UP TO 4

GAS CHANNELS

Why NEPHOS



On-demand generation.

Stable, reactive or non-commercial standards, made in-house.



One standard, any concentration

A single high-grade standard diluted to any concentration on demand.



Lower uncertainty

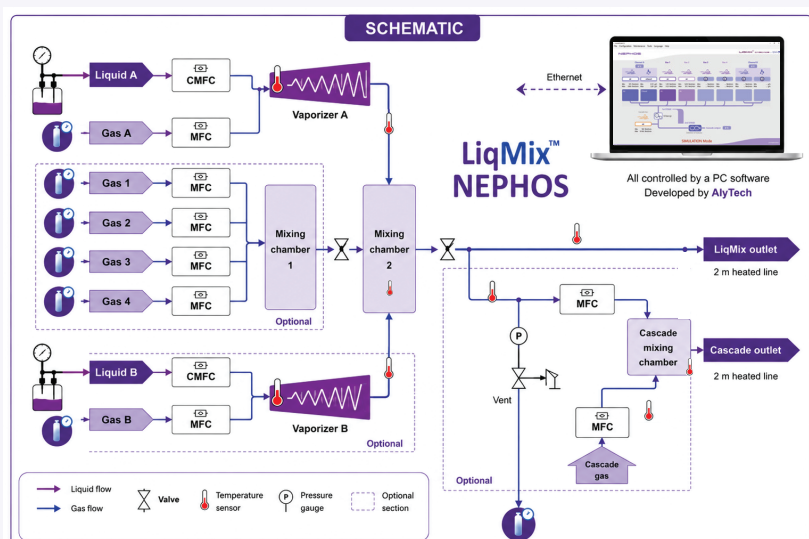
Far lower uncertainty than gravimetric low-level cylinders.



Audit-ready by design

ISO 6145-7, automatic uncertainty, Audit Trail and certificates.

How it works



Liquid standards and gases are precisely vaporized, mixed and delivered to your analyzer, fully automated and traceable.

1 Vaporize

A liquid flow controlled by a Coriolis flowmeter is nebulized into a carrier gas. The mixed fluid enters a heated, temperature-controlled mixing and evaporation chamber, where the liquid evaporates fully and instantly to generate a homogeneous vapor and gas mixture.

2 Mix and dilute

Up to four gas channels, and optionally a second vaporized liquid, combine in the controlled stream to reach the target concentrations.

3 Deliver and document

Heated transfer lines maintain the gas phase to the point of delivery, and each sequence is documented with a certificate on generated concentrations.



Applications



Biogas & Siloxanes

Siloxane standards (D4, D5) for biogas and landfill gas monitoring.



Filter & Sensor Testing

Repeatable challenge concentrations for filter and sensor validation.



Trace VOC & Research

Trace VOC standards down to ppb for method development



Aggressive Gases

Reactive and corrosive compounds, generated fresh for each run.

Powered by AlySoft

NEPHOS is driven by AlySoft, the dedicated software shared across the LiqMix™ and GasMix™ range. It controls every device, computes all flows and uncertainties (even for complex multi-compound mixtures), and automates the entire process, freeing significant operator time.



Automated sequences

Build, store, and run multi-step mixing and dilution sequences.



Uncertainty per point

Automatic calculation of flow rates and concentration uncertainties.



Instrument sync

Synchronization with GC, spectrometers, analyzers, and related instruments.



Audit & certificates

Audit trail, certificate generation, and QA/QC-ready documentation.

Technical specifications

LIQUID HANDLING

Liquid channels	1 or 2 (simultaneous mixing of 2 liquid channels)
Vaporizer	Up to 120g/h & 200°C
Compatible liquids	Pure liquids or mixtures (water, VOC, organic solvents, alcohols, siloxanes ...) free of particles, polymerization traces or salt formation

GAS HANDLING

Gas channels	1 to 4
Gas inlet pressure	Between 3 and 8 bar(g)
Gas compatibility	Pure gases, concentrated mixtures, aggressive and reactive gases, with some exceptions (contact AlyTech or its representative for confirmation)
Outlet pressure	Atmospheric up to 7 bar(g)

CONSTRUCTION & DELIVERY

Wetted parts	Inert-treated 316 stainless tubing, Kalrez® seals
Heated outlet line	2 m standard; other lengths available
Connectors	Swagelok 1/8" (different size on request)

PERFORMANCE

Dilution factor	Up to 10 ⁴ (up to 10 ⁸ with the cascade option)
Concentration accuracy	± 2% of setpoint *
Concentration repeatability	< 0.2% of setpoint *
Concentration range	From % down to ppb
Calibration traceability	NIST-traceable factory calibration for MFC

CONTROL & UTILITIES

Control software	AlySoft on PC with Windows 10 or higher; Ethernet
Analyzer synchronization	GC, µGC, spectrometers, preconcentrators, gas analyzers or any other third-party instrument
Power supply	100–240 VAC, 1.5–4 A, 50–60 Hz
Dimensions / Weight	50 × 47 × 58 cm (L × W × H) / 25–40 kg

* Valid when MFC operate between 10% and 100% of full-scale flow. Depending on configuration.

LIQMIX™ NEPHOS · liquid-to-gas standard generation with full traceability

For a configuration proposal or technical discussion, please provide your target compounds, concentrations and analyzers, and our application specialists will specify the appropriate NEPHOS for your requirements.