

What's in Your Fab Air?

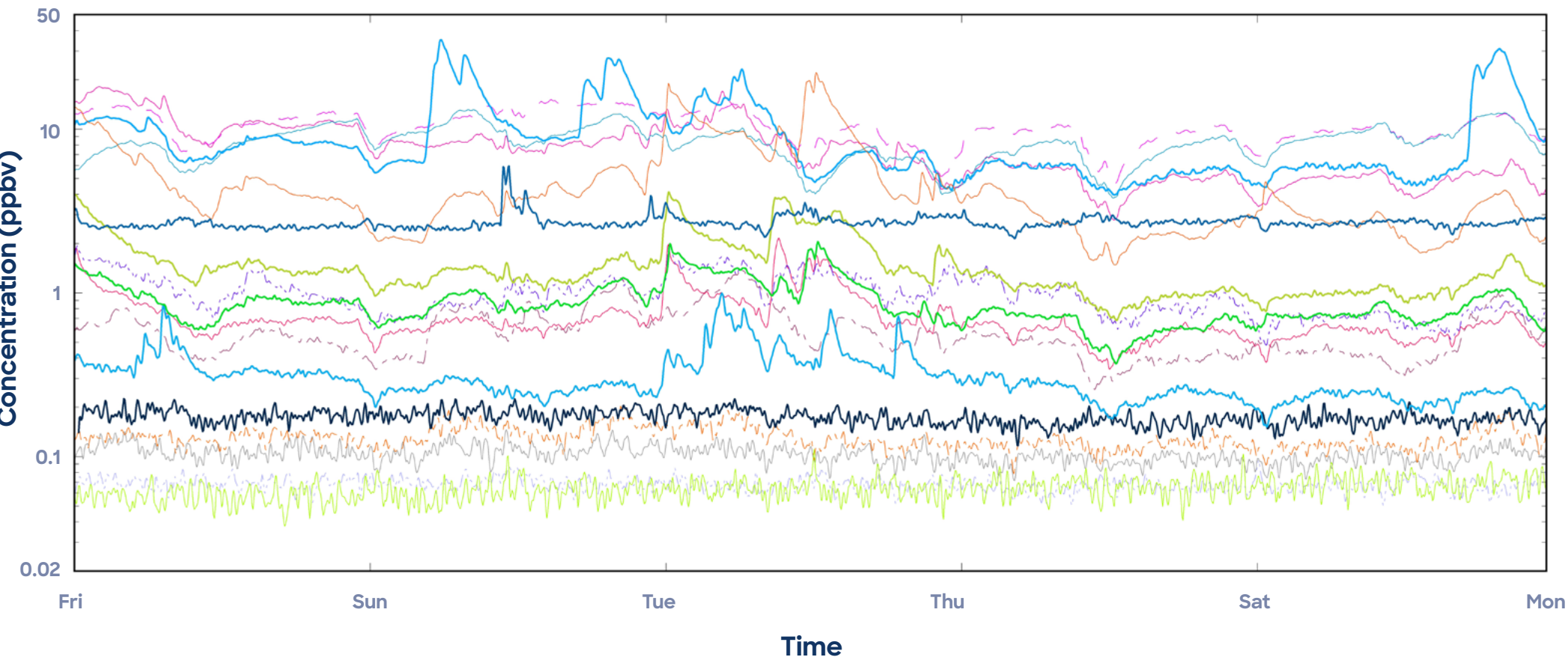
Online AMC monitoring solutions
for Fab environmental control



syftTM
Technologies

The most comprehensive online measurement of trace gases

Monitor production critical compounds simultaneously and continuously



Online AMC monitoring of a diverse range of volatile organic compounds. Detection of AMCs occurred within the lower half of Voice200infinity's dynamic range which extends to low ppt levels.

Identifying your AMC challenges



Online rapid and dynamic analysis for process monitoring.



Enhanced selectivity for a wide range of VOCs and inorganics.



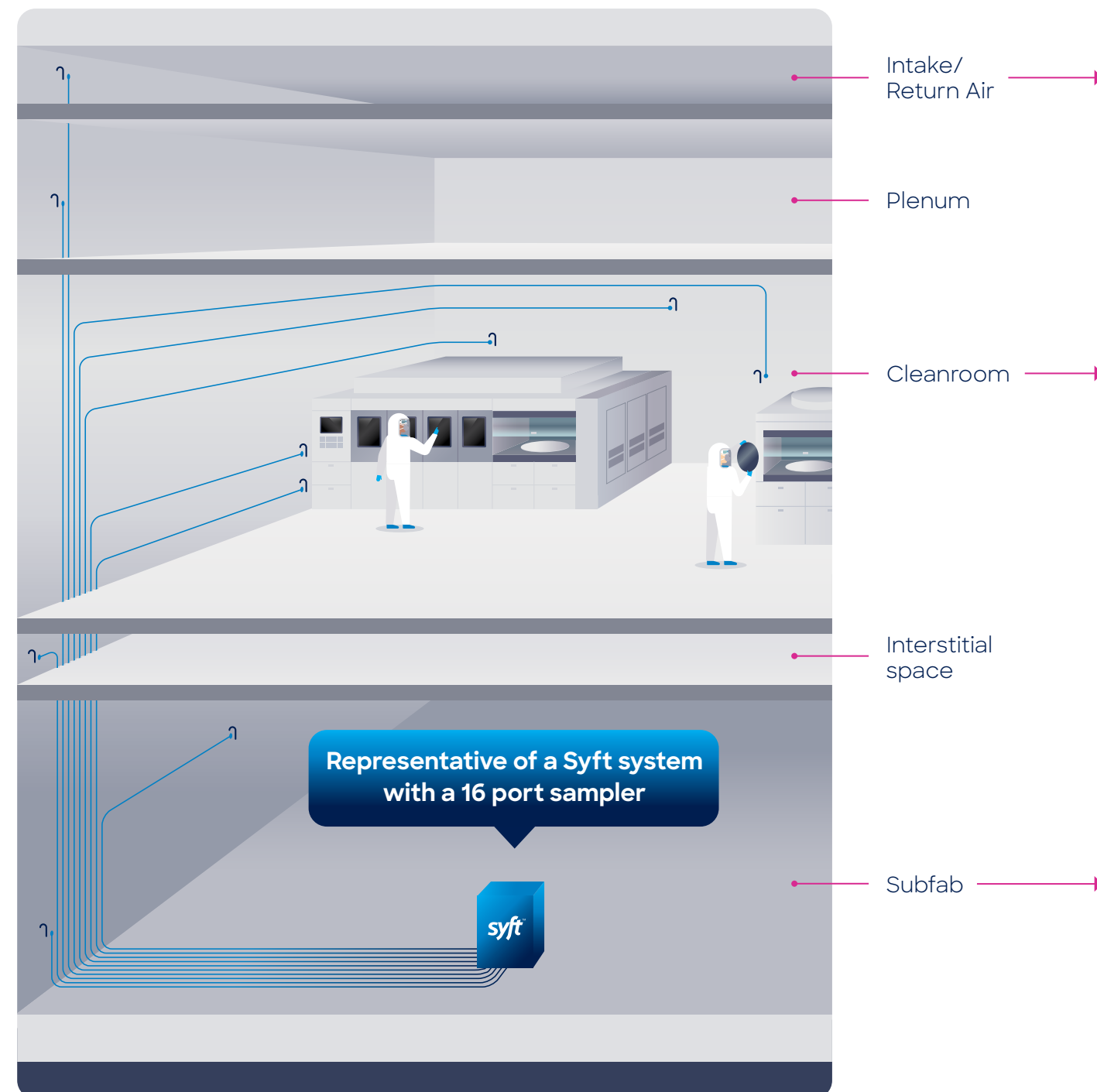
High detection sensitivity at the ppt level.



Monitor the most critical compounds at every step in the process

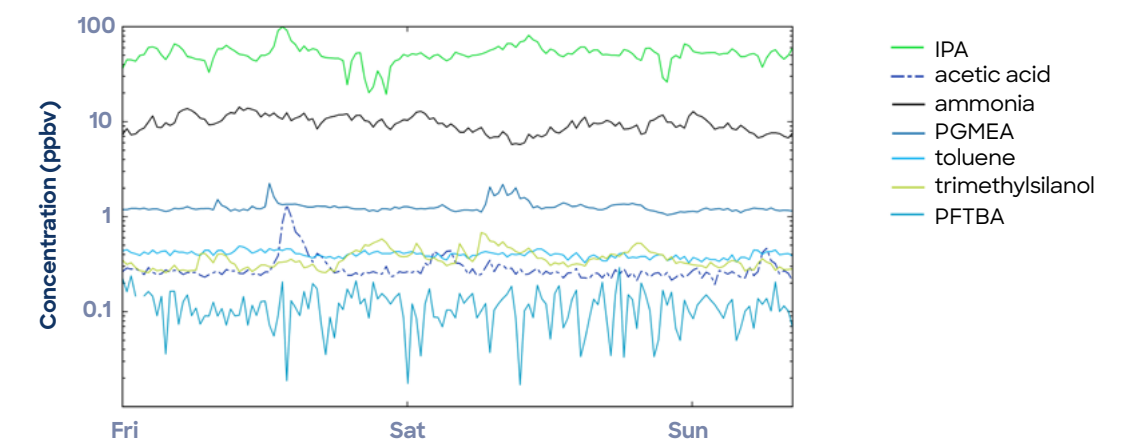
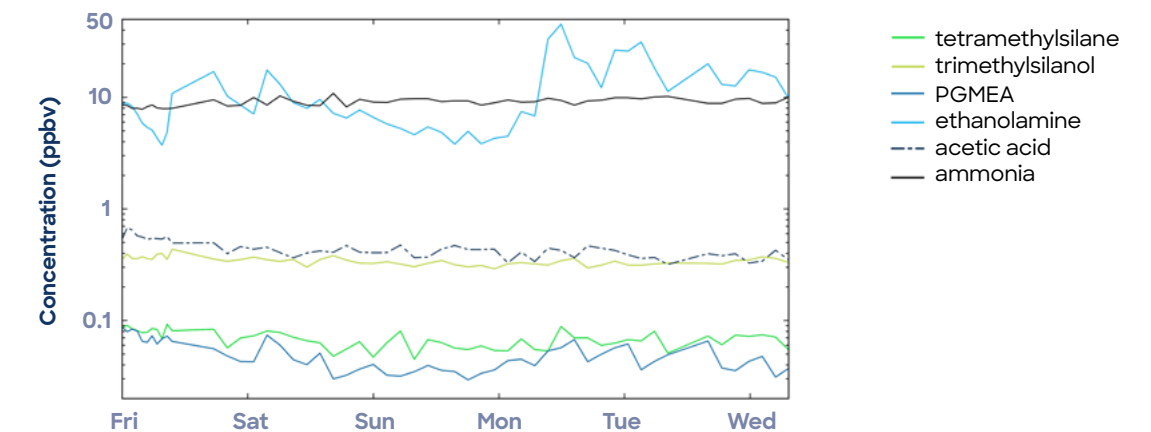
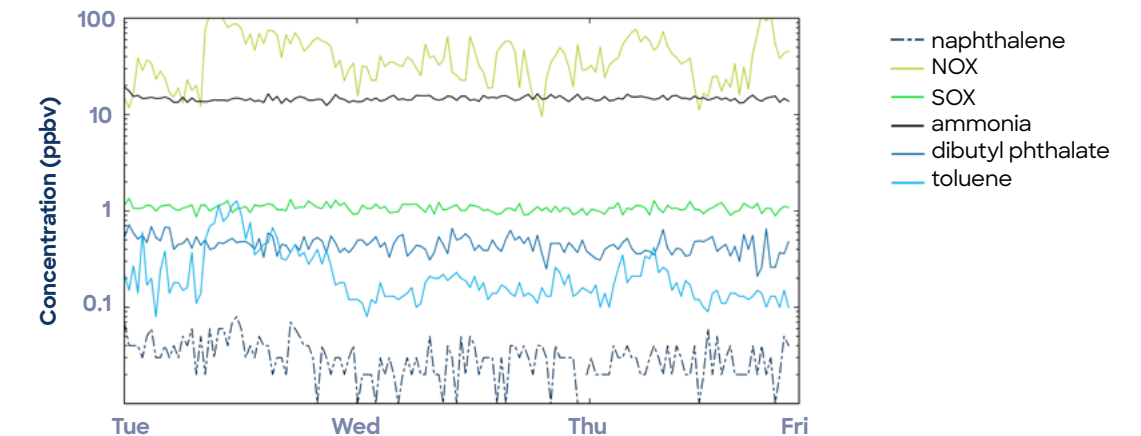
Syft provides the most flexible, high sensitivity solution for your gas-phase contamination monitoring needs.

Legacy detectors and sensors tend to be slow or inflexible. Syft covers a wide range of fab monitoring applications with fast, flexible solutions that can keep up changing process monitoring needs over the lifetime of your fab.

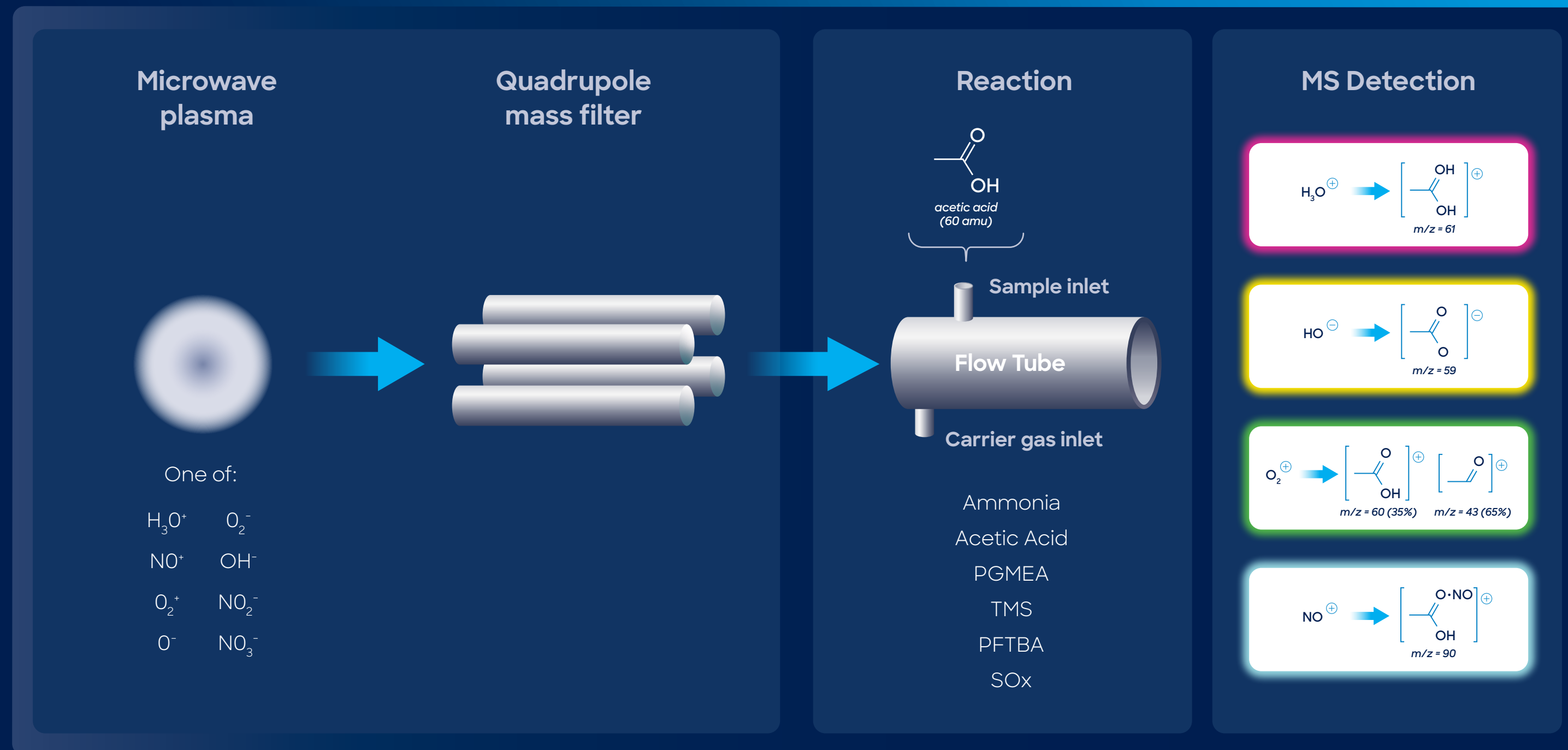


Syft has you covered whether you're monitoring for ammonia, ethanolamine, SOX compounds, or any other AMCs.

Each step in your production process can be tightly controlled by SIFT-MS real-time trace gas detection whether it's in the plenum, cleanroom, interstitial space, or subfab. Never waste a production batch again.



How SIFT-MS works



SIFT-MS is a direct MS technique. No chromatography is necessary when its combination of controlled ionization and mass spectrometry is applied. This means that chemicals with very different reactivities can be analyzed by the same tool.

SIFT-MS treats ionization as a chemical event, extracting information from the reaction

processes not just the fragmentation. By rapidly switching ionization methods, it gains multiple orthogonal measures of the same target species. This gives you confidence and selectivity along with a continuous measurement.

In the example above, we see very different reaction patterns for different ionizing agents.

This eliminates the need for a complicated high resolution MS system.

Finally, understanding the ionization process makes SIFT-MS an inherently linear, quantitative process with no complicated calibration look-up tables.

Monitor both trace VOCs and inorganic compounds

Airborne molecular contamination monitoring

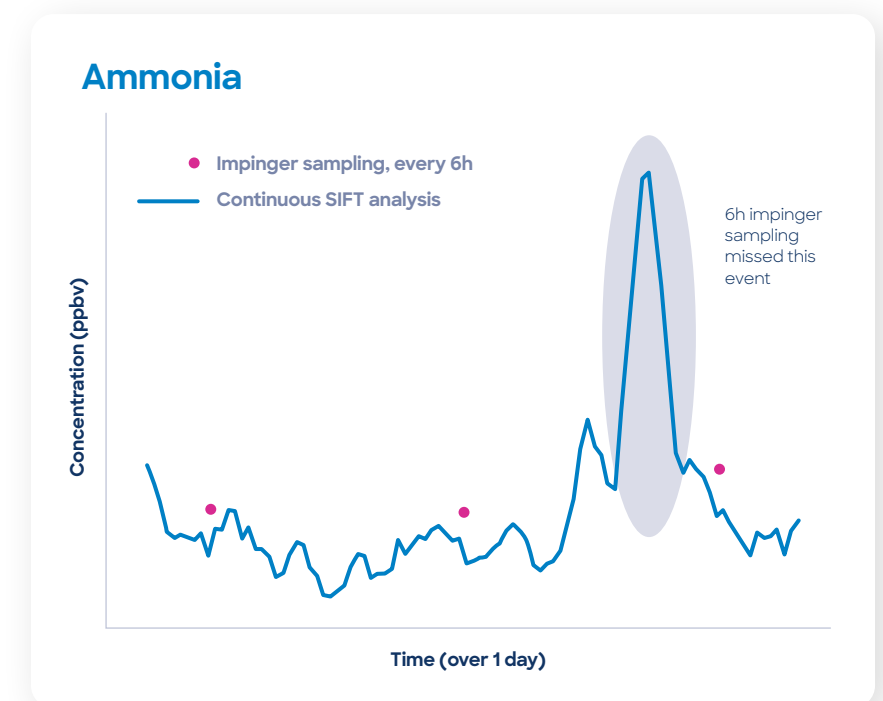
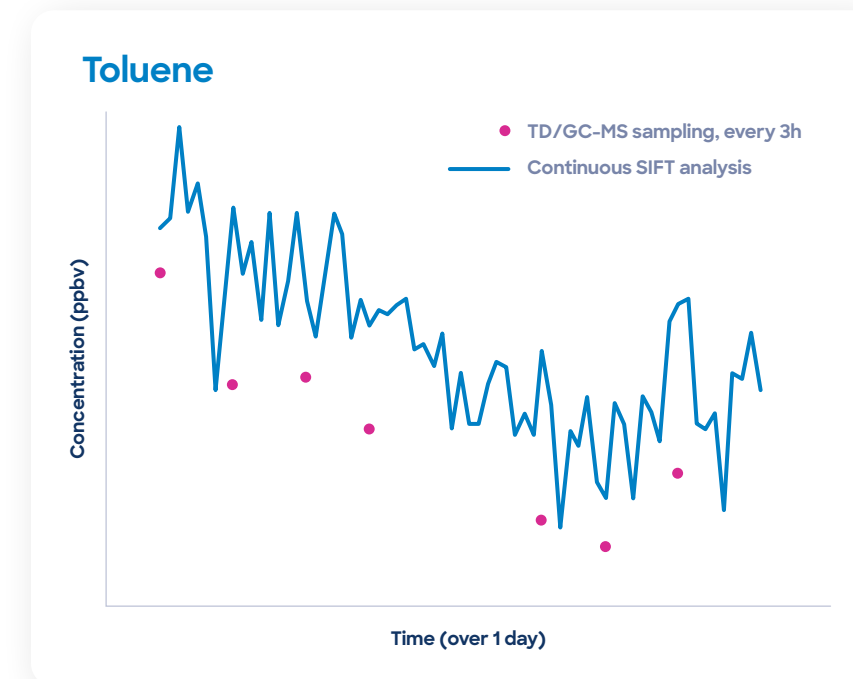
VOCs, Dopants, Refractory, Condensables, Molecular Acids and Bases can all be detected by SIFT-MS. A compound library of more than 1500 compounds includes a full range AMC that are critical to monitor during semiconductor fabrication.



Never miss a contamination event

SIFT-MS provides real-time, rapid, and dynamic trace gas detection for fab process monitoring.

Syft provides the most flexible air monitoring solutions that pinpoint your AMC challenges and ensure the integrity of your production environment. Legacy methods such as impinger or thermal desorption (TD) / gas chromatography - mass spectrometry (GC-MS) sampling can miss airborne molecular contaminants that damage precious product.



SIFT-MS provides real-time detection of airborne molecular contaminants which ensures that unwanted volatile compounds are detected in your production process the second they are present. VOCs and inorganics can be detected down to low ppt concentrations.

Syft Semiconductor AMC product platform solutions:

Stationary AMC platform



The stationary AMC platform has the sensitivity and performance required for 24/7 monitoring of AMCs. A 16-port sampler option enables environmental control of a semiconductor fab's cleanroom, subfab, and plenum areas from the same system.

The system includes a substantial 1500+ compound method library that can be utilized to set up a customized monitoring strategy. Ensure that organic and inorganic compounds of interest are continually tracked and understood.

The compound library has the flexibility to quickly add new method compounds without the need for costly system additions or upgrades.

Mobile AMC monitoring platform



Sensitivity, utility, and performance in a mobile solution.

On-board power allows moving the mobile AMC platform to its next destination without the need for a mass-spectrometer stabilization procedure following power-up.

The mobile system enables initial fab AMC contamination mapping of critical production areas without the need for installing an expensive and complicated multi-port AMC System.

Specific Compound Examples								
Compound/class	TMS	Toluene	PGMEA	TEOS	PFTBA	NH ₃	H ₂ S	IPA
Limit of detection	25 pptv	45 pptv	50 pptv	100 pptv	250 pptv	200 pptv	200 pptv	50 pptv
Measurement time	2 s	10 s	2 s	10 s	10 s	35 s	40 s	2 s
Analyser response time (T10/T90)	<10 s	<10 s	<10 s	<10 s	<10 s	<60 s	<10 s	<10 s
Precision (RSD at concentrations)	25 ppbv: <1% 2.5 ppbv: <3%							
Accuracy of measurement	20%							
Method length	Flexible depending on number of compounds and required detection limits. Generally, 60 s to 10 mins.							
Compound coverage	1500+ compound library of VOCs and inorganics							
Dynamic range	LOD - 10 ppm (upper limit can be compound dependent)							
Sample flow	2 - 5 L/min							
Measuring principle	Selected Ion Flow Tube Mass Spectrometry (SIFT-MS)							
Linearity	R ² > 0.999							
Selectivity	Real-time speciation using ion-molecule reactivity (including isobars and isomers)							
Mass range	10 - 400 amu							
Ambient temperature	15 - 35 °C							
Ambient humidity	0 - 100% non-condensing							
Sample inlet pressure	15 psi (+/- 20%)							
Consumables	>99.999% N ₂ at 100 ml/min while scanning							
Instrument validation	Recommended daily							
Maintenance	Twice yearly							
Stationary Unit		Mobile Unit						
Portable	No - fixed power and gas supply							Yes - UPS and N ₂ onboard
Sample ports	16							1
Electrical	220 VAC, 50/60 Hz, <16 A							208 - 240 VAC, 50 - 60 Hz, <16 A or 110-120 VAC, 50-60 Hz, <16 A
Size (L X W X H)	1.14 m X 0.95 m X 2 m							1.30 m X 0.75 m X 1.40 m
Output signal	MODBUS TCP/IP, Computer interface with DataView software							MODBUS TCP/IP, Laptop interface with LabSyft software
Country of Manufacture	New Zealand							New Zealand

About Syft: the trusted partner for semiconductor solutions.

Syft was founded in 2002 and has over 150 professionals in 7 countries.

Syft is considered the world leader in real-time MS with more than 20 years in SIFT-MS expertise.

Installed base in Semiconductor Memory and processor fabs are >300 systems.

Syft understands the Semi fab requirements for uptime, performance, and rapid response and has established world class local support.

Syft Global Support

Customer Support offices are located in key regions of Semiconductor manufacturing.

Factory trained field support engineers and field application scientists are staffed in each Customer Support office around the globe.

Regional service and application development support is available to assist with expanding your contamination compound list of interest.

Offices and distributors

Locations for Syft sales and support are listed below:



Headquarters	Taiwan	Singapore	Europe	United States	South Korea
68 St Asaph Street Christchurch Central Christchurch 8011 New Zealand +64 3 338 6701	4th Floor, No. 455, Wenhua 3rd Road Section 2, Linkou District, New Taipei City Taiwan	211 Woodlands Ave 9 Woodlands Spectrum 2 #04-86, Singapore 738960	Hilpertstraße 31 64295 Darmstadt Germany +49 6151 5201341	1525 Park Manor Blvd STE 272, Pittsburgh PA 15205, USA	46, Angol-ro Bundang-gu Seongnam-si South Korea +82 31 705 6701

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