



Vocus PTR-TOF

Real-Time VOC Analysis
with Market Leading Performance



With sub-ppt limits of detection and mass resolving power up to 15000, the Vocus PTR-TOF is taking laboratory and field analysis of VOCs in exciting new directions.

Market Leading PTR-MS Performance

Ultra-Low Limits of Detection

- Proprietary Vocus reaction cell reduces wall losses and focuses product ions
- Maximize analyte signals with combination of Vocus reaction cell, ion cooling interface, and sensitive TOF mass analyzer
- Up to 10x the sensitivity of other commercial PTR-MS
- Sub-ppt limits of detection in seconds

Highest Available PTR-MS Mass Resolving Power

- Mass resolving power up to 15000 enables identification of isobaric compounds in complex mixtures
- Identification of analytes and confirmation of peak assignments based on exact mass and isotope patterns

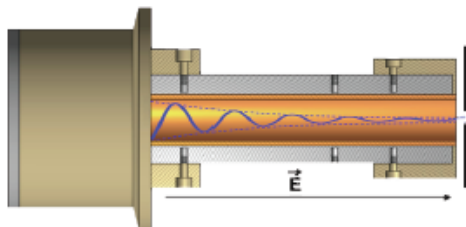
Select a Model to Meet Your Needs

	Sensitivity cps/ppb benzene	Limit of Detection (LOD) 1-min, BTX	Resolving Power at Specified Sensitivity ^a M/ Δ M
Vocus PTR-TOF standard	10000	< 1 ppt	5000
Vocus PTR-TOF C compact	10000	< 1 ppt	1000
Vocus PTR-TOF 2R high resolution	10000	< 1 ppt	10000

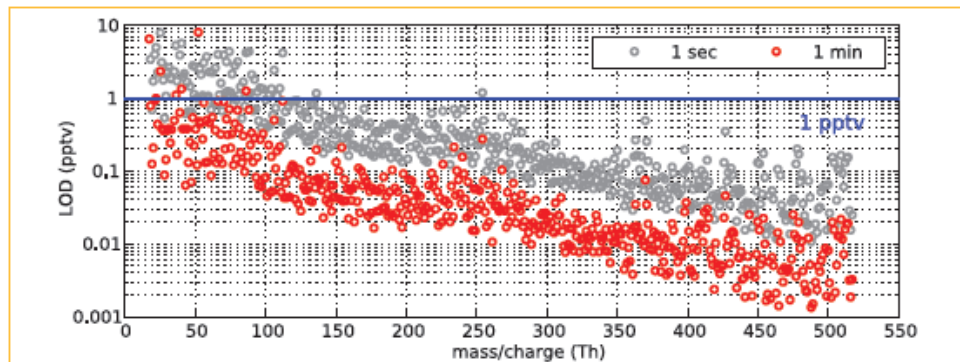
a. Each model can be operated with higher resolving power at reduced sensitivity.

Vocus™ is a Leap Forward in PTR Source Design

The RF focusing and uniform drift fields of the Vocus source enable real-time analysis of volatile organic compounds (VOCs) with unprecedented limits of detection and speed.



Sample Flow Rate	50 – 500 sccm typical 150 sccm
Operating Pressure	0.5 – 5 mbar typical 1-2 mbar
Axial Gradient	Uniform Linear Field 0-5 V/mm
Reagent Ions	$(H_2O)_nH_3O^+$, NO^+ , O_2^+



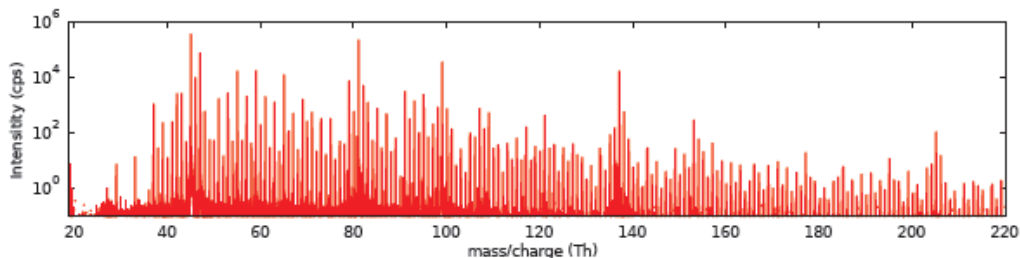
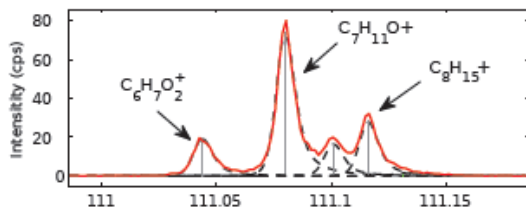
Sub-ppt limits of detection in seconds

Calculated as 3 times the standard deviation of signal with ultra clean air and assuming the sensitivity of BTX.

Resolving Power up to 15000 with the Vocus PTR-TOF 2R


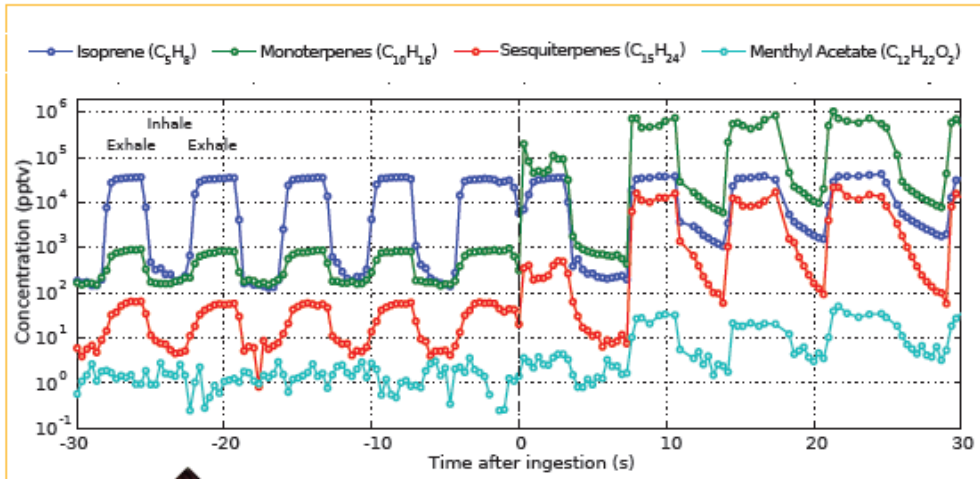
Confident analysis of complex mixtures often demands resolution of individual peaks.

This mass spectrum shows the diverse collection of biogenic VOCs that was emitted when a single pine needle was cut in lab air in front of the inlet of the Vocus PTR-TOF 2R. The inset demonstrates the capability of the 2R to separate and identify isobars.



Real-Time Monitoring of VOCs with Millisecond Time Response

The Vocus PTR-TOF can quantify dynamic changes in even ultra-low concentration compounds.



Human breath was monitored in real time at 3 Hz before and after the ingestion of a Ricola™ herb cough drop. Hundreds of compounds were present in the post-ingestion data, including monoterpenes, sesquiterpenes, and other compounds of herbal origin. A subset of detected compounds is shown in order to demonstrate the fast time response and broad dynamic range of the Vocus PTR-TOF.

Vocus PTR-TOF



Compact
Field-Deployable Architecture
60 x 40 x 80 cm
80 kg
1200 W