

# PTR-TOFMS SERIES



THE WORLD'S  
LEADING  
PTR-MS  
COMPANY PRESENTS



## PTR-TOF 2000

LoD < 5 pptv

Resolution up to 2000 m/ $\Delta$ m (FWHM)

The IONICON PTR-TOF 2000 instrument is an **ultra-sensitive detector** for volatile organic compounds (VOCs) that allows for **continuous VOC quantification** with a **high mass resolution**.

Our new **Time of Flight** based product combines **very low online detection limits** in the **single-digit pptv-range**, **outstanding sensitivity** with a **remarkable mass resolution**.

**Quantitative analysis** of the **whole mass range** within a **split-second** with a resolution that allows the **separation** of even **isobaric compounds** are benefits of the new PTR-TOF-MS technology.

**Direct injection** of sample gases **without preparation** contributes to the **speed and simplicity** that is common to all our instruments.

Our unique **soft ionization (PTR) technology** together with our extensive experience in gas-phase ion chemistry and engineering of scientific instruments are the basis for the **reliability, ultra low detection limit, very low mass fragmentation, fast response time** and **robustness** of our PTR-MS systems.

- > High resolution time of flight
- > Ultra high sensitivity
- > Mass range up to 50.000 amu
- > Full mass range acquisition in a split-second

Find out more:

[www.ionicon.com/products](http://www.ionicon.com/products)

# PTR-TOF 2000

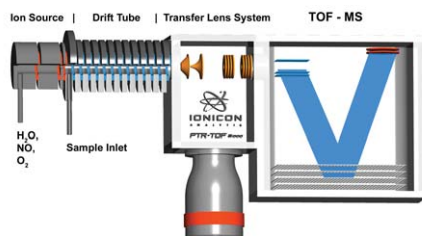


## IONICON PTR-TOF 2000 SPECIFICATIONS\*

- Mass range: 1-50.000 amu
- Resolution\*\*
  - > 1.500 m/Δm (FWHM)
  - > 2.000 m/Δm (FWHM) from m/z 79 (Benzene) or higher
- Response time: 100 ms
- Sensitivity\*\*
  - Benzene: 80-150 cps/ppbv
  - Trichlorobenzene: 150-300 cps/ppbv
- Detection limit (Trichlorobenzene)\*\*:
  - < 5 pptv averaged over 1 min
  - < 50 pptv averaged over 1 sec
- Linearity range\*\*: 5 pptv - 1 ppmv
- Pulse frequency: up to 150 kHz
- Adjustable flow: 50 - 1000 sccm
- Inlet system (Different inlet systems available on request):
  - 1.2 m long inlet hose - with internal inert (PEEK) capillary
  - Inlet system heating: up to 180°C (356°F)
- Reaction chamber heating range: 40 - 120°C (104 - 248°F)
- Power supply and max. consumption: 100-230 V, 1000 W
- Dimensions (w x h x d): 56x130x78 cm (22x51,2x30,7 in.)
- Weight (incl. SRI): 179 kg (375 lbs)
- Interfaces:
  - 1x Touch screen display
  - 2x DO, 2x AI, 2x DI
  - (digital/analog I/O package on request)

\*Specifications are subject to change without prior notice.  
 Product pictures and illustrations may differ from actual configuration.  
 \*\*Detection limit, linearity range and resolution are dependent on the substances measured, integration time and system set-up.

## TECHNOLOGY



The innovative technology all IONICON Analytik products are based on is Proton Transfer Reaction - Mass Spectrometry (PTR-MS).

This unique soft ionization is realized by proton transfer from  $H_3O^+$  ions to all compounds with a higher proton affinity than water. Common constituents of air such as  $N_2$ ,  $O_2$ , Ar,  $CO_2$  etc. have lower proton affinities than  $H_2O$  and are therefore not ionized. This is one of the main reasons for our market-leading

low online detection limit for trace compounds in the range of a few pptv.

For the new IONICON PTR-TOF 2000 we use a compact orthogonal acceleration time of flight mass spectrometer delivering a typical resolution of 1500 - 2000 m/Δm.

The PTR-TOF 2000 achieves extremely high ion count rates thus fulfilling your needs of an ultra low detection limit and high sensitivity without lacking the benefits of a time of flight mass spectrometer.

This very fast IONICON PTR-TOFMS set-up allows for instantaneous quantification of the full mass range even of low concentrated VOCs with virtually no instrumental mass range limitation and a linearity range over five orders of magnitude.

## ROBUST & EASY TO USE

The PTR-TOF 2000 is completely software controlled and connected to a data acquisition computer. The most important parameters can be checked and adjusted via a touch screen display directly at the instrument.

A space-saving rack mounted on wheels allows for easy transportability and variable location measurements.

## PTR-TOF 2000<sup>+SRI</sup>

The IONICON PTR-TOF 2000 is now also available as PTR-TOF 2000<sup>+SRI</sup> (Switchable Reagent Ions) featuring  $NO^+$  and  $O_2^+$  as additional precursor ions.

The benefits are extraordinary as not only isomeric VOC compounds can be separated and instantaneously quantified (the separation of isobaric compounds is already possible by using the IONICON PTR-TOF 2000 with its single precursor ion  $H_3O^+$ ) but also substances with a smaller proton affinity than the PA of  $H_2O$  can now be detected with the PTR-TOF 2000<sup>+SRI</sup>.

**PTR+SRI-MS**  
 SWITCHABLE REAGENT IONS