IONICON

FUSION PTR

FUSION PTR-TOF 10k mass spectrometer - Trace VOC Analyzer

Sensitivity > 40000 cps/ppbv LoD < 0.2 pptv Resolution > 10000 m/Δm

The new FUSION PTR-TOF 10k sets the benchmark for PTR-TOF instruments: unprecedented sensitivity, lowest limits of detection, clean ion chemistry by genuine IONICON ionization technology.

The novel **fast-SRI ion source** features nearly instant reagent ion switching and ultimate purity.
Selective Reagent Ionization (SRI) is available with e.g. H_3O^+, NO^+, NH_4^+ , and O_2^+ reagent ions.

The **innovative reaction region of FUSION PTR-TOF** stands out against conventional designs. A series of ion focusing RF ring electrodes opens into an actively pumped ion funnel. This set-up guarantees **lowest chemical background interferences** and enables **market-leading LoDs**.

Experience our **Next-Gen IONICON PTR-TOF instrument series**. Performance beyond any limits, highest mass resolving power and sensitivities, ppqv-level detection limits, novel ion source technology and much more.

- **> Ultra-clean FUSION reaction chamber**
- **> New fast-SRI ion source**
- **> Up to 80k cps/ppbv**
- **> TRU-E/N ion-chemistry**

Find out more:

www.ionicon.com/products

THE SOLUTION FOR REAL-TIME TRACE GAS ANALYSIS

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IONICON FUSION PTR-TOF 10k SPECIFICATIONS*

- Mass resolution:
  > 10000 m/Δm (FWHM) certified for m/z > 121
  up to 15000 m/Δm (FWHM) achievable for selected m/z

- Sensitivity:
  > 40000 cps/ppbv certified at m/z 121 (trimethylbenzene) at 10000 m/Δm
  up to 80000 cps/ppbv achievable for selected m/z

- Limit of Detection:
  at m/z 121: < 200 ppqv (trimethylbenzene) averaged over 60s,
  < 1 pptv averaged over 1s

- Power supply and max. consumption: 115/230 V, < 1500 W
- Dimensions (w x h x d): 60x135x80cm
- Weight: < 190 kg

*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.

FUSION PTR-TOF 10k BENEFITS

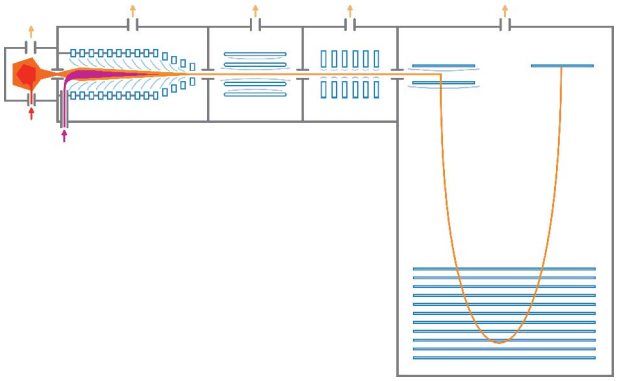
A new generation of PTR-TOF instruments with the novel fast-SRI ion source and FUSION reaction chamber enters the stage.

The new ion source improves the decoupling from the reaction chamber providing lowest interferences with neutrals and parasitic reagent ions. Within a single second, this source switches from quantitative proton-transfer-reaction with H_3O^+ primary reagent ions to almost fragmentation-free adduct ionization with NH_4^+.

Ion-molecule reactions with organics occur in a fully-controlled environment of the novel FUSION ion-focusing RF reaction chamber operated at reduced pressures of 2-4 mbar. This guarantees the needed clean ion chemistry with ion-molecule reactions at predictable reaction energies (E/N) and reaction rates that are crucial for quantitative operation of PTR-MS.

With these enhancements, the FUSION PTR-TOF 10k achieves lowest limits of detection in the ppqv-range and market-leading sensitivities up to 80000 cps/ppbV at a TOF-MS mass resolution > 10000 m/Δm.

FUSION PTR | ion GUIDE BOOSTER | IONITOF10K



FAST-SRI ION SOURCE

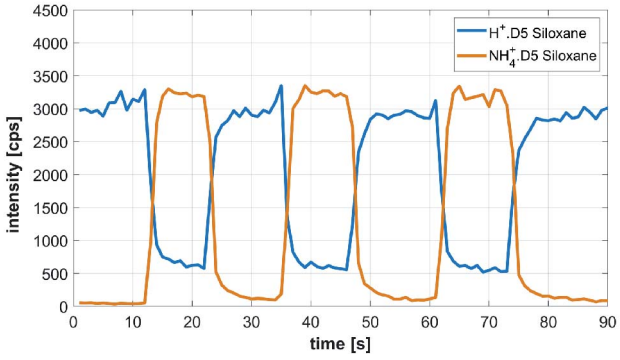


Figure: Fast switching between proton transfer (H_3O^+) and adduct ionisation (NH_4^+) in ~1s. This includes switching between high and low reaction energies (E/N).

A NEW WORLD OF POSSIBILITIES

FUSION PTR-TOF merges all the needs scientists around the world have reported to us: highest sensitivities, reliable ion-chemistry, lowest limits of detection without chemical interferences as well as rapid reagent ion switching for more selectivity and insights.
Discover a new world of analytical possibilities and gain top-class real-time results in e.g. atmospheric chemistry, environmental research, food and flavor analysis, and many more.

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