Reagent Ion Switching
An expanded suite of reagent ions increases chemical scope and specificity

Features

• Increased range of detectable compounds, using up to three different reagent ions with the Vocus PTR-TOF

• Automated switching and optimization within seconds

• Identification of isomers

• Quantification of highly functionalized, difficult-to-measure species

Applications

• Air monitoring

• Food, Flavor and Fragrances

• Beverage and Alcohol

• Security
Different classes of VOCs can be seen by comparing the \( \text{H}_3\text{O}^+ \) (blue) and \( \text{O}_2^+ \) (red) reagent ion spectra of this sample of aromatic and hydrocarbon-rich air.

Chemical flexibility and specificity

Acquisition can switch between reagent ions automatically and within seconds.

Switching reagent ions takes approx. 10 s

Available Reagent Ions

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| \( \text{H}_3\text{O}^+ \) (PTR) | - Clean, easy-to-interpret spectra  
- Simple to determine sensitivities  
- Independent of ambient humidity | Small oxygenated compounds, polar molecules, BTEX, PAHs, and other aromatics | - Air quality analysis  
- Food and flavor  
- Environmental contamination |
| \( \text{NO}^+ \) | - Gentle ionization: low fragmentation  
- Chemically specific measurement of isomers | Alcohols, substituted aromatics, cyclic and branched alkanes, long-chain semivolatilite alkanes | - Vehicle exhaust  
- Wine contaminants |
| \( \text{NH}_4^+ \) adduct | - Automatic quantification without complicated calibration systems | Highly functionalized VOCs, oxygenated compounds, peroxides | - Explosives and narcotics detection  
- Photochemical oxidation products |
| \( \text{O}_2^+ \) | | Alkanes, carbon disulfide, ammonia, halogenated compounds | - Ambient air monitoring  
- Vehicle exhaust |