

Providing rapid trace detection solutions in security, law-enforcement and commercial applications for over 20 years



Thermal Extraction Ion Source - TEIS
Direct analysis ion sources for near-instant results

The ultimate high-speed Thermal Extraction Ionisation Source for volume applications; test hundreds of samples per hour with no loss of selectivity.

- Compatible with liquids and solids – test direct from thermally stable surfaces
- No sample preparation – source integrity preserved
- Compatible with Sciex Turbo-V Triple Quad and QTOF mass spectrometers

Benefits:

- Sample introduction works with manual and automatic processes
- Powder samples can be tested directly – no chromatography required
- No solvents, derivatives, consumables or sample preparation required
- Self purging
- Wide compound selection
- No additional gas supply required
- Automatic and manual temperature control

The latest evolution of Mass Spec Thermal Ion Source makes the same technology that enabled Mass Spec to amass some of the largest forensic chemistry databases in the world available to all Sciex V-series Triple Quad and QTOF users. It is ideal for applications where the method requires large quantities of sample measurements in a relatively short period of time or where automation is required. The key benefit of the approach is the lack of sample preparation needed – meaning that a wide variety of methods can be accommodated.

Mass Spec has Software applications available to support expert evaluation or to provide a simple red light, green light decision based upon pre-determined criteria so that operatives can use the equipment effectively in the field or production environment.



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Accredited to
ISO/IEC 17025:2005

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Speed when you need it

The TEIS uses Mass Spec's patented sample introduction device: two heated nickel coated brass plates with a cavity between them. Ambient air is continuously drawn into this space and through a ceramic transfer line into the Atmospheric Pressure Chemical Ionisation (APCI) ion source. Compounds amenable to thermal desorption, such as many pesticides, drugs and explosives, may be rapidly analysed in this way without the need for any sample pre-treatment, solvents or glassware. The TEIS significantly speeds up workflow times by 30% or more for processes where GCMS or liquid chromatography is used for analysis.

The TEIS is easy to use, reliable, and use few or no consumables. It can liberate samples from a large surface area, and so is ideal as a rapid screening method. Coupled with the specificity afforded by a tandem mass spectrometer, the TEIS is able to provide real time results to a forensic standard. Mass Spec have several variants available:

Manual

The simplest configuration for the Thermal Extraction Ion Source is in manual mode where samples are introduced to the hot blocks by hand.

Paper or cotton swabs, or toothpicks may be used to convey samples into the heated region; or, in the case of banknotes, the items themselves may be directly introduced between the blocks.



Vapour

Mass Spec has designed and built a range of filter thermal desorber units for the collection, trapping, and rapid desorption of vapour samples. Filters of various diameters and thicknesses are available for a range of vapour (and airborne particulate) detection applications and support media (paper, fabric, metal, glass, etc.). Both can be coated to enhance trapping efficiency.



Auto sampler

The design nature of the Thermal Extraction Ion Source lends itself to methods that require a large number of samples to be made with quick results.

Mass Spec has designed sample introduction units for applications such as transportation tickets, and conveyors for removing particles from clothing or other surfaces.



Performance/Throughput

- Dynamic range, scan speed and mass range is as per the configuration of the Sciex Triple Quad or QTOF System used

Power Requirements

- Supply Voltage: 207-247 VAC
- Frequency: 50-60 Hz
- Current: 13 Amp grounded single phase circuit

Sample Introduction Units

- Thermal desorber
- Vapour (filter) desorber
- Auto-feeder (event tickets, cards)
- Conveyor
- Auto-sampler

Software applications

- Supply Voltage: 207-247 VAC
- Frequency: 50-60 Hz
- Current: 13 Amp grounded single phase circuit

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EXPERT TRACE DETECTION