

HUMAN HEALTH

ENVIRONMENTAL HEALTH



MASS SPEC RESULTS IN SECONDS WITH DIRECT SAMPLE ANALYSIS



AxION DSA System

Direct Sample Analysis


PerkinElmer[®]
For the Better

RAPID RESULTS WITHOUT CHROMATOGRAPHY OR METHOD DEVELOPMENT



Get accurate mass data on virtually any sample (liquid, solid or gas)... instantly.

- No up-front chromatographic separation.
- No complicated method development.
- No time-consuming sample preparation.*

How much faster could you run an analysis? How much more would you be able to get done? How much easier would life become? Find out today with AxION® DSA™ (Direct Sample Analysis) technology from PerkinElmer.

The Fastest Route to High Quality Data

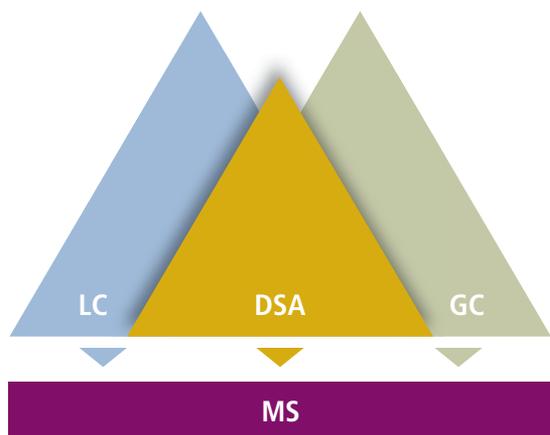
This breakthrough approach to sample introduction offers a robust alternative to front-end GC or LC separation systems, enabling users to take advantage of:

- Instant sample introduction—Ionization occurs inside the enclosed housing of the DSA, at the entrance to the mass analyzer, generating molecular signals without chromatographic separations or sample preparation.
- Faster analysis times—By eliminating multiple steps from the workflow, a typical analysis can be condensed from ~25 minutes to under one minute.
- Immediate results—With the speed and simplicity of the DSA coupled with the fast acquisition rates of an MS, high quality results can be obtained in a fraction of the time of other systems.

Should you need to revert back to using front-end chromatography, switching between a DSA and LC system can be done in less than two minutes without venting the instrument.



PerkinElmer's unique AxION DSA system delivers fast answers on liquid and solid samples without time-consuming up-front sample preparation.



For the first time ever, a single technology eliminates the need for front-end GC or LC during initial sample screening. The AxION DSA allows samples to be directly ionized at the entrance to the mass spectrometer.

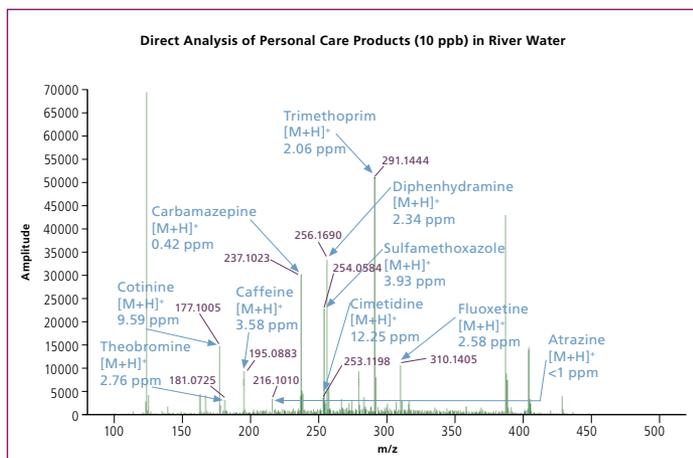
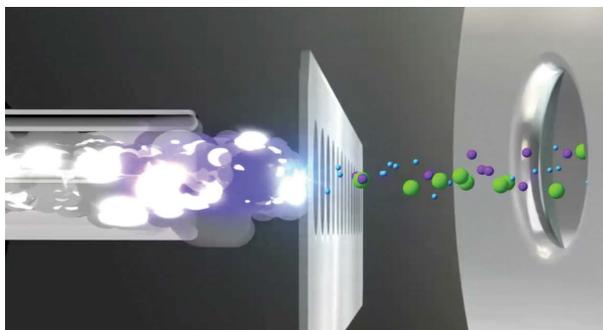
* More thorough sample preparation may be required for analytes in complex matrices.

Revolutionary Design for Accurate Detection

At the core of the DSA is a unique ion gun featuring a patented field-free APCI-like design. A corona needle is embedded into the source and sits directly in the path of the nitrogen gas. This provides true molecular ions—not metastable ions—for clearer, more definitive data.

As the nitrogen passes through the corona region, the high-voltage needle interacts with the gas to generate reagent ions that are then directed at your sample.

When the reagent ions and heated gas impact the surface of the sample, analyte desorption and ionization creates a rich stream of analyte ions that is drawn into the mass spectrometer for detection.



With accurate mass, the AxION DSA/TOF system records true molecular signals, presenting perfectly clear, easy-to-read data without any complicated post-processing.

Integrated System. Increased Sensitivity.

By coupling the AxION DSA with the AxION 2 TOF MS, laboratories can experience a whole new level of simplicity and productivity while generating confident results. Designed and engineered together, the two components of the AxION DSA/TOF system seamlessly integrate with one another, bringing together a series of innovative features to deliver exceptional sensitivity:

- Patented Atmospheric Pressure Chemical Ionization (APCI) design—Minimizes ion suppression and eliminates metastable ions for clearer, more definitive data.
- Ability to introduce additional additives—Offers the flexibility to adjust analytical conditions for increased sensitivity.
- Time-of-Flight MS technology—Provides accurate mass performance for clear, unambiguous results.

BUILT FOR GREATER SPEED AND CONFIDENCE

Simple Steps to Greater Productivity and More Reliable Results

By replacing traditionally lengthy sample preparation and complicated chromatographic methods, the AxION DSA/TOF system is the ultimate tool for streamlining and simplifying laboratory workflows.

- Allows for the direct analysis of liquid, solid and gas samples, with minimal sample preparation.
- Fully automated and fast data acquisition for up to 13 samples.
- Outstanding resolution, sensitivity, mass accuracy and wide dynamic range of a Time-of-Flight Mass Spectrometer.

25 Minutes

ANALYSIS OF CARBAMATES IN ORANGE JUICE

25 Seconds

With Typical SPE LC/MS Workflow

WET SPE cartridge

CONDITION cartridge

PIPETTE sample

DISPENSE sample

WASH salts

ELUTE cartridge

COLLECT eluant

TRANSFER eluant

RUN analysis

CONFIRM results



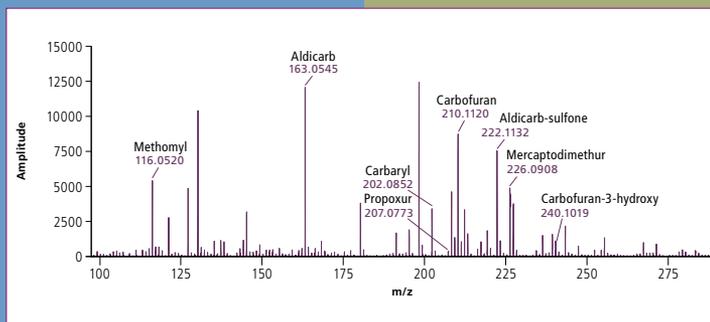
With AxION DSA/TOF System

PIPETTE sample

LOAD instrument

ACQUIRE spectra

CONFIRM results





Rapid Sample Analysis

A software-driven platform automatically delivers a sequence of samples for ionization at precisely the right position and time for each analysis.

No Carryover

Interchangeable, disposable sample holders (including mesh strips and glass capillaries) eliminate carryover with solid and liquid samples.

Flexibility of Analysis

Auxiliary reagent line allows analytical conditions to be adjusted through the addition of standards or reagents.

[M+H]⁺ Ion Generation

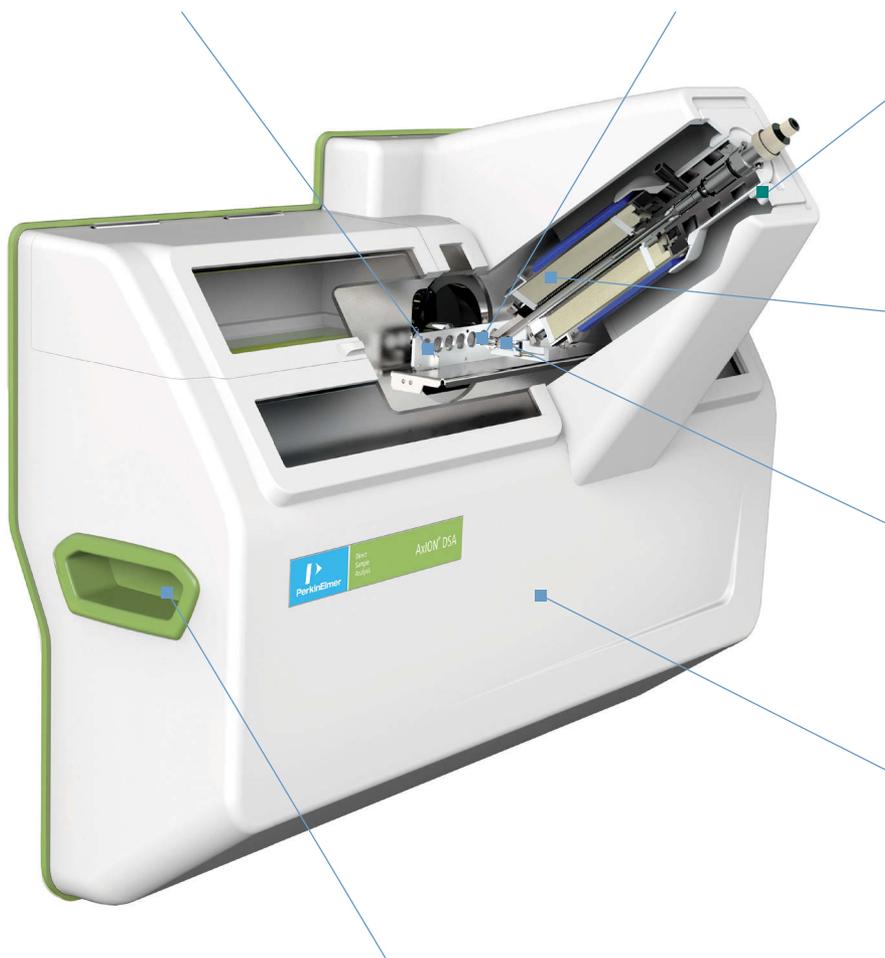
Patented APCI-like design provides molecular signals, facilitating accurate and rapid data interpretation.

No Metastable Ion Interferences

The interaction of nitrogen with the corona needle (within the source) generates a hot plasma, ensuring efficient ionization and clearer, definitive data.

Minimized Background Noise

Fully enclosed housing prevents outside contamination, decreasing background ions in your mass spectra for simpler, clear processing.



Switch Between DSA and LC in Minutes

With built-in handles and a convenient kickstand, the AxION DSA can be easily removed from the mass analyzer and safely stored on a lab bench.



Easy Instrument Control. Easy Data Processing.

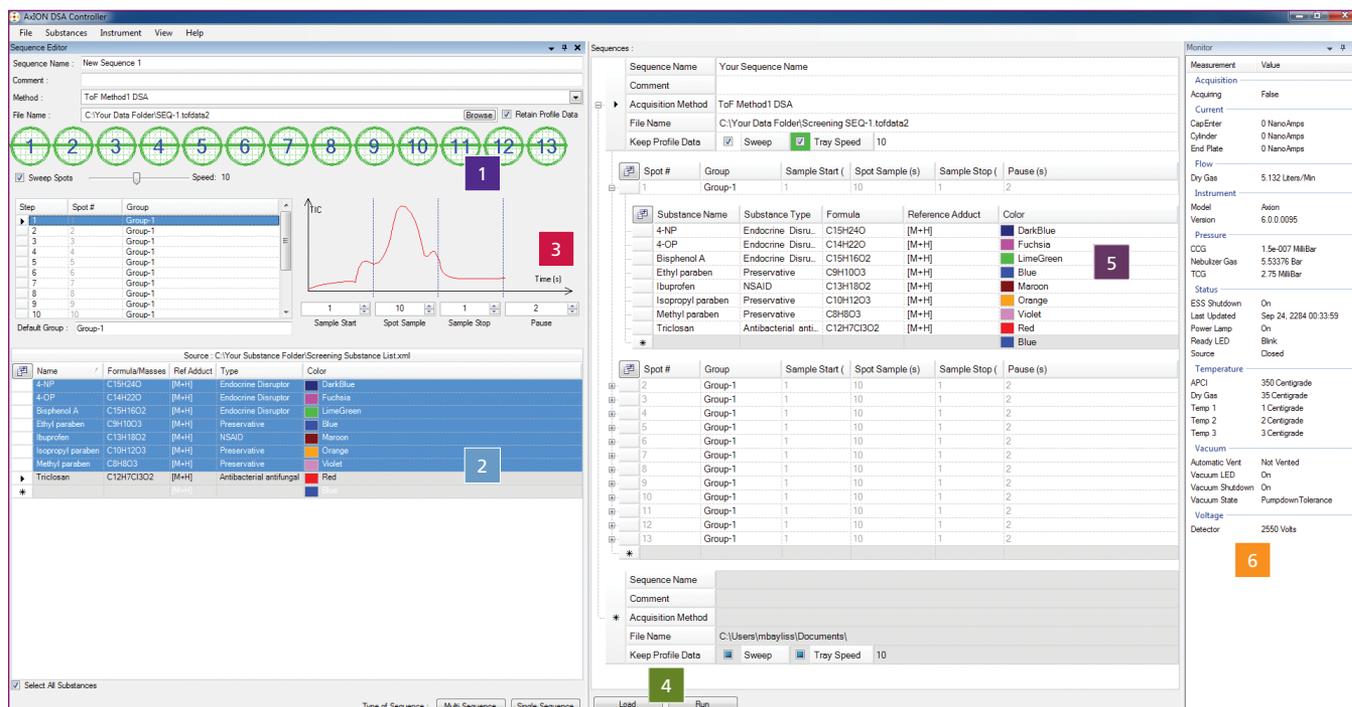
The AxION DSA Instrument Controller and AxION Solo™ provide an integrated software solution for quickly analyzing samples and processing data. With the found/not found visual capabilities of AxION Solo, data for targeted analyses can be rapidly interpreted to get faster answers and make faster decisions.

INTUITIVE SOFTWARE. FAST ANSWERS.

The speed and efficiency of the DSA is enhanced by the power of its software. The AxION DSA Instrument Controller and AxION Solo make it easy to run the instrument, analyze samples and obtain fast, reliable answers.

AxION DSA Instrument Controller—System Operation Software

With a user-friendly interface and instant access to key command functions, the AxION DSA Instrument Controller gives you quick, easy, complete access to the instrument. Whether you're running in single-sample mode or sweep mode across multiple samples, the Instrument Controller provides a clear, graphical representation of all aspects of an analysis in real time.



1 Easy, step-by-step Sequence Creator automates the analysis of multiple samples.

2 Flexible Substance Tracker allows you to assign the same or different substances to each sample.

3 Optimize sample analysis by adding pre- and post-sample dwell times for a specific sequence.

4 Readily accessible control buttons let you quickly load samples and run analyses.

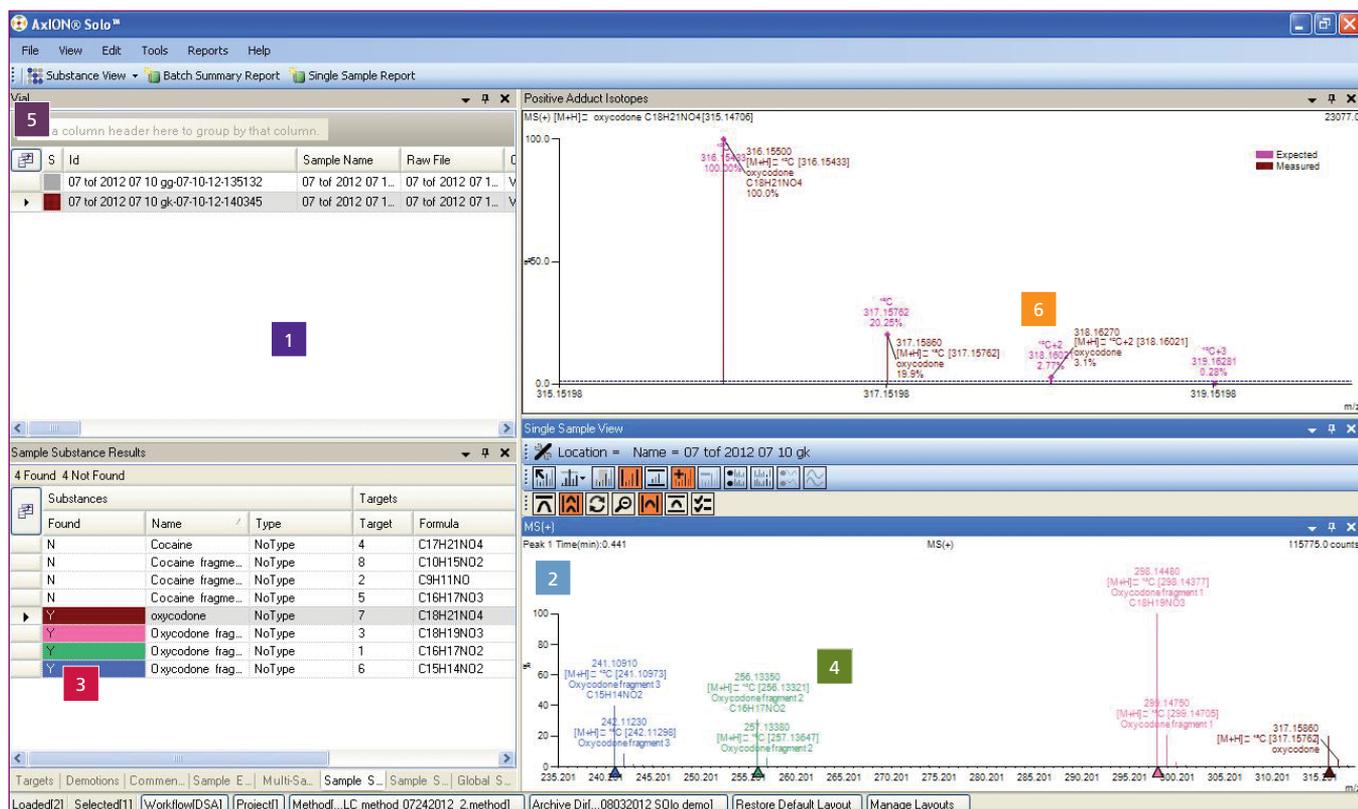
5 Comprehensive and flexible Sequences window lets you view each analysis as it's running.

6 Real-time diagnostics allow monitoring of system status.



AxION Solo—Target Analysis Software

Whether you're searching for single or multiple targets, AxION Solo allows you to define your own criteria and processing methods to find compounds by mass or formula. The software enables quick interpretation of data, clear reporting, and faster, unambiguous results.



- 1 Quickly and easily screen batches by substance.
- 2 Detailed data allows you to quickly identify outliers and anomalies, minimizing review time.
- 3 Color-coded found scoring enables rapid review of samples.
- 4 Automatic peak annotations make it easy to distinguish targets, and to identify adducts and dimers.
- 5 Multiple plates or sample lists can be viewed in parallel for convenient cross-referencing and enhanced productivity.
- 6 Expected and observed isotopic ratio matching allows you to confirm results with complete confidence.

AxION Xpo™—An Intuitive Data Review Option

- Allows fast reviewing and reporting of data
- Enables sharing of results across multiple locations
- Creates customizable reports in user-friendly formats, such as Microsoft® and Adobe®

SUPERIOR SPEED FLEXIBILITY AND SECURITY

Take the Direct Route to Faster, Easier Analyses.

From environmental labs to pharmaceutical companies, food safety to forensic research, the AxION DSA system promises a breakthrough level of performance and productivity across a broad array of applications. Experience the DSA difference for yourself. And go from sample to results faster than ever before.

For more information on the AxION DSA system, visit www.perkinelmer.com/DSA

A More Secure, Efficient and Productive Environment

Innovative and user-friendly, the AxION DSA/TOF system offers a range of features and benefits that make it a better solution for your analysts, your business, and the planet:

- No caustic solvents or waste—Eliminates user exposure and greatly reduces costs.
- No dangerous off-gassing into the lab—Excess sample is removed through an integrated exhaust line.
- Quiet operation—Ensures a safer, more pleasant working environment.
- Rapid analysis time—Reduces overhead operating costs.

The World's Most Trusted Laboratory Services.

PerkinElmer's OneSource® Laboratory Services is the market leading laboratory asset management solution, pioneered more than a decade ago with more than 400,000 multi-vendor assets under its care. OneSource Laboratory Services goes beyond just maintenance and repair of instrumentation. OneSource incorporates laboratory asset management as part of our customers' business equation—a partner with proven results in improving efficiencies, optimizing operations and providing cost certainty across the globe. OneSource, the ONE you can count on.



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