Increase Your Efficiency

- Screen samples in seconds to prioritize
- Reduce Sample Backlog by focusing on positives
- Minimize Sample Use
- Save on consumables
- Detect Emerging Threats
ENJOY THE SPEED AND SIMPLICITY OF DART

• Little or No Sample Preparation
• Results in Seconds
• Easy to Interpret Spectra

Direct Ionization in Real Time sources have been available for commercial LC/MS and LC/MS/MS systems since development of the technology in 2005. The new DART GSX interface is designed to enable rapid screening and characterization of samples on the Agilent GC/MSD, one of the most reliable mass spectrometers in the world.

DART enables rapid analysis of samples with little to no sample preparation. Hundreds of DART systems are in use providing its users with the capability to detect intact protonated molecules in seconds after the sample has been positioned in the desorption ionization region between the source and GSX interface inlet.

Why use the DART GSX System?

The vast majority of chemical analysis conducted using GC/MS instruments are providing a routine answer. At the same time, those answers take anywhere from 3 to 60 minutes for completion and many require extensive sample preparation such as methylation for fatty acid distribution, extraction to remove thermally labile compounds that will degrade in the heat of the GC-injector and many other forms of sample stabilization. The reality of DART-MS is that near simultaneous ionization of the many difference compounds in complex samples can be achieved while reducing analysis time to under a minute. The DART G12 source delivered with your GSX System enables thermal desorption analysis of your sample at up to 4 different temperatures providing a new level of quality inspection ideal for use in detection of non-specific chemical threats that might have been introduced into your product either intentionally or by criminal activity.
GC/MS is the gold standard for chemical analysis. The DART GSX is not a replacement for GC/MS, it is designed to increase the technical capability of your laboratory. The system allows chemist to use the same data analysis software for MSD operation. Integration of a micro electrospray ionization module, the PicoChip® permits simple calibration of the instrument and routine QC of its capability. DART is a solvent free method that uses heated gas instead of costly solvents that must be disposed of after use.

**Rapidly Detect Drugs of Abuse**

Synthetic cannabinoid XLR-11 is readily detected in the direct analysis of the “Incense” herbal product, giving the protonated molecular ion at m/z 330. The structure is confirmed with in-source fragmentation showing the major ions, below.

**Product Description**

The DART GSX System includes a DART G12 source, three stage pumping system including a brand new turbomolecular and rough pumps replacing the existing vacuum system. Routine analyses are facilitated by the QuickStrip™ Sample Cards on the linear rail sample scanner unit for routine analysis of up to 12 samples in a single unattended experiment.

The DART GSX System can be fitted to one of your existing Agilent GC/MSD instruments or it can be supplied as a complete system with a new or refurbished Agilent GC/MSD.
Optional accessories include our Compendia™ Data Analysis Software which provides user friendly statistical analysis of your results. Compendia takes advantage of the speed of DART where dozens of samples can be analyzed in less than a day of work. With that large volume of data managed by a database program, Compendia can ferret out the differences between your good and bad samples. The result is a spectroscopic type approach to the analysis of mass spectrometry data that is unique in the industry.

This image above shows the analysis of 40 Black Cohosh dietary supplement samples with sample number across the vertical axis and mass to charge value across the horizontal axis. This shows the consistency of the data, all of which was acquired in less than one hour. These charts and the automated processing will allow for quality control of large sample sets as well as screening for unknown or unexpected contaminants or threats. A single spectrum is shown on the left.

**Rapid Direct Infusion Measurements**

A new feature of the DART G12 Source is that the sample chamber can be completely enclosed for operation of either DART or microelectrospray sources. The New Objectives PicoChip source provides the means for low flow electrospray making system calibration routine, and you can even complete the occasional direct infusion experiment as shown on the right.

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