DART-MS

A new paradigm in forensic analysis

DART-MS enables the rapid chromatography-free analysis of seized goods

Introduction

The growing demand for forensic analytics is driven by the increasing number of targets, including emerging new psychoactive substances (NPS). This has put pressure on labs to handle larger caseloads while also improving the selectivity and sensitivity of analyses to reduce sample preparation and analysis time, ultimately shortening response time and increasing throughput. Direct-Analysis-in-Real-Time Mass Spectrometry (DART-MS) as Bruker's unique Point-of-Need (PoN) workflow is meeting these demands, allowing for quick and easy generation of useful information and increased productivity in labs.

Keywords:
DART-MS, chromatography-free, QTOF instruments, timsTOF, Point-of-Need (PoN), automation, forensics

But how can you interpret your data?

When it comes to interpreting DART-MS results, it can be a difficult task if you don't have access to forensic MS database tools. However, Bruker has developed an automated library search for DART-MS/MS data that solves this problem. Therefore, home-built libraries as well as external databases such as those from NIST can be used to generate sample reports in under 15 seconds, making it highly efficient. As a result, this feature improves the workflow, reduces cycle times, and enhances screening accuracy.

Eva-Maria Niehaus, Carsten Baessmann, Leon Groeschel, Bruker Applied Mass Spectrometry, Billerica, MA

Access your report through just 5 simple steps

By utilizing this chromatography-free workflow, you can reduce the amount of sample preparation required and achieve a rapid analysis. Once the sample is introduced to the instrument and method initiated, a report is automatically and rapidly generated.
In just a few seconds, you can get from sample to report, using the automation capabilities in Bruker's software.

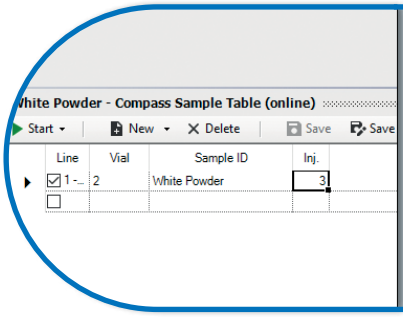
1

Pipette your sample onto the QuickStrip

Let the drop dry at room temperature

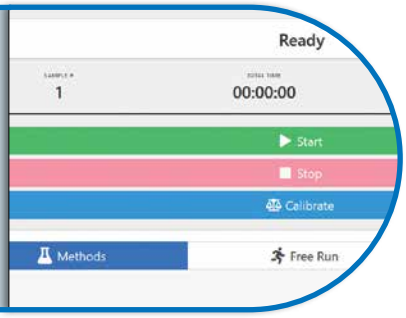
2

Put the QuickStrip at your sample holder of the DART source



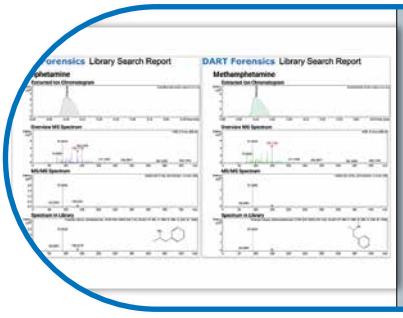
3

Create sample table



4

Start DART acquisition after setting the parameters



5

A sample report is created automatically, and you're done!

What if further detailed analysis is required

In forensic cases, chromatographic information is frequently required for your analysis to be defensible in court. You can **easily switch from chromatography-free DART-MS analysis to liquid chromatography (LC) analysis** in under 2 minutes.

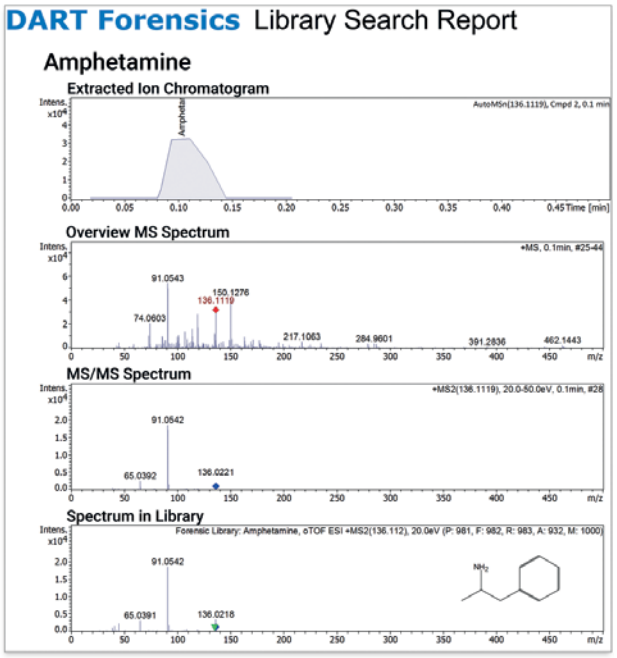
CHANGE IN LESS THAN 2 MINUTES

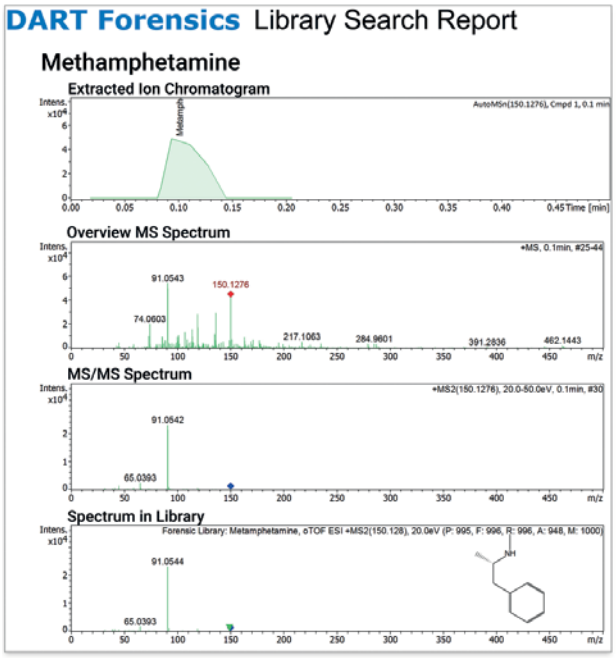
DART source + MS

VIP HESI source + UHPLC + MS

Confidence in your analytical results

Without any need of extraction, you can directly measure your sample. With the MS/MS spectral information and accurate mass provided by the QTOF instrument, confidence in your analytical results is improved. With Bruker's **automated library search**, your report will be delivered to you directly.





Conclusion

- Fast analysis for high throughput
- Direct report from your analysis
- Change from DART to LC in less than 2 min for detailed analysis

You can also easily **connect the DART source to Bruker's compact QTOF** which offers an unrivalled dynamic range in combination with mass accuracy, sensitivity, MS/MS performance and robustness.

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