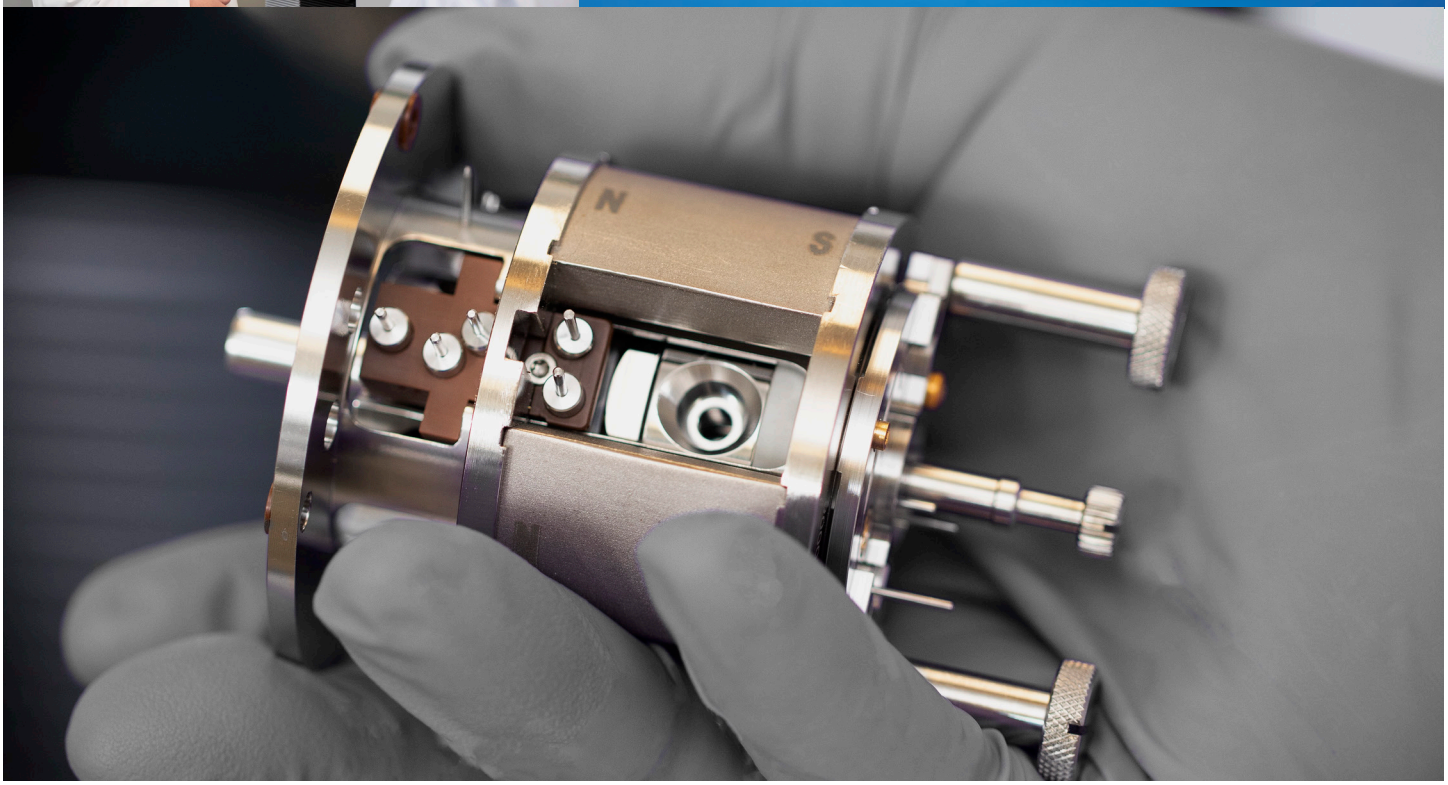
Agilent
Trusted Answers

Less Cleaning, More GC/MS Results

Agilent JetClean self-cleaning ion source



Keep Your Ion Source Clean—Automatically

Matrix deposits inevitably build up during routine analysis. In the past, you would have to remove the ion source, scrub the lens and other components, put it all back together, and recalibrate the instrument.

Now, there's a better way to clean your GC/MS ion source.

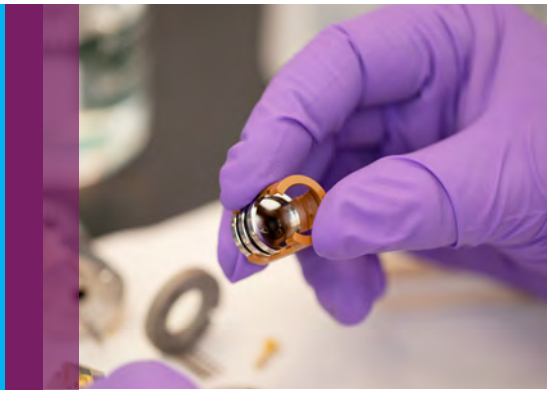
The patented Agilent JetClean self-cleaning ion source greatly reduces—or even eliminates—the need for source cleaning on Agilent single and triple quadrupole GC/MS systems. A controlled flow of hydrogen ensures that the ion source is kept free from contamination, protecting the integrity of your results. And there's no disassembly required.

With innovative JetClean technology, your lab can:

- Increase instrument uptime. Fewer manual cleanings maximize productivity.
- Maintain data quality. A clean ion source ensures run-to-run reproducibility.
- Enhance operator convenience. Automated cleaning requires virtually no user intervention.

What's more, JetClean technology accommodates any workflow. You can clean and analyze simultaneously, or clean when you're not acquiring data. Either way, JetClean delivers more uptime, more great results, and more data for your dollar.

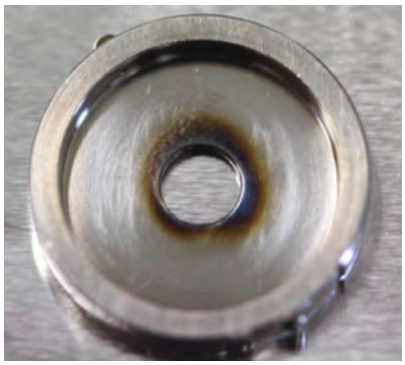
Reduce or Eliminate Manual Source Cleaning



JetClean uses a carefully controlled hydrogen flow to keep the ion source free from contamination. So you get more consistent results.

Replace the arduous task of manual source cleaning with effortless JetClean operation

With JetClean



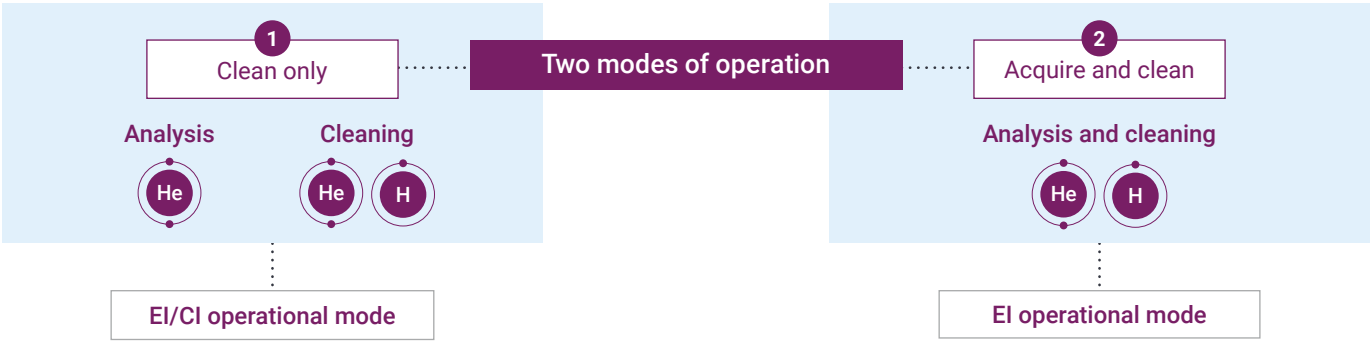
Without JetClean

Ion source comparison after hundreds of soil extract injections. With JetClean, no contamination was observed on the source and lenses, and consistent response was maintained.

Deposits were clearly present on the source without JetClean. These deposits impacted response stability and needed to be removed to maintain data quality.

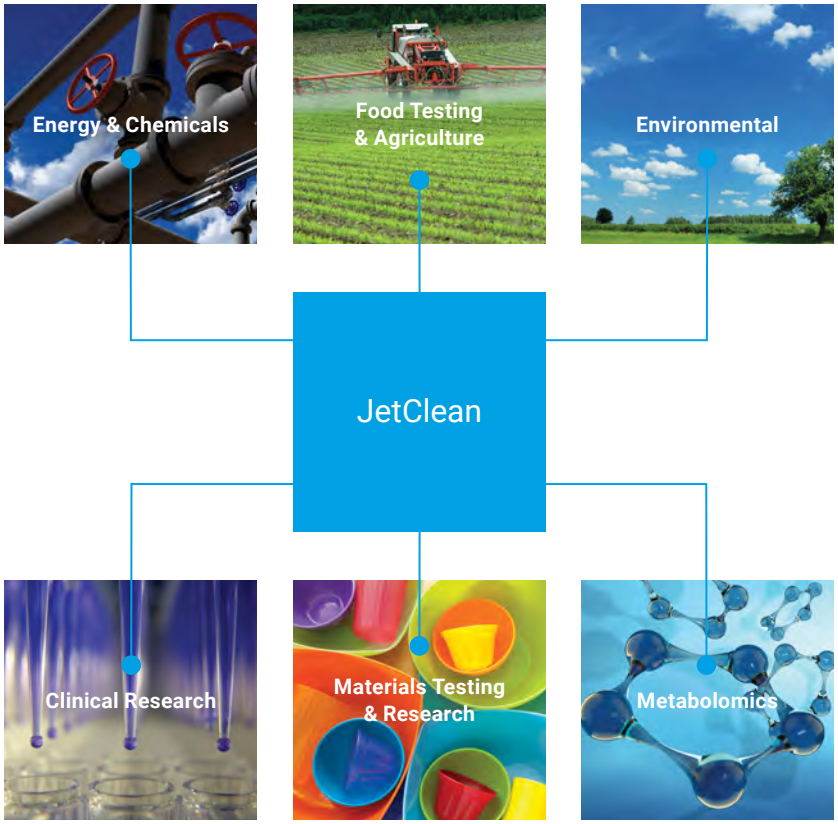
JetClean fits the way you work

The flexible process supports two modes of operation accommodating different analyses.



More uptime and more great results

Applicable for all the following markets and industries:



"Our laboratory carries out pesticide residue analysis with the Agilent 7000 GC/MS/MS… To satisfy SANCO-defined QA/QC specifications with [varied] samples, the GC/MS source usually had to be cleaned every two weeks. After installing the JetClean system, the frequency of the manual source cleaning has been greatly reduced. We now manually clean the source only once in every three months. This increased productivity and freed up operator time is greatly appreciated."

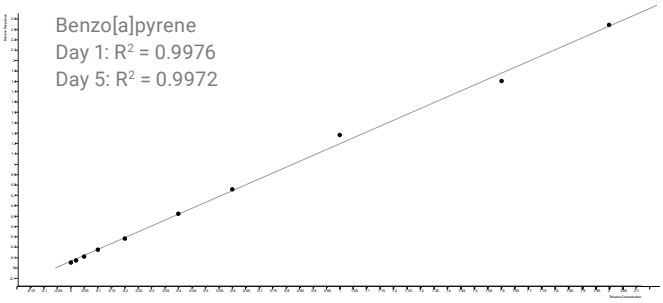
– **Jana Pulkrabova, PhD**
Head of the Department of Food Analysis and Nutrition
University of Chemistry and Technology, Prague

Maintain Reliable Data and Satisfy Demanding Quality-Control Criteria

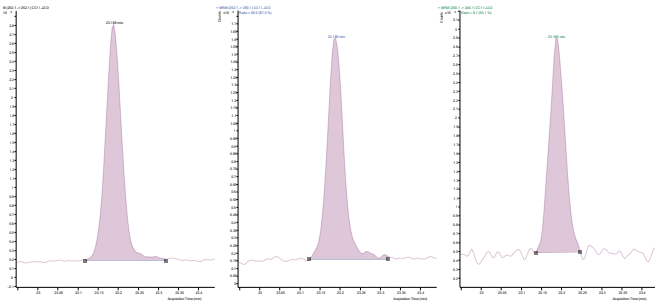
We measured polyaromatic hydrocarbons (PAHs) in palm oil after a simple toluene extraction. Various concentrations of calibration, QC samples, and palm oil extracts were analyzed during a 5-day, 200-injection evaluation. The results show consistently remarkable linearity and precision, low detection limits, and unmatched robustness.

Area %RSD (n=12)	Benzo[a]anthracene	Chrysene	Benzo[b]fluoranthene	Benzo[a]pyrene
Day 1	1.8	1.2	1.9	1.7
Day 5	2.9	4.3	2.8	4.9

The area response of 1 µg/kg spiked palm oil extract remained stable during the 5-day study, resulting in less than 5% area response RSD.



Excellent linearity: calibration ranging from 1 to 100 ng/mL with R^2 values > 0.997.



Quant and qualifier ion plots of Benzo[a]pyrene at 1 ng/mL. Robust signal and Gaussian peak shape were maintained during the study.

Putting JetClean to the test in a high-throughput metabolomics lab

The JetClean self-cleaning ion source delivered huge time savings when analyzing plant metabolites in a high-throughput research laboratory, without compromising data quality.

Manual cleanings per year

Without JetClean self-cleaning ion source

January X2	February X2	March X2
April X2	May X2	June X2
July X2	August X2	September X2
October X2	November X2	December X2

Twenty-four cleanings per year

With JetClean self-cleaning ion source*

January	February	March
April	May	June
July	August	September X1
October	November	December

One cleaning per year

Cleaning frequency reduced by **up to 90%**

** Cleaning frequency depends on application*

"We had to clean the ion source on our previous, non-Agilent GC/MS about once every two weeks. Since we started using the Agilent GC/MSD with JetClean, the source has been cleaned once in nine months. [That means] our instrument spends more time running samples and generating data—and our users spend less time having to remove, clean, and reinstall the source."

– **Dr. Noga Sikron Persi**
Ben-Gurion University Metabolomics Laboratory

How Much Could Your Lab Save by Cutting Cleaning Time by up to 90%?

See for yourself

Plug in the numbers that are relevant to your lab, and see the actual impact JetClean can have on your operation.

Number of manual cleanings per year	
Operator time per cleaning event (in hours)	
Hourly wages of operator	
Number of samples per eight-hour shift	
Revenue per sample	
Instrument downtime due to cleaning and recalibration (in hours)	

Actual savings are dependent on the application

Reset form

Potential cost savings you could achieve using JetClean

Cost Factor	Without JetClean	JetClean in Acquire-and-Clean Mode	JetClean in Clean-Only Mode
Number of manual cleanings or estimated cleanings per year			
Labor (wage) expense per cleaning event			
Yearly cleaning labor (wage) cost			
Revenue loss per cleaning event (downtime)			
Yearly revenue loss to cleaning (downtime)			
Yearly "cleaning cost" (wages + revenue loss)			
JetClean yearly savings			

▲ See how much your lab could save

Learn more:
agilent.com/chem/jetclean

Request a quote, or find a local
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