Agilent

Sustainable GC and GC/MS Operation
Tips and Tricks

72% of labs are working to reduce their carbon and global greenhouse gas emissions. 2023 Frost & Sullivan Survey

At Agilent, sustainability means empowering labs like yours to reduce environmental impact without compromising analytical performance. Backed by decades of scientific expertise and a deep focus on sustainable innovation, Agilent is your committed partner in supporting greener, more responsible science in your lab.

Use this guide to help reduce waste, energy use, and resource consumption in your GC and GC/MS workflows.

Easy sustainability wins without impacting your method

Use gas and power usage metrics under diagnostics to establish a baseline for tracking and reducing energy consumption.

Use a leak detector or diagnostics to verify system integrity for minimizing gas leaks and preventing unnecessary emissions.

Use gas saver mode to reduce gas flow during idle periods for lowering overall gas consumption.

Use sleep/wake modes to automate instrument downtime for cutting excess energy and gas usage.

Use the instrument schedule to optimize instrument uptime for lower resource consumption and better resource utilization.

Use early maintenance feedback counters to monitor consumables' lifespans and schedule proactive replacements for reducing waste and avoiding unplanned downtime.

Elevate your lab's sustainability game to the next level

Use peak evaluation to monitor for abnormal chromatographic peak shapes and tailing to avoid future reruns and sample conservation.

Evaluate alternative carrier gases that may be more abundant.

Decrease your helium usage by adding a helium conservation module.

Consider the Agilent HydroInert source for hydrogen carrier gas on GC/MS to enhance chromatography performance with a more sustainable carrier gas choice.

Evaluate converting to a dry scroll pump for GC/MS that eliminates the use of oil and reduces energy consumption.

Leverage the free GC calculators and method translator software to consider method optimization that leads to resource conservation.

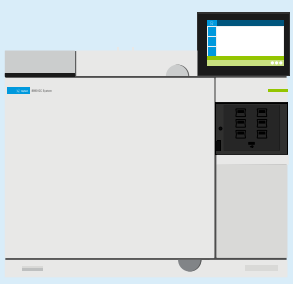
Switch to higher-efficiency columns, which could lead to shorter run times with less gas and energy consumption.

Use Agilent Self Tightening column nuts to help you maintain a consistent seal and mitigate future gas leaks.

To find out if any of these solutions may be right for you, consult an Agilent expert: **Contact us**

Shutdown advice

Turning off your GC or GC/MS isn't always the most sustainable approach. Shutdown introduces risk of contamination and extended periods of stabilization. Instead, use the sleep/wake mode, which can be configured to lower temperatures, gas flows, and pressures on the GC. Our recommended method for the Agilent 8890 GC cuts power use by 40% compared to ready mode, consuming just 3.5 kWh over 24 hours for a standalone GC-FID. Sleep will also be activated for the mass spec (GC/MSD, GC/TQ, and GC/Q-TOF) and headspace sampler when activated on the GC. For extended downtime like holidays or power outages, follow our shutdown instructions for GC, GC/MSD, GC/TQ, and GC/Q-TOF.



Retiring your system

When it's time to retire your system, don't forget to take advantage of the Agilent Trade-In and Buyback Program, where you earn cash for your system and give it a new life through the Agilent Certified Pre-Owned Instruments Program. Plus, don't worry about the planning, packaging, deinstallation, and return—we take care of it all.

Product transparency

Agilent is proud to participate in the My Green Lab ACT Ecolabel program that provides transparent, third-party verified data about the environmental impact of our lab equipment and supplies. Explore our ACT label database.

my green lab. ACT® Ecolabel

Even more sustainability tips and tricks

Agilent Community is a free, global forum where lab professionals connect to share knowledge, get expert advice, and find reliable answers fast.

Visit The Lab Sustainability Exchange forum using the link below to learn from the community and submit your own tips and tricks.

community.agilent.com/the-lab-sustainability-exchange

Not all features available on every instrument.

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