REDUCE HELIUM DEPENDENCE FOR GC AND GC/MS APPLICATIONS

Industry-wide helium shortages threaten lab workflow and productivity

Helium has long been the carrier gas of choice for GC and GC/MS analyses. However, the global helium shortage has reduced the availability – and increased the cost – of helium gas, jeopardizing the operations of labs that depend on gas chromatography.

As a result, many laboratories have considered transitioning their analytical systems to less expensive carrier gases – such as nitrogen or hydrogen – using method transition tools.

Switching carrier gas can be costly and disruptive

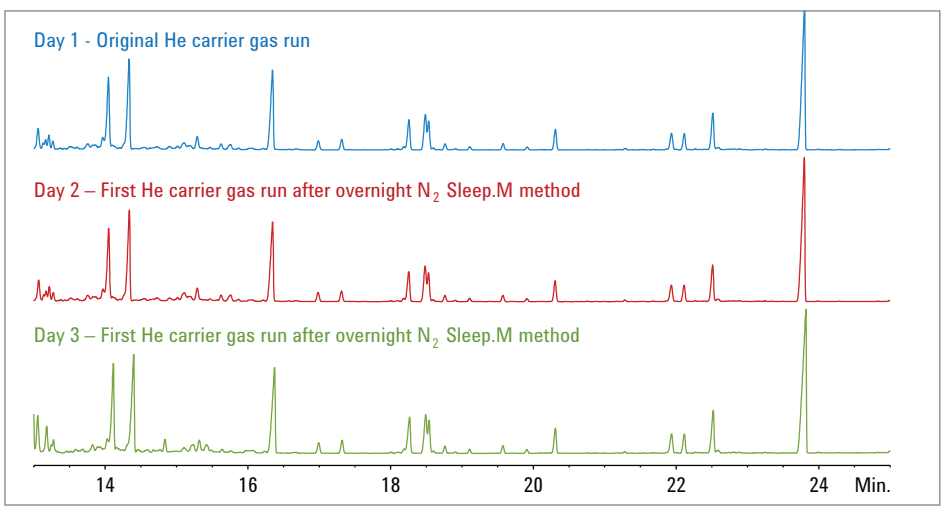
While converting to alternate carrier gases *can* help labs manage operating expenses and workflow, method translation is not always feasible.

For starters, concerns about laboratory safety or MS spectral fidelity may prohibit the use of hydrogen as a carrier. What's more, changing carrier gas requires method development and revalidation – particularly for labs operating in a controlled environment or facing the demands of regulatory compliance. These adjustments disrupt workflow, consuming time, money, and labor.

Instead of an alternate carrier... consider an alternate *approach*: helium conservation

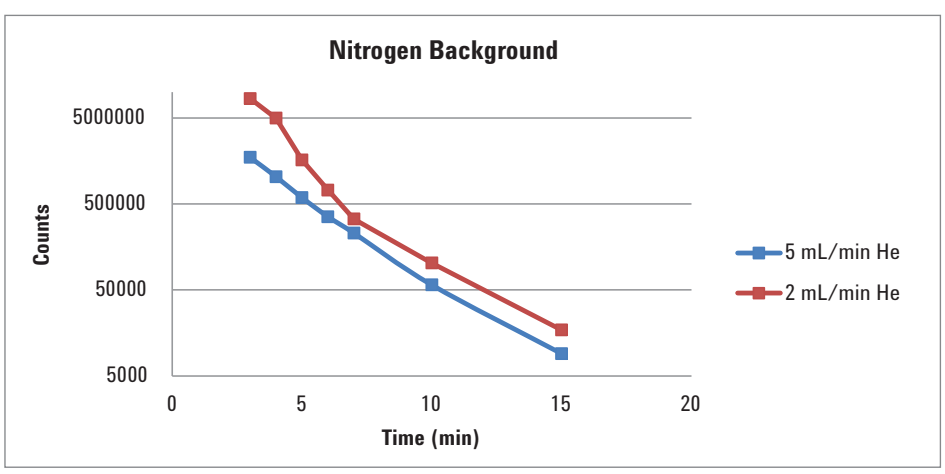
Laboratories that modify their existing SOPs to use helium more wisely can avoid the costs and productivity drawbacks associated with translating methods to an alternate carrier.

Reducing helium consumption also extends helium tank life, lessening the dependence on helium deliveries, and allowing labs to ensure business continuity by planning for future deliveries.



Conserve helium without sacrificing GC/FID performance.

Here, a Helium Conservation Module maintained chromatographic integrity following stand-by with nitrogen carrier gas.



Rapid transition from sleep mode to operational mode.

With emerging technologies, switching from N_2 standby to He carrier can take as little as 15 minutes.

Advanced technologies make helium conservation achievable

Features built into the **7890B GC system with OpenLAB CDS** allow operators to deploy sleep-wake functions that reduce helium (and energy) consumption. In addition, the new **Agilent Programmable Helium Conservation Module** works with the gas-saver functions of Agilent 7890-based GC, GC/MS, and GC/MS/MS systems to stretch the life of every helium tank.

The practical benefits of helium conservation include:

- **Less workflow disruption:** The Helium Conservation Module can extend the life of helium tanks, reducing the frequency of replacement – and the risk from missed deliveries
- **Seamless integration:** Carrier gas ID and set points are part of the analytical method for easy compliance and transfer
- **Greater reliability:** Integrated intelligence sends an alert if the system does not reach method set points
- **Rapid transition:** Switch from nitrogen stand-by to helium carrier is 15-30 minutes, depending on the GC detector
- **Safer operation:** Hydrogen carrier users can switch to nitrogen during system standby
- **Better analytical precision:** The Helium Conservation Module acts as an intermediate pressure regulator from the tank to the inlet EPC

Parameter	No conservation	Helium conservation
Daily He Usage (L)	112	21
He Cylinder Life (days)	**71**	**376**
Daily N_2 Usage (L)	0	24
N_2 Cylinder Life (days)	0	340
Yearly He Cost ($)	$1,537	$292
Yearly N_2 Cost ($)	$0	$64
Yearly Total Gas Cost ($)	$1,537	$356

Advantages of helium conservation for ASTM Method D4815 analyses.

Under standard operating conditions, conservation extended helium cylinder life to 12 months, and reduced gas costs by 40%.

Generate quality data and improve operational efficiency

Agilent innovations – including helium conservation – solve analytical problems. For more information on these advanced analytical systems, contact an Agilent Representative or visit **agilent.com/chem/contactus**. To learn more about practical ways to implement helium conservation, go to **agilent.com/chem/heliummodule**.