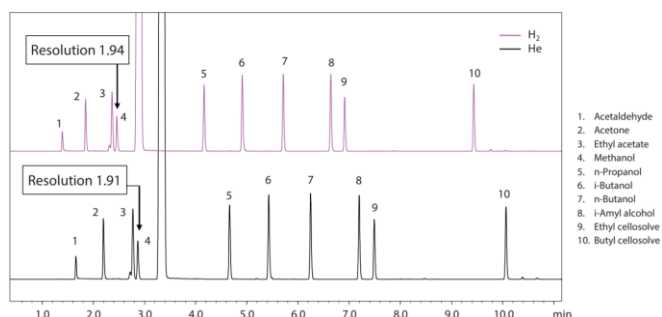
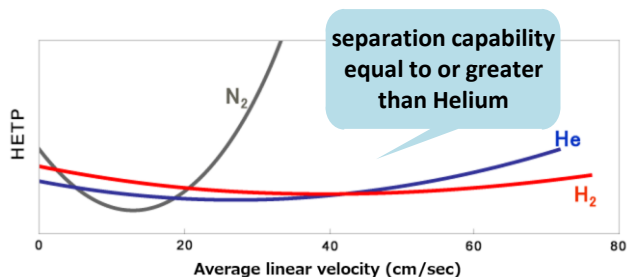


**Keywords:**

# Brevis GC-2050 # Nexis GC -2030 # Hydrogen Carrier # Hydrogen Sensor # Leak Prevention # Method Translators

# Hydrogen carrier operation using Nexis GC-2030 and Brevis GC-2050

Helium is the main carrier gas used in GC/GC-MS. However, it has become difficult to obtain helium cylinders due to covid-19 and the war in Ukraine. In recent years, there has been an active shift from using helium carrier to hydrogen carrier as an alternative. In order to solve the concerns about the safety of hydrogen and the method transfer, this paper introduces the safe hydrogen carrier operation using Nexis GC -2030 and Brevis GC-2050.



Comparison of H<sub>2</sub> carriers and He carriers (See Application News No. G 298.)

	separation	availability	safety
Helium	Good	Not Good	Good
Hydrogen	Good	Good	<b>Not Good</b>
Nitrogen	Not Good	Good	Good

**Nexis GC-2030 and Brevis GC-2050 support hydrogen carrier analysis to ensure safe use of hydrogen carriers.**

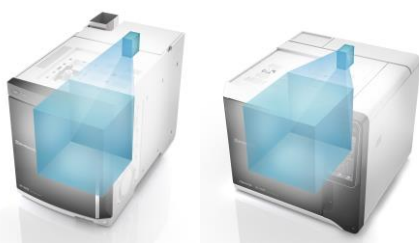
## Hydrogen carrier safety options

**New hydrogen sensor (HYS Ver2) has been released at September 4th 2023.**

**NEW**

### Hydrogen sensor

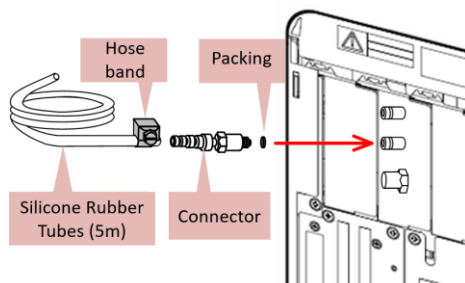
Use hydrogen carrier safer



Monitor the hydrogen concentration in the GC oven to detect potential leaks early. When a leak is detected, the instrument will automatically migrate to safe mode (Temperature control OFF/Open oven flap fully). If the hydrogen concentration continues to increase, the main power supply is automatically shut off to prevent accidents. The new hydrogen sensor HYS Ver2 is more durable than the previous model. Furthermore, you can check the hydrogen sensor status through the GC monitor and workstation.

### Hydrogen carrier exhaust tube

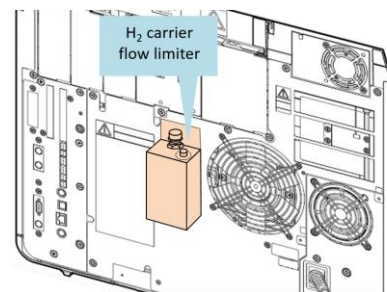
Exhaust hydrogen carrier safely



A large amount of carrier gas is discharged from the split vent during split analysis. A vent tube can be connected to the split vent to exhaust hydrogen outside the laboratory or to a safe place such as a laboratory hood to prevent hydrogen from being discharged into the laboratory.

### Hydrogen carrier flow limiter

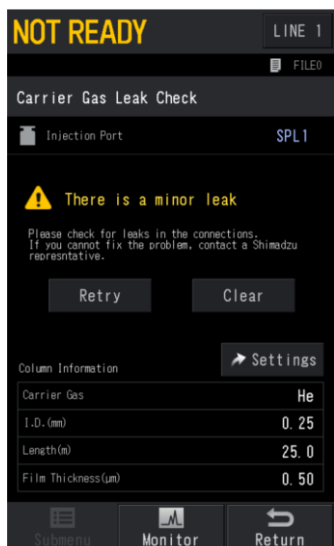
Limit maximum hydrogen flow



Adding a flow restrictor element upstream of the electronic flow controller prevents excessive flow of hydrogen in the event of a failure of the electronic flow controller or a misconnection of the piping. (For Brevis GC-2050, only the external type available.)

\*When GC-MS is used, it is recommended to arrange an inlet exclusively for hydrogen carrier. Please contact us for details.

## Leakage checking and prevention functions on the Nexis GC-2030 and Brevis GC-2050



### Automatic leak check function (Standard)

Nexis GC-2030 and Brevis GC-2050 have an automatic carrier gas leak check function. This function is installed as standard.

### Stainless Steel Tubing (Standard)

Copper piping, which is prone to hydrogen embrittlement, may often be used as GC piping. If copper piping is used, it may be necessary to replace the piping regularly. The Nexis GC-2030 and Brevis GC-2050 use stainless steel piping, which is resistant to hydrogen gas, as standard.



### Oven light (Options)

An optional oven light makes it easier to connect the column by illuminating the inside of the oven. (Only for Nexis GC-2030)



### ClickTek (Options)

By using ClickTek column connection technology, you can easily install GC columns with a single action completely tool free.

## Method Transition to Hydrogen Carrier in Nexis GC-2030 and Brevis GC-2050

### EZGC™ Method Translators

If you change the carrier gas, you must change the GC analysis parameters. Using the EZGC™ method translator provided by RESTEK makes it easy to change such analysis parameters.

**Easy to use!**

Enter the "Original method" you are using now and "Translation" carrier gas, column length, inner diameter, and thickness.

Automatic method translation

Carrier Gas	Original	Translation
	Helium	Helium

Column	
Length	30.00
Inner Diameter	0.25
Film Thickness	0.25
Phase Ratio	250

Control Parameters	
Column Flow	1.40
Average Velocity	
Inlet Pressure	psi
Outlet Pressure (abs)	0.00

Oven Program	
Number of Ramps (1-4)	1
Ramp Rate (°C/min)	8.5
Temp (°C)	330
Hold Time (min)	1

Control Method	
Constant Flow	

Results	
Run Time	0.00 min
Speed	0.00 x

\*Please refer to the EZGC™ method translator introduction material (TGGN-0042) for details.

<https://www.restek.com/ezgc-mtfc>



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