

# Stable Isotope Ratio Gases

## for Thermo Fisher Scientific IRMS



## Key Benefits

- Increase the analytical accuracy of your isotopic ratios, required compositions and targeted isotopic signatures for various gases
- Improve analyzer calibration efficiency
- Adjust isotopic composition for each of your products
- Get quick delivery with ready-to-ship standard products from your nearest Air Liquide affiliate

## Rely on an expert partner for your isotope ratio measurements

Isotope Ratio Mass Spectrometry (IRMS) is widely applied in Science and Technology touching the lives of all of us, such as climate research, food, forensics, geology, biology, hydrology, medical, environmental and life sciences, and many others.

The Thermo Scientific isotope ratio analysis product portfolio enables precise and accurate detection of isotope ratios and analysis of trace elements in a wide variety of applications.

Air Liquide's ALPHAGAZ™ product portfolio offers stable isotopically characterized gases in standard ranges with high analytical accuracy and targeted isotopic signatures to ensure accurate analysis and validation of IRMS instruments.

# ALPHAGAZ™ Stable Isotope Ratio Gases

A product range dedicated to stable isotopic analysis

ALPHAGAZ™ Pure Gases		Element	Data value	Uncertainty (%)	Source Variation (‰)
Carbon Dioxide	CO <sub>2</sub>	δ <sup>13</sup> C (‰ VPDB)	-25	±0,5	±3
	CO <sub>2</sub>	δ <sup>13</sup> C (‰ VPDB)	-3	±0,5	±3
Nitrogen	N <sub>2</sub>	δ <sup>15</sup> N (‰ Air)	0	±0,5	±3
Hydrogen	H <sub>2</sub>	δ <sup>2</sup> H (‰ VSMOW)	-250	±5	±30

Custom products with specific molecular (from ppm to %) and isotopic composition can be designed upon request.

## Convenient Cylinder & Regulator

### Non refillable cylinders:

- Gas volume CO<sub>2</sub>: 55 liters
- Gas volume N<sub>2</sub> and H<sub>2</sub>: 60 liters
- Nominal pressure: 30 - 37 bar (420 - 550 psig)
- Water volume: 1,6 Liter
- C10-5/8"-18 UNF standard
- Weight: 0,4 kg (0.8 lbs)

Other cylinder sizes and packages are available upon request.



### Low internal volume regulator:

- Model: 206BB, single-stage, brass regulator
- Compact and light weight
- Low internal dead volumes minimizes purging time
- Delivery Pressure Range: 0,1 - 5 bar
- Regulator Outlet: 1/4" NPT(F)
- Weight: 0,6 kg (1.3 lbs)

Other type of pressure regulators are available upon request.



Visit [thermofisher.com/IRMS](http://thermofisher.com/IRMS) to read more about applications using isotope fingerprints

- ✓ Strong expertise
- ✓ Easy to reach
- ✓ Reliable service

### Air Liquide Expertise Center

High purity gases, mixtures and related equipment for Research & Analysis

<http://airliquide-expertisecenter.com>

