



Edition: BP 2025 (Ph. Eur. 11.6 update)

Methane Intermix (2 per cent) in Nitrogen



[General Notices](#)

(Ph. Eur. monograph 2905)

Ph Eur

DEFINITION

A mixture containing 2 per cent V/V of [Methane \(2413\)](#) in [Low-oxygen nitrogen \(1685\)](#).

Content

1.9 per cent V/V to 2.1 per cent V/V of methane (CH₄) in nitrogen (N₂).

This monograph applies to methane intermix (2 per cent) in nitrogen used in the preparation of lung function test gas mixtures for medicinal use.

CHARACTERS

Appearance

Colourless gas.

IDENTIFICATION

- A. It complies with the limits of the assay.
- B. Gas chromatography ([2.2.28](#)).

Gas to be examined The substance to be examined.

Reference gas [Nitrogen R1](#).

Column:

- *material:* stainless steel;
- *size:* $l = 2\text{ m}$, $\text{Ø} = 2\text{ mm}$;
- *stationary phase:* [molecular sieve for chromatography R](#) (0.5 nm).

Carrier gas [helium for chromatography R](#).

Flow rate 20 mL/min.

Temperature:

— column: 80 °C;

— detector: 130 °C.

Detection Thermal conductivity.

Injection 10 µL.

Retention time Nitrogen = about 2 min.

Results The principal peak in the chromatogram obtained with the gas to be examined is similar in retention time to the principal peak in the chromatogram obtained with the reference gas.

TESTS

[Water \(2.5.28\)](#)

Maximum 10 ppm V/V.

ASSAY

Gas chromatography ([2.2.28](#)).

Gas to be examined The substance to be examined.

Reference gas Mixture containing 2.0 per cent V/V of [methane R1](#) in [nitrogen R1](#).

Column:

— material: stainless steel;

— size: $l = 2$ m, $\varnothing = 2$ mm;

— stationary phase: 3 per cent [squalane R](#) on alumina.

Carrier gas [helium for chromatography R](#).

Flow rate 20 mL/min.

Temperature:

— column: 100 °C;

— detector: 250 °C.

Detection Flame ionisation.

Injection 100 µL.

Retention time Methane = about 0.5 min.

Calculate the percentage content of CH₄.

STORAGE

As a compressed gas, in appropriate high-pressure cylinders complying with the legal regulations.

LABELLING

The label states the nominal content, in per cent V/V, of methane in nitrogen.

IMPURITIES

Specified impurities A.



A. water.

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