The Appendix is an integral part of
Certificate of Accreditation No. 262/2024 of 07/06/2024

Accredited entity according to ČSN EN ISO 17034:2017:

SIAD Czech spol. s r.o.
CAB Number 7503, Reference Material Production SIAD
U Sýpky 417, 664 61 Rajhradice

Reference materials:

Ordinal number	Matrix, artefact type	Nominal properties / characterized properties	Assignment of property values incl. measurements method
Certified RM – Gaseous mixtures			
1.	Gaseous binary mixtures of nitrogen with: helium (He) hydrogen (H_2) carbon dioxide (CO_2) propane (C_3H_8) methane (CH_4) carbon monoxide (CO) oxygen (O_2)	Ratio in the mixture (0.01 – 0.95) mol/mol (0.001 – 0.5) mol/mol (0.0001 – 0.3) mol/mol (0.005 – 8.5) mmol/mol (0.005 – 300) mmol/mol (0.1 – 300) mmol/mol (0.004 – 0.25) mol/mol	Gravimetric preparation from pure raw materials[1]
2.	Gaseous binary mixtures of nitrogen with: sulphur dioxide (SO_2) nitric oxide (NO) nitrogen dioxide (NO_2)	Ratio in the mixture (0.02 – 2.4) mmol/mol (0.02 – 2.0) mmol/mol (0.02 – 0.2) mmol/mol	Gravimetric preparation from gaseous mixtures, property assigned analytically[2]
3.	Gaseous binary mixtures of: gaseous elements[8], aliphatic hydrocarbons[7], carbon dioxide (CO_2) and carbon monoxide (CO)	Ratio of minority component (0.01 – 0.5) mol/mol	Gravimetric preparation from pure raw materials[3]
4.	Gaseous ternary mixtures of synthetic air[6] with: helium (He) hydrogen (H_2) carbon dioxide (CO_2) propane (C_3H_8) methane (CH_4) carbon monoxide (CO)	Ratio in the mixture (0.01 – 0.09) mol/mol (0.001 – 0.02) mol/mol (0.0001 – 0.3) mol/mol (0.005 – 8.5) mmol/mol (0.005 – 22) mmol/mol (0.1 – 55) mmol/mol	Gravimetric preparation from pure raw materials[3]
5.	Gaseous ternary mixtures of synthetic air[6] with: sulphur dioxide (SO_2) nitrogen dioxide (NO_2)	Ratio in the mixture (0.02 – 2.4) mmol/mol (0,02 – 0.2) mmol/mol	Gravimetric preparation from gaseous mixtures, property assigned analytically[2]

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Ordinal number	Matrix, artefact type	Nominal properties / characterized properties	Assignment of property values incl. measurements method
Certified RM – Gaseous mixtures			
6.	Gaseous multicomponent mixtures of: gaseous elements[8], aliphatic hydrocarbons[7], carbon dioxide (CO_2) and carbon monoxide (CO)	Ratio of minority component (0.0001– 0.3) mol/mol	Gravimetric preparation from pure raw materials [4]
7.	Gaseous multicomponent mixtures of nitrogen with: carbon monoxide (CO) carbon dioxide (CO_2) nitric oxide (NO) sulphur dioxide (SO2)	Ratio in the mixture (0.005 – 7.0) mmol/mol (0.05 – 0.2) mol/mol (0.02 – 2.0) mmol/mol (0.02 – 2.4) mmol/mol	Gravimetric preparation from gaseous mixtures, property assigned analytically[5]
8.	Gaseous binary mixtures of nitrogen with: carbon dioxide (CO_2) carbon monoxide (CO)	Ratio in the mixture (0.01 – 0.1) mmol/mol (0.005 – 0.1) mmol/mol	Gravimetric preparation from gaseous mixtures, property assigned analytically[5]
9.	Gaseous multicomponent mixtures of synthetic air[6] with: carbon dioxide (CO_2) carbon monoxide (CO)	Ratio in the mixture (0.01 – 0.1 mmol/mol (0.005 – 0.1) mmol/mol	Gravimetric preparation from gaseous mixtures, property assigned analytically[5]

Note: Gaseous mixtures are prepared in accordance with EN ISO 6142-1

Explanatory notes:

[1] analytical verification of concentration (GC – TCD/FID or coulometric method)
[2] analytical verification of concentration (IR or chemiluminescence method)
[3] analytical verification of identity of components (GC – TCD/FID)
[4] analytical verification of identity of raw materials (GC – TCD/FID)
[5] analytical verification of concentration (GC – TCD/FID, IR method, chemiluminescence method)
[6] synthetic air - mixture of nitrogen and oxygen with oxygen concentration max. 0.21 mol/mol
[7] aliphatic hydrocarbons - readily gasifiable alkanes and alkenes (C1 – C5)
[8] gaseous elements – nitrogen (N_2), argon (Ar), oxygen (O_2), helium (He), hydrogen (H_2), neon (Ne), krypton (Kr), xenon (Xe)

GC	Gas Chromatography
TCD/FID	Thermal Conductivity Detector / Flame Ionization Detector
IR	Infrared absorption spectroscopy

"This document is an appendix to the certificate of accreditation. In case of any discrepancies between the English and Czech versions, the Czech version shall prevail, both for the certificate appendix and the certificate itself. "