

ISO 2612:2023-12 (E)

Analysis of natural gas - Biomethane - Determination of ammonia content by tuneable diode laser absorption spectroscopy

Contents		Page
Foreword		v
Introduction		vi
1	Scope	1
2	Normative references	1
3	Terms and definitions	2
4	Safety precautions	3
5	Principle	3
6	Apparatus	3
6.1	NH ₃ analyser	3
6.2	Gas delivery system	3
6.3	Temperature sensor	4
6.4	Pressure sensor	4
6.5	Calibration equipment	4
6.5.1	General	4
6.5.2	Pressure regulators for the NH ₃ cylinders	4
6.5.3	Flow controller	4
6.5.4	Flow meter	4
6.5.5	Dilution device	4
6.5.6	Output manifold	5
7	Reagents and materials	5
7.1	Methane	5
7.2	Calibration gases	5
7.3	Inert gas	5
8	Sampling	5
8.1	General	5
8.2	Construction materials	5
8.3	Cleanliness	6
8.4	Installation of the calibration gas cylinder	6
8.5	Pressure control	6
8.6	Purging of reduction valve and transfer lines	6
8.7	Flow control	6
8.8	Leak control	7
9	Calibration	7
9.1	Calibration procedures	7
9.2	Frequency of calibration	7
9.2.1	Multipoint calibration	7
9.2.2	Zero and span point calibration	7
10	Interferences	7
10.1	Interfering absorbers	7
10.2	Matrix gas	7
10.3	Secondary level spectroscopic effects: Gas temperature, gas pressure, spatial homogeneity	8
10.4	Humidity and carbon dioxide	8
11	Measurement procedure	8

12	Expression of results	8
	12.1 Quantities and units.....	8
	12.2 Uncertainty.....	8
13	Test report	9
Annex A (informative)	Spectroscopic analyser performance characteristics for NH₃ analysis in biomethane	10
Bibliography		11