



4183

Accredited to
ISO 17034:2016

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

BOC Ltd

Issue No: 013 Issue date: 26 October 2018

Reference material production performed by the locations specified

DETAIL OF ACCREDITATION

Matrix / Artefact	Property Value(s) / Identity / Characterisation Range	Characterisation Procedure / Technique	Type* (CRM / RM)	Location Code
<u>Analysed Gases</u>				
Quaternary gas mixture	Carbon monoxide (3.5 %) Carbon dioxide (14 %) Propane (2000 ppm) Nitrogen (balance)	Measurement by a single, primary, definitive method at BOC	CRM	B
Binary gas mixtures	Propane/air (1.7 ppm to 1000 ppm) Carbon monoxide/nitrogen (2 ppm to 10 %) Carbon monoxide/air (2 ppm to 6.25 %) Carbon dioxide/nitrogen (0.1 % to 15 %) Nitric oxide/nitrogen (2 ppm to 1 %) Oxygen/nitrogen (0.5 % to 25 %) Sulphur dioxide/nitrogen (10 ppm to 3000 ppm)	Measurement by a single, primary, definitive method at BOC	CRM	B
Ethanol in air calibration standard for evidential breath testing	Ethanol/air 35 µg per 100 ml air (191.4 ppm) 22 µg per 100 ml air (120.3 ppm) 9 µg per 100 ml air (49.2 ppm)	Measurement by a single, primary, definitive method at BOC	CRM	B
Natural gas	Methane (55 % to 100 %) Ethane (0.008 % to 11 %) Propane (0.01 % to 8 %) <i>i</i> -Butane (0.004 % to 1.2 %) <i>n</i> -Butane (0.004 % to 1.3 %) <i>i</i> -Pentane (0.003 % to 0.4 %) <i>n</i> -Pentane (0.003 % to 0.4 %) <i>neo</i> -Pentane (0.002 % to 0.4 %) Hexane (0.0009 % to 0.35 %) Nitrogen (0.02 % to 20.4 %) Carbon Dioxide (0.09 % to 12 %)	Measurement by a single, primary, definitive method at BOC. Certification of Natural Gas mixtures against nationally traceable gas reference standards using gas chromatography in accordance with ISO 6143:2006	CRM	C
	Calculated values for: Gross Calorific Value Net Calorific Value Relative density Density Gross Wobbe Index Net Wobbe Index Mean Molecular Mass Compression Factor	Calculation of physical properties in accordance with BS EN ISO 6976:2005 or BS EN ISO 6976:2016		C



4183

Accredited to
ISO 17034:2016

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

BOC Ltd

Issue No: 013 Issue date: 26 October 2018

Reference material production performed by the locations specified

Matrix / Artefact	Property Value(s) / Identity / Characterisation Range	Characterisation Procedure / Technique	Type* (CRM / RM)	Location Code
<u>Analysed Gases</u> (cont'd)				
Gas mixtures	C ₁ to C ₃ (0.0008 % to 100 %) C ₄ (0.001 % to 50 %) C ₅ (0.001 % to 9 %) C ₆ (0.001 % to 1.5 %) C ₇ (0.001 % to 0.5 %) C ₈ (0.001 % to 0.2 %) C ₉ (0.001 % to 0.2 %) C ₁₀ (0.001 % to 0.05 %) Benzene (0.001 % to 1 %) Toluene (0.001 % to 0.4 %) Xylenes, m, p and o (0.001 % to 0.1 %) Argon (0.1 % to 100 %) Carbon dioxide (0.03 % to 100 %) Carbon monoxide (0.001 % to 100 %) Helium (0.1 % to 100 %) Hydrogen (0.08 % to 100 %) Nitrogen (0.1 % to 100 %) Oxygen (0.05 % to 100 %)	Measurement by a single, primary, definitive method at BOC Multi-component gaseous mixtures prepared by gravimetry in accordance with ISO 6142:2006 with analytical validation against traceable standards Where more than 5 components fall within the above scope for Natural gas, certification shall be using nationally traceable gas reference standards	CRM	C

END

***Type**

CRM = Certified Reference Material(s)

RM = Reference Material(s)

Refer to ISO 17034 for full definitions