


# Schedule of Accreditation

issued by

## United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

 <p><b>UKAS</b> REFERENCE MATERIALS</p> <p><b>5710</b></p> <p>Accredited to ISO 17034:2016</p>	<p><b>EffecTech Limited</b></p> <p><b>Issue No: 007    Issue date: 05 December 2025</b></p>	
	<p>Dove House Dove Fields Uttoxeter Staffordshire ST14 8HU</p>	<p><b>Contact: Dr Joey Walker</b> <b>Tel: +44 (0)1889 569229</b> <b>E-Mail: joey.walker@effectech.co.uk</b> <b>Website: www.effectech.co.uk</b></p>

Reference material production at the above address

### DETAIL OF ACCREDITATION

Matrix / Artefact	Property Value(s) / Identity / Characterisation Range	Characterisation Procedure / Technique	Type* (CRM / RM)
SYNTHETIC NATURAL GAS MIXTURES	amount fraction                      (% mol/mol)	Production of Certified Reference Materials to in house method PR039 and value assignment by in house method TM001/UT	CRM
	nitrogen                                      (0.1 to 22)		
	carbon dioxide                              (0.05 to 15)		
	methane                                      (34 to 100)		
	ethane                                      (0.1 to 35)		
	propane                                      (0.05 to 15)		
	iso-butane                                      (0.01 to 2)		
	n-butane                                      (0.01 to 2)		
	neo-pentane                                      (0.002 to 0.35)		
	iso-pentane                                      (0.005 to 0.35)		
	n-pentane                                      (0.005 to 0.35)		
	n-hexane                                      (0.001 to 0.35)		
	2-methylpentane                                      (0.001 to 0.35)		
	3-methylpentane                                      (0.001 to 0.35)		
	2,2-dimethylbutane                                      (0.001 to 0.35)		
	benzene                                      (0.001 to 0.2)		
	cyclohexane                                      (0.001 to 0.2)		
	n-heptane                                      (0.001 to 0.2)		
	toluene                                      (0.001 to 0.1)		
	methylcyclohexane                                      (0.001 to 0.1)		
	n-octane                                      (0.0005 to 0.05)		
	n-nonane                                      (0.0005 to 0.02)		
	n-decane                                      (0.0005 to 0.005)		
	helium                                      (0.005 to 0.2)		
	hydrogen                                      (0.05 to 20)		
	oxygen                                      (0.05 to 3)		



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SYNTHETIC NATURAL GAS MIXTURES (cont'd)	amount fraction (% mol/mol)	Production of Certified Reference Materials to in house method PR039 and value assignment by in house method TM026/UT	CRM
	oxygen (0.001 to 22.5)		
	superior calorific value molar basis (kJ.mol <sup>-1</sup> ) mass basis (MJ.kg <sup>-1</sup> ) volume basis (MJ.m <sup>-3</sup> ) inferior calorific value molar basis (kJ.mol <sup>-1</sup> ) mass basis (MJ.kg <sup>-1</sup> ) volume basis (MJ.m <sup>-3</sup> ) relative density density (kg.m <sup>-3</sup> ) superior Wobbe index (MJ.m <sup>-3</sup> ) inferior Wobbe index (MJ.m <sup>-3</sup> ) molar mass (kg.kmol <sup>-1</sup> ) compression factor	Values calculated by <b>ISO 6976:1995</b> (including amendment No 1, May 1998) on a <i>real</i> or <i>ideal</i> gas basis assuming mixture is dry (free from water)  Combustion properties can be expressed in units of the Joule (J) or in kilowatt hours (kWh)	CRM
	gross calorific value molar basis (kJ.mol <sup>-1</sup> ) mass basis (MJ.kg <sup>-1</sup> ) volume basis (MJ.m <sup>-3</sup> ) net calorific value molar basis (kJ.mol <sup>-1</sup> ) mass basis (MJ.kg <sup>-1</sup> ) volume basis (MJ.m <sup>-3</sup> ) relative density density (kg.m <sup>-3</sup> ) gross Wobbe index (MJ.m <sup>-3</sup> ) net Wobbe index (MJ.m <sup>-3</sup> ) molar mass (kg.kmol <sup>-1</sup> ) compression factor	Values calculated by <b>ISO 6976:2016</b> on a <i>real</i> or <i>ideal</i> gas basis assuming mixture is dry (free from water)  Combustion properties can be expressed in units of the Joule (J) or in kilowatt hours (kWh)	CRM



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SYNTHETIC NATURAL GAS MIXTURES (cont'd)	gross heating value net heating value relative density compressibility factor	Values calculated by methods given in <b>GPA 2172-19</b> (2019) using data tables from <b>GPA 2145-16</b>	CRM
	gross heating value net heating value relative density density compressibility factor	Values calculated by methods given in <b>ASTM D3588-98</b> (2017) using data tables from <b>GPA 2145-16</b>	CRM
SULPHUR GAS MIXTURES	amount fraction (µmol/mol)	Production of Certified Reference Materials to in house method PR039 and value assignment by in house method TM002/UT	CRM
	hydrogen sulphide (0.2 to 10)		
	carbonyl sulphide (0.2 to 10)		
	methanethiol (methyl mercaptan) (0.2 to 10)		
	ethanethiol (ethyl mercaptan) (0.2 to 10)		
	dimethyl sulphide (0.2 to 10)		
	1-propanethiol (n-propyl mercaptan) (0.2 to 10)		
	2-propanethiol (iso-propyl mercaptan) (0.2 to 10)		
	ethyl methyl sulphide (methyl ethyl sulphide) (0.2 to 10)		
	1-butanethiol (n-butyl mercaptan) (0.2 to 10)		
	2-methyl-2-propanethiol (tert-butyl mercaptan) (0.2 to 10)		
	2-methyl-1-propanethiol (iso-butyl mercaptan) (0.2 to 10)		
	1-methyl-1-propanethiol (sec-butyl mercaptan) (0.2 to 10)		
	diethyl sulphide (0.2 to 10)		
	n-hexyl mercaptan (0.2 to 10)		
	tetrahydrothiophene (THT) (0.2 to 10)		



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BINARY EMISSION GAS MIXTURES	amount fraction	(% mol/mol)	Production of Certified Reference Materials to in house method PR039 and value assignment by in house method TM014	CRM
	oxygen in nitrogen	(0.5 to 25)		
	methane in nitrogen	(0.1 to 5)		
	methane in synthetic air	(0.1 to 2.5)		
	amount fraction	(µmol/mol)	Production of Certified Reference Materials to in house method PR039 and value assignment by in house method TM014	CRM
	carbon monoxide in nitrogen or synthetic air	(10 to 1000)		
	nitric oxide in nitrogen	(10 to 600)		
	nitrogen dioxide in synthetic air	(5 to 500)		
	sulphur dioxide in nitrogen or synthetic air	(10 to 1000)		
	BINARY EMISSION GAS MIXTURES	amount fraction	(% mol/mol)	Production of Certified Reference Materials to in house method PR039 and value assignment by in house method TM025
carbon dioxide in nitrogen or synthetic air		(0.1 to 15)		
amount fraction		(µmol/mol)	Production of Certified Reference Materials to in house method PR039 and value assignment by in house method TM025	CRM
propane in nitrogen or synthetic air		(3 to 100)		
amount fraction		(% mol/mol)	Production of Certified Reference Materials to in house method PR039 and value assignment by in house method TM026/UT	CRM
oxygen in nitrogen	(0.001 to 22.5)			
END				



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**\* Type**

CRM= Certified Reference Material(s)

RM = Reference Material(s)

*Refer to ISO 17034 for full definitions*