

Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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

 <p>Accredited to ISO/IEC 17025:2005</p>	EffecTech Limited	
	Issue No: 024 Issue date: 02 December 2016	
	Dove House Dove Fields Uttoxeter Staffordshire ST14 8HU	Contact: Dr Gavin Squire Tel: +44 (0)1889 569229 Fax: +44 (0)1889 569220 E-Mail: gavin.squire@effectech.co.uk Website: www.effectech.co.uk
Testing performed by the Organisation at the locations specified below		

Locations covered by the organisation and their relevant activities

Laboratory locations:

Location details	Activity	Location code
Address EffecTech Limited Dove House Dove Fields Uttoxeter Staffordshire ST14 8HU	Local contact Dr Gavin Squire Tel: +44 (0)1889 569229 Fax: +44 (0)1889 569220 Email: gavin.squire@effectech.co.uk	Gas Testing Uttoxeter
Address N-163 MIDC Tarapur Boisar District Thane - 401506 Maharashtra India	Local contact Padmakar Tillu Tel: +91 (0)2525 276137 Fax: +91 (0)2525 276827 Email: padmakar.tillu@effectech.co.in	Gas Testing Tarapur
Address Gate 3, Street 42 Salwa Industrial Area PO Box 16069 Doha State of Qatar	Local contact Simon Trillo Tel: +974 55 79 5245 Fax: +974 44 51 5319 Email: simon.trillo@effectech.com.qa	Gas Testing Qatar



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DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
NATURAL GAS	<u>Chemical Analysis</u> amount fraction (%mol/mol)	In-house method TM001	Uttoxeter
	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 2.0 n-butane 0.01 to 2.0 neo-pentane 0.005 to 0.35 iso-pentane 0.005 to 0.35 n-pentane 0.005 to 0.35 C ₆ + [1] 0.005 to 0.35 2-methylpentane 0.0001 to 0.10 3-methylpentane 0.0001 to 0.10 2,2-dimethylbutane 0.0001 to 0.10 n-hexane 0.0001 to 0.10 hexanes [2] 0.0001 to 0.10 benzene 0.0001 to 0.10 cyclohexane 0.0001 to 0.10 n-heptane 0.0001 to 0.10 heptanes [2] 0.0001 to 0.10 toluene 0.0001 to 0.10 methylcyclohexane 0.0001 to 0.10 n-octane 0.0001 to 0.05 octanes [2] 0.0001 to 0.05 n-nonane 0.0001 to 0.02 nonanes [2] 0.0001 to 0.02 n-decane 0.0001 to 0.005 decanes [2] 0.0001 to 0.005 helium 0.0011 to 0.20 hydrogen 0.0005 to 0.20 oxygen 0.001 to 1.0 argon 0.0005 to 0.05 <u>Calculated values</u> calorific value (superior) calorific value (inferior) relative density, density Wobbe Index mean molecular mass compression factor	Analysis of natural gas using gas chromatography [1] the sum of all hydrocarbons containing six carbon atoms or greater [2] the amount fraction of a grouped component is the sum of all isomers in that group except for those identified separately	
	calorific value (superior) calorific value (inferior) relative density, density Wobbe Index mean molecular mass compression factor	Calculated values according to ISO 6976:1995 (E) including amendment No 1, May 1998	Uttoxeter



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
NATURAL GAS (cont'd)	<u>Chemical Analysis (cont'd)</u> <u>Calculated values</u> carbon emission factor (gross) carbon emission factory (net) carbon emission factory (quantity)	In-house method TM001 (cont'd) Calculated values according to the COMMISSION DECISION of 18/VII/2007 establishing guidelines for the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC of the European Parliament and of the Council of Brussels, 18/VII/2007 C (2007) 3416 final (publ EU Commission 18th July 2007)	Utoxeter
	amount fraction (%mol/mol) nitrogen 0.1 to 12 carbon dioxide 0.05 to 8 methane 64 to 100 ethane 0.1 to 14 propane 0.05 to 8 iso-butane 0.01 to 1.2 n-butane 0.01 to 1.2 neo-pentane 0.005 to 0.35 iso-pentane 0.005 to 0.35 n-pentane 0.005 to 0.35 2-methylpentane 0.005 to 0.10 3-methylpentane 0.005 to 0.10 2,2-dimethylbutane 0.005 to 0.10 n-hexane 0.005 to 0.10 hexanes [2] 0.005 to 0.10 benzene 0.005 to 0.10 cyclohexane 0.005 to 0.10 n-heptane 0.0025 to 0.10 heptanes [2] 0.0025 to 0.10 toluene 0.005 to 0.10 methylcyclohexane 0.005 to 0.10 n-octane 0.0005 to 0.05 octanes [2] 0.0005 to 0.05 n-nonane 0.0005 to 0.02 nonanes [2] 0.0005 to 0.02 n-decane 0.0005 to 0.005 decanes [2] 0.0005 to 0.005 oxygen 0.005 to 1.0	In-house methods TM005 and TM022 Analysis of natural gas using gas chromatography [2] the amount fraction of a grouped component is the sum of all isomers in that group except for those identified separately	Tarapur and Qatar



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
NATURAL GAS (cont'd)	<u>Chemical Analysis</u> (cont'd) <u>Calculated values</u> calorific value (superior) calorific value (inferior) relative density, density Wobbe Index mean molecular mass compression factor	In-house methods TM005 and TM022 (cont'd) Calculated values according to ISO 6976:1995 (E) including amendment No 1, May 1998	Tarapur and Qatar
	amount fraction (ppm mol/mol) hydrogen sulphide 0.05 to 10 carbonyl sulphide 0.05 to 10 methanethiol (methyl mercaptan) 0.05 to 10 ethanethiol (ethyl mercaptan) 0.05 to 10 2-methyl-2-propanethiol (tert-butyl mercaptan) 0.05 to 10 propanethiol (n-propyl mercaptan) 0.05 to 10 butanethiol (n-butyl mercaptan) 0.05 to 10 2-propanethiol (iso-propyl mercaptan) 0.05 to 10 dimethyl sulphide 0.05 to 10 ethyl methyl sulphide (methyl ethyl sulphide) 0.05 to 10 diethyl sulphide 0.05 to 10 tetrahydrothiophene (THT) 0.05 to 10	In-house method TM002 Analysis of natural gas using gas chromatography with sulphur chemiluminescence detection (SCD)	Uttoxeter
PETROLEUM AND PETROLEUM PRODUCTS	<u>Chemical Analysis</u> water content 0.001 % to 5.0 % by mass density 0.68 g/ml to 0.97 g/ml stabilised condensate composition to nC ₃₆	In-house method TM007 based on IP386 In-house method TM008 based on IP365 In-house method TM009 using gas chromatography	Uttoxeter
END			