


Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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

 <p>UKAS TESTING</p> <p>4379</p> <p>Accredited to ISO/IEC 17025:2017</p>	<p>SGS United Kingdom Limited</p> <p>Issue No: 029 Issue date: 22 April 2021</p>	
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<p>Testing performed at the above address only</p>		

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
<p>PETROLEUM AND PETROLEUM PRODUCTS</p> <p>Crude Oil</p>	Chemical and Physical Tests	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented SGS UK corporate procedure OGC-GEN-1QP-018
	Appearance	ASTM E2680 Visual inspection
	Colour (Pt/Co)	ASTM D5386
	Density/Specific gravity	IP 365 ASTM D4052
	Distillation at atmospheric pressure	ASTM D86
	Flash Point	ASTM D93 Pensky Martens Closed Cup (PMCC)
	Organic halogens as chlorine	IP 510 by Microcoulometric
	Refractive index	ASTM D1218
	Water content	ASTM E203 by Karl Fisher
	Sulphur content	ASTM D2622 by WD-XR



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	Chemical and Physical Tests (cont'd)	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented SGS UK corporate procedure OGC-GEN-1QP-018 (cont'd)
AROMATIC HYDROCARBONS	Total sulphur	ASTM D7183 by UV Fluorescence
BITUMEN	Penetration	IP 49
	Softening point	IP 58
	Hydrocarbon composition	IP 405, ISO 7941:1988 Gas Chromatography
Ethane Propane Propene iso-Butane n-Butane Trans-2-butene 1-Butene Isobutene Cis-2-butene neo-pentane iso-pentane n-pentane 1-3 Butadiene		
LPG (Propane, butane, isobutane)	Hydrocarbon composition Ethane Propane Propene iso-Butane n-Butane Trans-2-butene 1-Butene Isobutene Cis-2-butene neo-pentane iso-pentane n-pentane 1-3 Butadiene	ASTM D2163 Gas Chromatography
	Mercury	ASTM D6350 (Modified) Atomic Fluorescence Spectroscopy



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LIQUID PETROLEUM HYDROCARBONS	Total mercury	UOP 938 Mercury Analyser Atomic Fluorescence
	Chemical and Physical Tests (cont'd)	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented SGS UK corporate procedure OGC-GEN-1QP-018 (cont'd)
LIQUID PETROLEUM HYDROCARBONS (cont'd)	Trace nitrogen	ASTM D4629 Chemiluminescence
LIGHT HYDROCARBON, DIESEL, ENGINE OIL, SPARK IGNITION	Cetane Number	ASTM D613
	Individual components in spark ignition engine fuels	ASTM D6733 by Gas Chromatography
	Motor Octane Number (MON)	ASTM D2700-01 (Historical)
	Research Octane Number (RON)	ASTM D2699-01 (Historical)
	Total sulphur	ASTM D5453 UV Fluorescence
NAPHTHAS	Detailed analysis of petroleum naphthas	ASTM D5134 by Gas Chromatography
NATURAL GAS	Composition to C ₁₀ (as per table 1 of method)	ASTM D1945 Gas Chromatography
	Calorific value, density, relative density and Wobbe index from the composition of gaseous fuels	ISO 6976 calculation based on GC data
	Mercury	ASTM D6350 Atomic Fluorescence Spectroscopy
	Mono-ethylene Glycol (MEG) content	OGC-MID-PRO-LAB-016 Thermal desorption of sampling tubes and Gas Chromatography



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REFINERY GAS	<u>Chemical Tests</u> Composition (as per section 1 of method) Mol % Hydrogen 0.01 to 100.0 Oxygen/Argon 0.01 to 21.0 Nitrogen 0.01 to 78.1 Carbon Monoxide 0.01 to 5.0 Carbon Dioxide 0.01 to 25.0 Dihydrogen Sulphide 0.01 to 1.0 Methane 0.01 to 100.0 Ethane 0.01 to 100.0 Ethene 0.01 to 100.0 Ethyne 0.01 to 1.0 Propane 0.01 to 7.0 Propene 0.01 to 100.0 Propyne 0.01 to 3.0 Propadiene 0.01 to 1.0 Isobutane 0.01 to 6.0 n-Butane 0.01 to 4.0 trans-2-Butene 0.01 to 2.6 1-Butene 0.01 to 2.0 2-Methylpropene 0.01 to 2.0 Cis-2-Butene 0.01 to 2.4 1,3-Butadiene 0.01 to 3.0 Isopentane 0.01 to 1.0 n-Pentane 0.01 to 1.0 C5+ 0.01 to 9.0	BS EN 15984
SOILS	Determination of Extractable Petroleum Hydrocarbons (EPH) C ₁₀ to C ₃₆	Documented In-House Method OGC-MID-PRO-LAB-012 Using GC-FID and meeting the requirements of the Environment Agency MCERTS Performance Standard – chemical testing of soil
TRADE EFFLUENTS	<u>Chemical Tests</u> Ammonia as Nitrogen Chemical Oxygen Demand (COD) Biochemical Oxygen Demand (BOD)	Documented In-House Methods: OGC-MID-PRO-LAB-009 by Aquakem Discrete Analyser OGC-MID-PRO-LAB-011 by Aquakem Discrete Analyser OGC-MID-PRO- LAB-003



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TRADE EFFLUENTS (cont'd)	<p><u>Chemical Tests (cont'd)</u></p> <p>Metals: Aluminium, Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Mercury, Molybdenum, Nickel, Selenium, Thallium, Thorium, Uranium, Vanadium and Zinc</p> <p>Volatile Organic Compounds (VOC): Di ethyl ether 1,1-dichloroethene Methyl iodide 1,1,2-trichloroethane Allyl chloride CS₂ t-1,2-dichloroethene 1,1-dichloroethane Chloroprene cis-1,2-dichloroethene Bromochloromethane Trichloromethane 2,2-dichloropropane Tetrahydrofuran 1,2-dichloroethane 1,1,1-trichloroethane 1,1-dichloroprop-1-ene CCl₄ Benzene Dibromomethane 1,2-dichloropropane Trichloroethylene Bromodichloromethane cis-1,3-dichloropropene trans-1,3-dichloropropene 1,1,2-trichloroethane Toluene 1,3-dichloropropane Dibromochloromethane 1,2-dibromoethane Tetrachloroethylene 1,1,1,2-tetrachloroethane Chlorobenzene</p>	<p>Documented In-House Methods:</p> <p>OGC-MID-PRO-LAB-008 by ICP-MS</p> <p>OGC-MID-PRO-LAB-010 based on USEPA Method 8260c by Headspace GC/MS</p>



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TRADE EFFLUENT (cont'd)	<u>Chemical Tests (cont'd)</u> Volatile Organic Compounds (VOC) (cont'd): Ethyl benzene Meta & Para Xylenes Tribromomethane cis-1,4-dichlorobutene Styrene 1,1,2,2-tetrachloroethane Ortho Xylene trans-1,4-dichlorobutene 1,2,3-trichloropropane iso-propyl benzene Bromobenzene n-Propyl benzene 2-Chlorotoluene 4-Chlorotoluene 1,3,5-Trimethyl benzene Pentachloroethane Tert-butyl benzene 1,2,4-trimethyl benzene Sec-butyl benzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 4-iso-propyltoluene 1,2-Dichlorobenzene Butyl benzene 1,2-Dibromo-3-chloro propane 1,2,4-trichlorobenzene Naphthalene Hexachlorobutadiene 1,2,3-Trichloro benzene	OGC-MID-PRO-LAB-010 based on USEPA Method 8260c by Headspace GC/MS (cont'd)
WATERS Ground water and saline water Ground water, trade effluent, land and prepared leachate, surface water and process water	<u>Chemical Tests</u> Determination of Extractable Petroleum Hydrocarbons (EPH) C ₁₀ to C ₃₆ pH Conductivity	OGC-MID-PRO-LAB-012 Using GC-FID OGC-MID-PRO-LAB-013 based on ASTM D1293 OGC-MID-PRO-LAB-014 based on ASTM D1125



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WATERS (cont'd)	<u>Chemical Tests</u> (cont'd)	
Ground water, trade effluent and surface water	Suspended Solids	OGC-MID-PRO-LAB-015 based on BS EN 872:2005
BIOFUELS	<u>Chemical Tests</u>	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented SGS UK corporate procedure OGC-GEN-1QP-018
Solid biofuels	Total Moisture	BS EN ISO 18134-2 using Gravimetric Determination
	Analysis Moisture	BS EN ISO 18134-3 using Gravimetric Determination
	Ash	BS EN ISO 18122 using Gravimetric Determination
	Carbon, Hydrogen, Nitrogen	BS EN ISO 16948 using Combustion Analyser
	Calorific value	BS EN ISO 18125 using Bomb Calorimetry
	Sulphur and Chlorine	BS EN ISO 16994 using Ion Chromatography
Solid recovered fuels	Total Moisture	BS EN 15414-2 using Gravimetric Determination
	Analysis Moisture	BS EN 15414-3 using Gravimetric Determination
	Ash	BS EN 15403 using Gravimetric Determination
	Carbon, Hydrogen, Nitrogen	BS EN 15407 using Combustion Analyser
	Calorific value	BS EN 15400 using Bomb Calorimetry



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BIOFUELS	<u>Chemical Tests</u>	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented SGS UK corporate procedure OGC-GEN-1QP-018
Solid recovered fuels (cont'd)	Sulphur, Fluorine, Bromine and Chlorine Biomass Content	BS EN 15408 using Ion Chromatography BS EN 15440 using Selective Dissolution Method
END		