


Schedule of Accreditation

issued by

United Kingdom Accreditation Service

21 - 47 High Street, Feltham, Middlesex, TW13 4UN, UK

 <p>0615</p> <p>Accredited to ISO/IEC 17025:2005</p>	<h3>SGS United Kingdom Limited</h3> <p>Issue No: 022 Issue date: 08 April 2011</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
PETROLEUMS and PETROLEUM PRODUCTS including jet fuel	<u>Chemical and Physical Tests</u>	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented in house procedures R-Gen-1QP142 and 143 # IP Equivalent ISO Standard
	Acid Numbers: Total acid number Strong acid number	ASTM D664 Potentiometric Titration
	Aniline and mixed aniline point	IP 2 ASTM D611 Method A # ISO 2977
	Ash	IP 4 ASTM D482 # ISO 6245
	Asphaltenes	IP 143 ASTM D6560
	Burning Test: 24 hrs (Char value)	IP 10
	Carbon, Hydrogen and Nitrogen	ASTM D5291
	Carbon Residue: - Conradson including, Conradson on 10 % residue	IP 13 # ISO 6615



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PETROLEUMS and PETROLEUM PRODUCTS including jet fuel (cont'd)	<u>Chemical and Physical Tests</u> (cont'd)	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented in house procedures R-Gen-1QP142 and 143 # IP Equivalent ISO Standard
	Cetane Index	by calculation, provided that Density and Distillations are known IP 380 ASTM D4737 # ISO 4264
	Cetane number of diesel (ULSD)	ASTM D613/03b IP 41/2000
	Cloud Point	IP 219 # ISO 3015 ASTM D2500
	Cold Filter Plugging Point	IP 309
	Colour: Platinum-Cobalt Scale Saybolt Chromometer method	ASTM D1209 ASTM D156
	Colour	ASTM D6045 Lovibond Tintometer
	Conductivity, electrical	IP 274 ASTM D2624
	Corrosion, Copper	Copper strip tarnish test IP 154 ASTM D130 # ISO 2160:1998
	Coumarin content of kerosene	IP 374(B)
Density and relative density	IP 365 (Digital density meter) # ISO 12185 ASTM D4052 (Digital density meter) ASTM D5002 (Digital density meter)	



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PETROLEUMS and PETROLEUM PRODUCTS including jet fuel (cont'd)	<u>Chemical and Physical Tests</u> (cont'd)	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented in house procedures R-Gen-1QP142 and 143
		# IP Equivalent ISO Standard
	Distillation	IP 123 # ISO 3405 ASTM D86
	Distillation at reduced pressure	ASTM D1160
	Doctor test	IP 30
	Filter blocking tendency	IP 387
	Flash point	Abel closed cup IP 170 # ISO 13736 Pensky-Martens closed cup tester IP 34 ASTM D93 # ISO 2719 Cleveland Open Cup Flash and Fire Point IP 36 # ISO 2592 IP 523 # ISO 3679 Rapid equilibrium closed cup method
	Freezing point of aviation fuels Manual Method	IP 16 ASTM D2386
	Freezing point of aviation fuels Automatic Laser	IP 529
	Gum-existent	IP 131 ASTM D381 # ISO 6246 Jet evaporation
	Heat of combustion of liquid hydrocarbon	ASTM D240



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PETROLEUMS and PETROLEUM PRODUCTS including jet fuel (cont'd)	<u>Chemical and Physical Tests</u> (cont'd) Hydrocarbon types: - olefins, non-aromatic Hydrogen Sulphide content of fuel oils Jet Fuel Thermal Oxidation Testing (JFTOT) Lubricity of diesel (ULSD) Mercaptan Sulphur Metals in Fuel Oils: Aluminium and Silicon content Micro Carbon Residue Test (MCRT) Naphthalene Hydrocarbons Octane Number Research method - knock characteristics of motor fuels Motor method - knock characteristics of motor and aviation fuels	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented in house procedures R-Gen-1QP142 and 143 # IP Equivalent ISO Standard IP 156 ASTM D1319 # ISO 3837 Fluorescent Indicator Absorption IP 399 IP 323 ASTM D3241 IP 450 Potentiometric method IP 342 ASTM D3227 # ISO 3012 IP 470 IP 377 # ISO 10478 IP 398 ASTM D4530 ASTM D1840 IP 237/87 ASTM D2699/01 IP 236/87 ASTM D2700/01



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PETROLEUMS and PETROLEUM PRODUCTS including jet fuel (cont'd)	<u>Chemical and Physical Tests</u> (cont'd) Oxidation Stability of: - Gasoline Phosphorus in Gasoline Pour point - of crude oils Polyaromatic Hydrocarbons in diesel (ULSD) Quinizarin in gas oil Sediment in crude oils Smoke point Sulphur content Sulphur content by Ultraviolet Fluorescence Thermal and chemical ageing of residual fuel oils Total acidity in aviation turbine fuel	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented in house procedures R-Gen-1QP142 and 143 # IP Equivalent ISO Standard Induction Period method IP 40 ASTM D525 # ISO 7536 ASTM D3231 IP 15 ASTM D97 # ISO 3016 ASTM D5853 IP 391 IP 298 ASTM D4807 by membrane filtration IP 57 ASTM D1322 # ISO 3014 IP 336 # ISO 8754 ASTM D5453 IP 490 # ISO 20846 IP 390 # ISO 10307-2 IP354 ASTM D3242



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PETROLEUMS and PETROLEUM PRODUCTS including jet fuel (cont'd)	<u>Chemical and Physical Tests</u> (cont'd)	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented in house procedures R-Gen-1QP142 and 143 # IP Equivalent ISO Standard
	Total Lead in Gasoline	ASTM D3237 Atomic Absorption Spectroscopy
	Total Sediment in residual fuel oils	IP 375 ASTM D4870 # ISO 10307-1
	Vapour pressure	ASTM D5191
	Viscosity Index	IP 226 ASTM D2270 # ISO 2909
	Viscosity, Kinematic	IP 71/Section 1 ASTM D445 # ISO 3014
	Water content	Distillation using Dean & Stark equipment IP 74 ASTM D95 # ISO 3733
	Water in Crude Petroleum	Coulometric using Karl Fischer Titration IP 386 ASTM D4928 # ISO 10337
	Water in petroleum products	IP 438 Coulometric Karl Fischer titration method
	Water reaction of Aviation Fuels	IP 289 ASTM D1094
Water Separometer Index, Modified (WSIM)	ASTM D3948	



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FAT AND OIL DERIVATIVES - Fatty Acid Methyl Esters (FAME)	<u>Chemical and Physical Tests</u>	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented in house procedures R-Gen-1QP142 and 143
		# IP Equivalent ISO Standard
	Ester content	EN 14103
	Methanol content	EN 14110
	Glycerol/Glycerides	EN 14105
	Group I Metals	EN 14108
	Oxidation stability	EN 14112
	Iodine value	EN 14111
	Acid value	EN 14104
	Potassium content	EN 14109
	Separation and characterisation of FAME	EN 14331 Liquid chromatography/gas chromatography method
	Oxidation stability of FAME and blends with diesel fuel	EN 15751
	Determination of FAME in middle distillates by IR	EN 14078
	END	