

Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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

 <p>0605</p> <p>Accredited to ISO/IEC 17025:2005</p>	<h3>RPS Laboratories Ltd</h3> <p>Issue No: 050 Issue date: 15 December 2011</p>	
	<p>Unit 12 Waters Edge Business Park Modwen Road Salford M5 3EZ</p>	<p>Contact: Ms J Dewhurst Tel: +44 (0)161 872 2443 Fax: +44 (0)161 877 3959 E-Mail: rpsma@rpsplc.co.uk Website: www.rpsplc.co.uk</p>
<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
BODY FLUIDS	<u>Chemical Analysis</u>	
Blood	Lead	Documented In-House Method L9 using Furnace Atomic Absorption
Urine	Indium Gallium	Documented In-House Method M103 using Furnace Atomic Absorption
ATMOSPHERIC POLLUTANTS AND EFFLUENTS - STACK GAS SAMPLES	<u>Chemical Tests</u>	Documented In-House Methods based on the following national, international and other recognised standards
Sorbent tubes (silica gel)	Acetaldehyde, acrolein, formaldehyde, glutaraldehyde, propionaldehyde, butraldehyde, benzaldehyde, valeraldehyde, hexanal, heptanal	NIOSH 2016 using HPLC UV analysis (A40)
Sorbent tubes (XAD 7)	Phenol, M,P-cresol, O-cresol, M,P-xylene, O-xylene	NIOSH 2546 using GC FID analysis (P1)
Sorbent tubes (Activated carbon)	Determination of Volatile Organic Compounds	BS EN 13649:2002 using solvent extraction and GC FID analysis (O8)
	Acetone Acetonitrile Acrylonitrile Benzene Benzyl alcohol Benzyl chloride 1-bromopropane 2-butoxy ethanol 2-butanone 2-butoxyethyl acetate	Analysis through the appropriate application of in-house modules (documented in house methods) for preparation and measurement using Flexible Scope Protocol



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ATMOSPHERIC POLLUTANTS AND EFFLUENTS - STACK GAS SAMPLES (cont'd)	<p><u>Chemical Tests</u> (cont'd)</p> <p>Continued from Page 1</p> <p>Butan-2-ol Butan-1-ol Butyl acetate Butyl acrylate Butyl ether 2-(2-butoxyethoxy)ethanol Chlorobenzene Chloroform Cumene Cyclohexane Cyclohexanone Cyclopentane Decane 1,2 Dibromoethane 1,2 Dichloroethane Diethyl ether Diacetone alcohol Dichloromethane 2,6-dimethyl-4-heptanone Enflurane Epichlorohydrin Ethanol Ethyl Benzene Ethyl 3-ethoxypropionate 2-Ethoxyethanol Ethyl Acetate Ethyl Acrylate Ethyl lactate 2-ethyl-1-hexanol 3-ethoxy-1-propanol Halothane Heptane Hexane iso-Butanol iso-Butyl Acetate iso-propanol MEK Methanol MIBK m-Xylene n-Butanol</p>	<p>Documented In-House Methods based on the following national, international and other recognised standards (cont'd)</p> <p>Analysis through the appropriate application of in-house modules (documented in house methods) for preparation and measurement using Flexible Scope Protocol (cont'd)</p>



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ATMOSPHERIC POLLUTANTS AND EFFLUENTS - STACK GAS SAMPLES (cont'd)	<p><u>Chemical Tests</u> (cont'd)</p> <p>Continued from Page 1 and 2</p> <p>n-Propanol n-Propyl Acetate Iodomethane Isoflurane isophorone isopropylacetate O-Xylene Octane P-xylene 1-propanol Propyl acetate Pentane propyl benzene Propylene oxide Pyridine</p> <p>Methyl acrylate Methyl cyclohexane Methyl formate Methyl methacrylate</p> <p>1-methoxy-2-propanol 1-methoxy-2-propanol acetate 4-methyl-2-pentanone 5-methyl-2-hexanone Nonane N,n-Dimethyl aniline Sevoflurane Styrene Tert butyl methyl ether Tetrahydrofuran Tetrachloroethene Toluene 1,1,1-Trichloroethane Trichloroethene 1,2,3-Trimethylbenzene 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene Vinyl Acetate</p>	<p>Documented In-House Methods based on the following national, international and other recognised standards (cont'd)</p> <p>Analysis through the appropriate application of in-house modules (documented in house methods) for preparation and measurement using Flexible Scope Protocol (cont'd)</p>



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ATMOSPHERIC POLLUTANTS AND EFFLUENTS - STACK GAS SAMPLES (cont'd)	<u>Chemical Tests</u> (cont'd)	Documented In-House Methods based on the following national, international and other recognised standards (cont'd)
Impinger Solutions (sulphuric acid)	Ammonia	BS EN 14791:2005 using IC analysis (A6)
Impinger Solutions (sodium hydroxide or sulphuric acid)	Hydrogen chloride(HCl) Hydrogen bromide (HBr) Hydrogen fluoride (HF) Chlorine (Cl ₂) Bromine (Br ₂)	US EPA Method 26 using IC analysis (C27)
Impinger Solutions (hydrogen peroxide)	Sulphur Dioxide	BS EN 14791:2005 using IC analysis (C27)
Impinger Solutions (water)	Formaldehyde	US EPA method 316 using spectrophotometric analysis (M103)
	Hydrogen Chloride	BS EN 1911-3:1998 using IC analysis (C27)
Impinger Solutions (sodium hydroxide)	Hydrogen fluoride	BS ISO 15713:2006 (modified) using IC analysis (C27)
Impinger Solutions (cadmium sulphate and zinc acetate)	Hydrogen sulphide	USEPA Method 11 by titrimetry (M120)
Filters Probe rinses (nitric acid) Impinger Solutions (nitric acid/hydrogen peroxide)	Trace elements (heavy metals): Arsenic, Antimony, Beryllium, Cadmium, Cobalt, Chromium, Copper, Manganese, Nickel, Lead, Selenium, Tin, Thallium, Vanadium	BS EN 14385:2004 Using microwave and HF digestion followed by: ICP-OES analysis (M30)



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ATMOSPHERIC POLLUTANTS AND EFFLUENTS - STACK GAS SAMPLES (cont'd)	<u>Chemical Tests</u> (cont'd)	Documented In-House Methods based on the following national, international and other recognised standards (cont'd)
Filters probe rinses (nitric acid) Impinger Solutions (nitric acid/hydrogen peroxide, sulphuric acid/potassium permanganate, nitric acid/potassium dichromate)	Trace elements (heavy metals): Arsenic, Antimony, Beryllium, Cadmium, Cobalt, Chromium, Copper, Mercury, Manganese, Nickel, Lead, Selenium, Tin, Thallium, Vanadium.	MID 14385 (BS EN 14385:2004, BS EN 13211:2001 and BS EN 1483:2007) Using microwave and HF digestion followed by: ICP-OES analysis (M30) AFS analysis (M112)
Impinger solution (Potassium permanganate)	Oxides of nitrogen (NO, NO ₂ , NO ₃)	USEPA 7d (May 1990)
Filters	Isocyanates - TDI, MDI, HDI	Documented In-house Method M119 based on US OSHA47 and OSHA42, and US EPA CTM 036A using HPLC Diode array in accordance with MCERTS Stacks requirements
Filter Papers and Rinse Solutions	<u>Physical Testing</u> Weighing of Particulate Matter	 BS EN 13284-1:2002 (D9) BS ISO 9096:2003 (D8)
POLLUTANTS AND EFFLUENTS: ATMOSPHERIC Diffuse pollutants from workplace atmospheres	<u>Chemical Analysis</u>	
Filters	Hexavalent Chromium	Documented In-House Method M101 using Spectrophotometry
IOM dual fraction head	Total and Respirable Dust	Documented In-house method D1 by gravimetric analysis based on MHDS 14/3
XAD-7 air sampling tube	Phenol Cresol Xylenol	Documented In-house method P1 by GC/FID analysis based on NIOSH 2546



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POLLUTANTS AND EFFLUENTS: ATMOSPHERIC Diffuse pollutants from workplace atmospheres (cont'd)	<u>Chemical Analysis</u> (cont'd)	
Silica gel tubes	Hydrofluoric acid Hydrochloric acid Hydrobromic acid Phosphoric acid Nitric acid Sulphuric acid	Documented In-House Method C27 based on NIOSH 7903 (Aug 1994) using Ion Chromatography
	Ammonia	Documented In-House Method A6 based on NIOSH 6016 (May 1996) using Ion Chromatography
	Ethanolamine Methylamine Diethylamine Dimethylamine Trimethylamine	Documented In-house method A1 by IC analysis
Anasorb 747	Sulphur dioxide	Documented In-House Method C27 based on OSHA ID-200 (Apr 1992) using Ion Chromatography
Filters, impingers, silica gel tubes or passive samplers	Acetaldehyde Acrolein Formaldehyde Glutaraldehyde	Documented In-House Method A40 based on OSHA 64 (Jan 1990) using High Performance Liquid Chromatography
Filters, impingers, silica gel tubes or passive samplers	Propionaldehyde Butraldehyde Benzaldehyde Valeraldehyde Hexanal Heptanal	Documented In-House Method A40 using High Performance Liquid Chromatography
Filters and/or impingers	Rubber Fume	Documented In-House Method C16 based on MDHS 47/2 (1999) using Gravimetric techniques and solvent extraction
Toluene/1-(2-methoxyphenyl)-piperazine	Isocyanates MDI, HDI, HDI, IPDI	Documented In-House Method I3 based on MDHS 25/3 (Jan 1999) using High Pressure Liquid chromatography



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<p>POLLUTANTS AND EFFLUENTS: ATMOSPHERIC Diffuse pollutants from workplace atmospheres (cont'd)</p> <p>Filters</p> <p>Filters and/or impingers</p>	<p><u>Chemical Analysis</u> (cont'd)</p> <p>Total and Respirable Dust</p> <p>Metals: Aluminium Antimony Arsenic Barium Beryllium Bismuth Cadmium Chromium Cobalt Copper Indium Iron Lead Lithium Magnesium Molybdenum Manganese Nickel Phosphorous Selenium Strontium Tellurium Thallium Tin Vanadium Zinc</p>	<p>Documented In-House Method D1 based on MDHS 14/3 (2000) using Gravimetric techniques</p> <p>Documented In-House Method M24 based on NIOSH 7300 (Aug 1994) using Inductively Coupled Plasma - Emission Spectroscopy</p>



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<p>POLLUTANTS AND EFFLUENTS: ATMOSPHERIC Diffuse pollutants from workplace atmospheres (cont'd)</p> <p>Activated charcoal tubes and passive samplers</p>	<p><u>Chemical Analysis</u> (cont'd)</p> <p>Determination of airborne organic compounds including:</p> <ul style="list-style-type: none"> Acetone Acetonitrile Acrylonitrile Benzene Benzyl alcohol Benzyl chloride 1-bromopropane 2-butoxy ethanol 2-butanone 2-butoxyethyl acetate Butan-2-ol Butan-1-ol Butyl acetate Butyl acrylate Butyl ether 2-(2-butoxyethoxy)ethanol Chlorobenzene Chloroform Cumene Cyclohexane Cyclohexanone Cyclopentane Decane 1,2 Dibromoethane 1,2 Dichloroethane Diethyl ether Diacetone alcohol Dichloromethane 2,6-dimethyl-4-heptanone Enflurane Epichlorohydrin Ethanol Ethyl Benzene Ethyl 3-ethoxypropionate 2-Ethoxyethanol Ethyl Acetate Ethyl Acrylate Ethyl lactate 2-ethyl-1-hexanol 3-ethoxy-1-propanol Halothane 	<p>Documented In-House Method O8 based on OSHA 07 (May 2000)/ BS 13649:2002 using solvent desorption followed by capillary column gas chromatography with flame ionisation detector</p>



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<p>POLLUTANTS AND EFFLUENTS: ATMOSPHERIC Diffuse pollutants from workplace atmospheres (cont'd)</p> <p>Activated charcoal tubes and passive samplers (cont'd)</p>	<p><u>Chemical Analysis</u> (cont'd)</p> <p>Determination of airborne organic compounds including: (cont'd)</p> <p>Heptane Hexane iso-Butanol iso-Butyl Acetate iso-propanol MEK Methanol MIBK m-Xylene n-Butanol n-Propanol n-Propyl Acetate Iodomethane Isoflurane isophorone isopropylacetate O-Xylene Octane P-xylene 1-propanol Propyl acetate Pentane propyl benzene Propylene oxide Pyridine</p> <p>Methyl acrylate Methyl cyclohexane Methyl formate Methyl methacrylate</p> <p>1-methoxy-2-propanol 1-methoxy-2-propanol acetate 4-methyl-2-pentanone 5-methyl-2-hexanone Nonane N,n-Dimethyl aniline Sevoflurane Styrene Tert butyl methyl ether</p>	



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<p>POLLUTANTS AND EFFLUENTS: ATMOSPHERIC Diffuse pollutants from workplace atmospheres (cont'd)</p> <p>Activated charcoal tubes and passive samplers (cont'd)</p>	<p><u>Chemical Analysis</u> (cont'd)</p> <p>Determination of airborne organic compounds including: (cont'd)</p> <p>Tetrahydrofuran Tetrachloroethene Toluene 1,1,1-Trichloroethane Trichloroethene 1,2,3-Trimethylbenzene 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene Vinyl Acetate</p>	
<p>Activated charcoal tubes and passive samplers - Anasorb 747</p>	<p>Methanol</p>	<p>Documented In-House Method O8 based on OSHA 91 using solvent desorption followed by capillary column gas chromatography with flame ionisation detector</p>
<p>Activated charcoal tubes and passive samplers</p>	<p>Determination of airborne organic compounds</p>	<p>Analysis through the appropriate application of in-house modules (documented in house methods) for preparation and measurement using Flexible Scope Protocol</p>
<p>Molecular Sieve Adsorbent Tubes</p>	<p>Nitrous Oxide</p>	<p>Documented In-House Method M 121 using Thermal Desorption and Gas Chromatography with Electro Chemical Detector (ATD-GC-ECD)</p>
<p>DEIONISED WATER</p>	<p><u>Chemical Analysis</u></p> <p>Determination of anions: Bromide Chloride Fluoride Nitrate Nitrite Phosphate Sulphate</p>	<p>Documented In-House Method C27 using Ion Chromatography</p>



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DEIONISED WATER (cont'd)	<u>Chemical Analysis</u> (cont'd) Metals: Aluminium Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Iron Lead Lithium Magnesium Manganese Nickel Phosphorous Selenium Tellurium Thallium Tin Titanium Vanadium Zinc	Documented In-House Method M25 based on NIOSH 7300 (Aug 1994) using Inductively Coupled Plasma - Emission Spectroscopy
	END	