

# Schedule of Accreditation

issued by

## United Kingdom Accreditation Service

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

 <p><b>0012</b></p> <p>Accredited to ISO/IEC 17025:2017</p>	<h3>The Sheffield Assay Office</h3>	
	<p><b>Issue No:</b> 054</p>	<p><b>Issue date:</b> 20 October 2020</p>
<p><b>Guardian Hall</b> Beulah Road Hillsborough Sheffield S6 2AN</p>	<p><b>Contact: Mr M Hawker</b> Tel: +44 (0)114 231 2121 Fax: +44 (0)114 233 9079 E-Mail: <a href="mailto:hawkerm@assayoffice.co.uk">hawkerm@assayoffice.co.uk</a> Website: <a href="http://www.assayoffice.co.uk">www.assayoffice.co.uk</a></p>	
<p><b>Testing performed at the above address only</b></p>		

### DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
<p><b>METALS and METAL ALLOYS (Including PRECIOUS METALS/ALLOYS)</b></p> <p>Precious metals and alloys</p>	<p><u>Chemical Tests for the purpose of Hallmarking</u></p>	<p>Documented In-House Methods</p>
	<p>Gold, Silver, Platinum, Palladium</p>	<p>X-ray fluorescence analysis (XRF) - ATM 105</p>
	<p>Gold, Silver, Platinum, Palladium</p>	<p>Optical Emission Spectrometry (ICP-OES) - ATM 74</p>
	<p>Gold</p>	<p>Fire assay technique (cupellation) - ATM 01</p>
<p><b>METALS and METAL ALLOYS (Including PRECIOUS METALS/ALLOYS)</b></p> <p><u>Precious metal alloys &amp; powders</u></p>	<p><u>Chemical Tests</u></p>	<p>Documented In-House Methods</p>
	<p>Gold, Copper, IridiumNickel, Palladium, Platinum, Rhodium Ruthenium</p>	<p>ATM 74 using Optical Emission Spectrometry (ICP-OES)</p>
	<p>Elemental analysis</p>	<p>Analysis through the appropriate application of documented in house methods for sampling, preparation and measurement using Flexible Scope Protocol AP 10 and ICP-OES instrumentation</p>
	<p>Silver</p>	<p>Potentiometric titration - ATM 11 or ATM 12</p> <p>Fire assay technique (cupellation) - ATM 02</p>



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
<b>METALS and METAL ALLOYS (Including PRECIOUS METALS/ALLOYS) (cont'd)</b>	<u>Chemical Tests</u> (cont'd)	<u>Documented In-House Methods</u>
Precious metal powders	Gold	Fire assay technique (cupellation) – ATM 01
High purity silver	Gold, Platinum, Palladium	Lead fusion/fire assay/ICP-OES ATM 03
Base metals & alloys (e.g. steels)	Aluminium, Arsenic, Gold, Bismuth, Cadmium, Cobalt, Chromium, Copper, Iron, Magnesium, Manganese, Nickel, Lead, Palladium, Platinum, Antimony, Selenium, Silicon, Tin, Tellurium, Titanium, Zinc, Boron, Mercury, Indium, Phosphorous, Ruthenium,	ATM 79 using Optical Emission Spectrometry (ICP-OES)
	Aluminium, Boron, Bismuth, Cobalt, Chromium, Copper, Iron, Magnesium, Manganese, Nickel, Molybdenum, Niobium, Phosphorous, Silicon, Tin, Tantalum, Titanium, Vanadium, Tungsten, Zinc, Zirconium	ATM 150 using Optical Emission Spectrometry (ICP-OES)
	Elemental analysis	Analysis through the appropriate application of documented in house methods for sampling, preparation and measurement using Flexible Scope Protocol AP 10 and ICP-OES instrumentation
	Carbon Sulphur	Combustion/Infra-red analysis - ATM 82
	Silver	Potentiometric titration - ATM 11 or ATM 12
<b>STEEL and TANTALUM ALLOYS</b>	Nitrogen and Oxygen	Thermoconductivity and IR absorption (Eltra ONH 2000 Analyser) using in-house method ATM 149



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<b>METALS and METAL ALLOYS (Including PRECIOUS METALS/ALLOYS) (cont'd)</b>	<u>Chemical Tests</u> (cont'd)	<u>Documented In-House Methods</u>
Copper and Brass alloys	Aluminium, Bismuth, Cadmium, Chromium, Copper, Iron, , Nickel, Lead, Antimony, Silicon, Tin, Titanium, Zinc	ATM 101 using Optical Emission Spectrometry (ICP-OES)
Aluminium alloys	Aluminium, Bismuth, Copper, Iron, Gallium, Lithium, Magnesium, Manganese, Nickel, Lead, Antimony, Silicon, Tin, Titanium, Zinc,	ATM 102 using Optical Emission Spectrometry (ICP-OES)
Lead/Tin Alloys	Silver, Aluminium, Arsenic, Gold, Bismuth, Cadmium, Copper, Iron, Indium, Nickel, Lead, Palladium, Antimony, Tin Zinc	ATM 72 using Optical Emission Spectrometry (ICP-OES)
Metal powders and Turnings	Loss-on-ignition at 120 °C, 500 °C and 800 °C	Gravimetric determination - ATM 144
Metals in solution (eg, cyanide in plating solutions, tank washings, process waste (not including waters /effluent))	Gold, Silver, Platinum, Palladium, Aluminium, Arsenic, Boron, Barium, Beryllium, Bismuth, Calcium, Cadmium, Cerium, Chromium, Copper, Iron, Gallium, Hafnium, Mercury, Indium, Iridium, Potassium, Lanthanum, Magnesium, Manganese, Molybdenum, Sodium, Niobium, Nickel, Phosphorus, Lead, Rhenium, Rhodium, Ruthenium, Selenium, Silicon, Tin, Strontium, Tantalum, Tellurium, Thorium, Thallium, Titanium, Vanadium, Tungsten, Yttrium, Zinc, Zirconium	ICP-OES - ATM 83
	Elemental analysis	Analysis through the appropriate application of documented in house methods for sampling, preparation and measurement using Flexible Scope Protocol AP 10 and ICP-OES instrumentation



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Jewellery and related products	<u>Chemical Tests</u> (cont'd) Nickel (releasable)	Documented In-House Methods  Acid dissolution followed by ICP-OES or ICP-MS based on BS EN 1811:2011 + A1:2015/, BS EN 12472:2005 + A1:2009 (ATM 87)
Jewellery and related products (including childrens jewellery and painted jewellery)	Lead and Cadmium	16 CFR part 1303: Documented in house method ATM 134 based on CPSC-CH-E1001-08.1 using ICP-OES
Paint	Lead and Cadmium	Documented in house method ATM 134 based on CPSC-CH-E1001-08.1 and CPSC-CH-E1003-09.1. using ICP-MS
	Lead and Cadmium	16 CFR part 1303: Documented in house method ATM 134 based on CPSC-CH-E1003-09.1 using ICP-OES)
<b>BODY FLUIDS</b>  Urine samples (human)	<u>Chemical Tests</u>	<u>Documented In-House Method</u>
	Mercury content	Atomic fluorescence spectrometry (cold vapour technique - CV-AFS) - ATM 103
	Creatinine content	UV/VIS spectrophotometry - ATM 104



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<p><b>MEDICAL MATERIALS</b></p> <p>Alginate Fibres</p> <p>Medical Materials</p> <p>Silver Migration into Simulated Wound Fluid</p>	<p><u>Chemical Tests</u></p> <p>Silver, Arsenic, Cadmium, Cobalt, Copper, Iron, Mercury, Sodium, Nickel, Lead, Tin, Zinc</p> <p>Silver</p> <p>Silver</p> <p>Elemental analysis</p>	<p><u>Documented In-House Method</u></p> <p>ATM 99 using ICP-MS</p> <p>ATM 106 using Optical Emission Spectrometry (ICP-OES)</p> <p>ATM 115 using Optical Emission Spectrometry (ICP-OES)</p> <p>Analysis through the appropriate application of documented in house methods for sampling, preparation and measurement using Flexible Scope Protocol AP 10 and ICP-OES instrumentation</p>
<p><b>ATMOSPHERIC POLLUTANTS</b></p> <p>Charcoal, Gypsum, SKC tubes/ badges and Phosphor Powder</p> <p>Cell culture solutions, animal feed samples &amp; metal powder samples.</p> <p>Solutions (for example nutritional oils, food flavourings, glues and dyes) and Acid Soluble Materials (for example, glues, dyes, pastes, and cosmetic products such as lipstick)</p>	<p><u>Chemical Tests</u></p> <p>Mercury</p> <p>Determination of: Sb, As, Bi, Cd, Ca, Cr, Co, Cu, Hf, In, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Te, Sn, Ti, Tl, Th, Zn, Zr, Hg</p> <p>Determination of: Al, Sb, As, Ba, Be, Bi, Cd, Ca, Ce, Cr, Co, Cu, Dy, Eu, Er, Gd, Ga, Ge, Hf, In, Fe, La, Pb, Mg, Mn, Mo, Nd, Ni, Pd, Pt, K, Pr, Re, Rb, Ru, Sm, Sc, Se, Sr, Te, Tb, Sn, Ti, Tl, Th, W, Zn &amp; Zr</p>	<p>Documented In-House Method by CV-AFS based on MDHS 16/2 (ATM 147)</p> <p>Documented in house test method using ICP-MS (ATM 160)</p> <p>Analysis through the appropriate application of documented in house methods for sampling, preparation and measurement using Flexible Scope Protocol AP 10 and ICP-MS instrumentation</p>
END		