


Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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

 <p>UKAS REFERENCE MATERIALS</p> <p>4005</p> <p>Accredited to ISO 17034:2016</p>	<p>LGC Limited</p> <p>Issue No: 019 Issue date: 08 January 2021</p>	
	<p>Queens Road Teddington Middlesex TW11 0LY</p>	<p>Contact: Mrs Natasha Heath Tel: +44 (0)20 8943 7474 Fax: +44 (0)20 8943 7314 E-Mail: Natasha.Heath@lgcgroup.com Website: www.lgc.co.uk</p>
Reference material production at the above address		

DETAIL OF ACCREDITATION

Matrix / Artefact	Property Value(s) / Identity / Characterisation Range	Characterisation Procedure / Technique	Type* (CRM / RM)
<p><u>Special Alloys</u></p> <p>Auto Catalysts</p>	<p>Pt - trace to % levels Pd - trace to % levels Rh - trace to % levels</p>	<p>Measurement by a single, primary, definitive method at LGC (ICP-IDMS)</p>	<p>CRM and RM</p>
<p><u>Pure Organic Compounds</u></p> <p>Organic Chemicals</p>	<p>Purity (% m/m)</p>	<p>Measurement by two or more independent reference methods at LGC. Methods selected from DSC, HPLC, GC-FID, GC-MS, Titration, plus Karl Fischer (volumetric and Coulometric) and/or TGA or Measurement by one reference method at LGC (DSC, HPLC, GC-FID, GC-MS, Titration), with supporting evidence obtained using qNMR, plus Karl Fischer (volumetric and coulometric) and/or TGA. This approach to be used where the organic compound is amenable to only one of the listed reference methods.</p>	<p>CRM and RM</p>
<p>Organic chemicals and metals</p>	<p>Melting Point (30-300 °C)</p>	<p>Measurement by a single, primary, definitive method at an NMI laboratory (Contact Thermometry)</p>	<p>CRM</p>
<p>Metals</p>	<p>Enthalpy of fusion</p>	<p>Measurement by a single, primary, definitive method at an NMI laboratory using a differential heat flux Calvet calorimeter</p>	<p>CRM</p>



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Pure Organic Compounds (cont'd)			
Calibration Solutions	Polychlorinated Biphenyls	Measurement by a single, primary, definitive method at LGC (GC-IDMS) And/or Measurement by a network of qualified laboratories using a variety of methods of demonstrable accuracy	CRM and RM
Glycine and Glycine in solution	Absolute Isotope Ratio ¹² C and ¹³ C	Measurement by a single, primary, definitive method at LGC (Multi-collector –ICP-MS)	CRM and RM
Foodstuffs			
Alcoholic Beverages (wines, spirits, lagers)	Alcoholic Strength (%ABV)	Measurement by a single, primary, definitive method at LGC laboratory (pycnometry) and: Measurement by a network of qualified laboratories using a variety of methods of demonstrable accuracy	CRM and RM
	Congeners	Measurement by a network of qualified laboratories using a variety of methods of demonstrable accuracy	CRM and RM
Basic and Composite Foods Including: Meats and Meat Products Dairy Products Bread and Bakery Products Cereals and Cereal Products Confectionery Soft Drinks Dried Food Products Fruit and Vegetable Products Dry vegetation Animal Feeds Food Supplements	Elements, Selenium (Content and Speciation), Proximates, Additives, Contaminants and Preservatives including: Sugars Sulfur Dioxide Artificial Colours Antioxidants Sweeteners Degrees Brix Refractive Index	Measurement by a single, primary, definitive method at LGC laboratory (ICP-IDMS) – Elements, Selenium (Content and Speciation), also Elements by Exact Single Matched (ESM) Standard by ICP-MS/SF-ICP-MS or ICP-OES Water by coulometric oven Karl-Fischer analysis only And/or Measurement by a network of qualified laboratories using a variety of methods of demonstrable accuracy	CRM and RM



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<p><u>Foodstuffs</u> (cont'd)</p> <p>Basic and Composite Foods Including: Meats and Meat Products Dairy Products Bread and Bakery Products Cereals and Cereal Products Confectionery Soft Drinks Dried Food Products Fruit and Vegetable Products Dry vegetation Animal Feeds Food Supplements</p>	<p>Allergen food protein as listed in Annex II of the EU Food Information for Consumers Regulation No.1169/2011</p>	<p>Gravimetric preparation of matrix material and characterisation of nitrogen content of allergen food ingredients by DUMAS combustion followed by thermal conductivity detection</p>	<p>RM</p>
<p>Meats</p>	<p>Species Identification</p>	<p>Measurement in a single laboratory, using a variety of methods of demonstrable accuracy (DNA, Elisa and reputable source)</p>	<p>RM</p>
<p><u>Petroleum Products</u></p> <p>Diesel and Gasoline</p>	<p>Sulfur (Trace to % Levels)</p>	<p>Measurement by a single, primary, definitive method at LGC (ICP-IDMS)</p>	<p>CRM and RM</p>
<p><u>Soils, Sludges and Sediments</u></p> <p>Soils, Sludges, Sediments</p>	<p>Organics and inorganics (Trace to % Levels)</p>	<p>Measurement by a single, primary, definitive method at LGC (ICP-IDMS, GC IDMS, HPLC-IDMS), also Elements by Exact Single Matched (ESM) Standard by ICP-MS/SF-ICP-MS or ICP-OES And/or Measurement by a network of qualified laboratories using a variety of methods of demonstrable accuracy</p>	<p>CRM and RM</p>



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<p><u>Soils, Sludges and Sediments</u> (cont'd)</p> <p>Gypsum material</p>	Inorganics (Trace to % Levels)	Measurement by a single, primary, definitive method at LGC (ICP-IDMS, GC IDMS, HPLC-IDMS), also Elements by Exact Single Matched (ESM) Standard by ICP-MS/SF-ICP-MS or ICP-OES And/or Measurement by a network of qualified laboratories using a variety of methods of demonstrable accuracy	CRM and RM
<p><u>Ashes</u></p> <p>Fuel Ash</p>	Inorganics (Trace to % Levels)	Measurement by a single, primary, definitive method at LGC (ICP-IDMS), also Elements by Exact Single Matched (ESM) Standard by ICP-MS/SF-ICP-MS or ICP-OES And/or Measurement by a network of qualified laboratories using a variety of methods of demonstrable accuracy	CRM and RM
<p><u>Waters</u></p> <p>Drinking Water, River Water, Estuarine Water, Rain Water, Leachates</p>	Anions and Elements (Trace to % Levels)	Measurement by a single, primary, definitive method at LGC (ICP-IDMS) also Elements by Exact Single Matched (ESM) Standard by ICP-MS/SF-ICP-MS or ICP-OES And/or Measurement by a network of qualified laboratories using a variety of methods of demonstrable accuracy	CRM and RM



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<u>Clinical Laboratory Materials</u>			
Whole Blood and Serum	Organics and Elements, Selenium (Content and Speciation)	Measurement by a single, primary, definitive method at LGC (ICP-IDMS, GC-IDMS and LC-IDMS), also Elements by Exact Single Matched (ESM) Standard by ICP-MS/SF-ICP-MS or ICP-OES And/or Measurement by a network of qualified laboratories using a variety of methods of demonstrable accuracy	CRM and RM
<u>Ethanol Reference Standards</u>			
Forensic Ethanol Solutions	Ethanol (mg/100ml)	Measurement by a single, primary, definitive method at LGC (Potassium Dichromate Titration)	CRM
Ethanol/Water Reference Spirits	Density (kg/m ³)	Measurement by a single, primary, definitive method at LGC (Pycnometry)	CRM
	Alcoholic Strength (%ABV)	Taken to be the % alcohol by volume corresponding to that density from the Official Laboratory Alcohol Table (RDC80/267/04), Issued under the authority of the UK HM Customs & Excise	CRM
<u>Optical Properties</u>			
Small Organic Molecules or Inorganic Compounds in Solution	Wavelength and Absorbance	Measurement by a single, primary, definitive method in a single laboratory	CRM and RM
END			

***Type**

CRM = Certified Reference Material(s)

RM = Reference Material(s)

Refer to ISO 17034 for full definitions