


# Schedule of Accreditation

issued by

## United Kingdom Accreditation Service

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

 <p><b>UKAS</b> REFERENCE MATERIALS <b>27393</b></p> <p>Accredited to ISO 17034:2016</p>	<b>ARO Scientific Ltd</b>	
	<b>Issue No:</b> 001	<b>Issue date:</b> 20 September 2023
	<b>Unit 1</b> <b>Bridgeway Business Park</b> <b>Ditton Road</b> <b>Widnes</b> <b>WA8 0QE</b>	<b>Contact: Miss Lucey Burke</b> <b>Tel: +44 (0)151 424 2828</b> <b>E-Mail: lb@aroscientific.com</b> <b>Website: www.aroscientific.com</b>
<b>Reference material production at the above address</b>		

### DETAIL OF ACCREDITATION

Matrix / Artefact	Property Value(s) / Identity / Characterisation Range	Characterisation Procedure / Technique	Type* (CRM / RM)
<u>Certified Reference Materials with Density Properties</u>  Petroleum Products, Base, Blended and Fuel Oils	0.6 g/ml to 1.65 g/ml	Measurement by a method specific, interlaboratory study ASTM D4052 IP365 ISO12185	CRM
<u>Certified Reference Materials with Flash Point Properties</u>  Petroleum Products, Base, Blended and Fuel Oils	Flash point, Pensky-Martens closed cup	Measurement by a method specific, interlaboratory study ASTM D93 Procedure A & B IP 34 ISO 2719	CRM
Petroleum Products, Base, Blended and Fuel Oils	Flash point, Cleveland open cup	Measurement by a method specific, interlaboratory study ASTM D92 IP36 ISO 2592 EN 2592	CRM
Petroleum Products, Base, Blended and Fuel Oils	Abel Flash Point	Measurement by a method specific, interlaboratory study IP 170, ISO 13736, or technically equivalent	CRM



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Matrix / Artefact	Property Value(s) / Identity / Characterisation Range	Characterisation Procedure / Technique	Type* (CRM / RM)
<u>Secondary Working Standard Reference Materials with Flash Point Properties</u>  Petroleum Products, Base, Blended and Fuel Oils	Flash Point, Pensky-Martens Closed Cup	Measurement by a single primary method at ARO in accordance with ASTM D93 Procedure A and B, IP 34, ISO 2719, or technically equivalent.	CRM
Petroleum Products, Base, Blended and Fuel Oils	Flash Point, Cleveland Open Cup	Measurement by a single primary method at ARO in accordance with ASTM D92, IP 36, ISO 2592, EN 2592, or technically equivalent.	CRM
<u>Certified Reference Materials with Pour Point Properties</u>  Petroleum Products, Base, Blended and Fuel Oils	Pour Point	Measurement by a method specific, interlaboratory study ASTM D97, IP 15, ISO 3016, BS 2000: Part 15, or technically equivalent.	CRM
<u>Certified Reference Materials with Cloud Point Properties</u>  Petroleum Products, Base, Blended and Fuel Oils	Cloud Point	Measurement by a method specific, interlaboratory study ASTM D2500, IP 219, ISO 3015, EN 23015, or technically equivalent.	CRM
<u>Certified Reference Materials with Cold Filter Plugging Point Properties</u>  Petroleum Products, Base, Blended and Fuel Oils	Cold Filter Plugging Point (CPPP) -	Measurement by a method specific, interlaboratory study ASTM D6371, IP 309, EN 116, BS 2000: Part 309, or technically equivalent.	CRM



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Matrix / Artefact	Property Value(s) / Identity / Characterisation Range	Characterisation Procedure / Technique	Type* (CRM / RM)
<u>Certified Reference Materials with Distillation Properties</u>			
Petroleum Products, Base, Blended and Fuel Oils	Distillation Properties	Measurement by a method specific, interlaboratory study ASTM D86, IP 123, ISO 3405, EN ISO 3405, or technically equivalent.	CRM
<u>Certified Reference Materials with Colour Properties</u>			
Petroleum Products, Base, Blended and Fuel Oils	ASTM Colour	Measurement by a single, primary, method at a laboratory (spectrophotometry) ASTM D6045 ASTM D1500	CRM
Petroleum Products, Base, Blended and Fuel Oils	Saybolt Colour	Measurement by a single, primary, definitive method at a laboratory (spectrophotometry) ASTM D6045 ASTM D156	CRM
Petroleum Products, Base, Blended and Fuel Oils	Gardner colour	Measurement by a single, primary, definitive method at a laboratory (spectrophotometry) ASTM D6166 ASTM D1544	CRM
<u>Certified Reference Materials with Other Properties</u>			
Petroleum Products, Base, Blended and Fuel Oils	Acid Number (AN) Total Acid Number (TAN)	Measurement by single primary method at ARO in accordance with ASTM D664	CRM
Petroleum Products, Base, Blended and Fuel Oils	Base Number (BN) Total Base Number (TBN)	Measurement by single primary method at ARO in accordance with ASTM D2896	CRM
Petroleum Products, Base, Blended and Fuel Oils	Sulfur content	Measurement by Gravimetric preparation	CRM
Kerosene and Aviation Turbine Fuels	Smoke Point	Measurement by a method specific, interlaboratory study ASTM D1322, or technically equivalent	CRM



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<u>Certified Reference Materials with Other Properties cont'd)</u>  Aviation Fuels	Freezing Point	Measurement by a method specific, interlaboratory study ASTM D2386, IP 16, or technically equivalent	CRM
END			

**\*Type**

CRM = Certified Reference Material(s)

RM = Reference Material(s)

Refer to ISO 17034 for full definitions