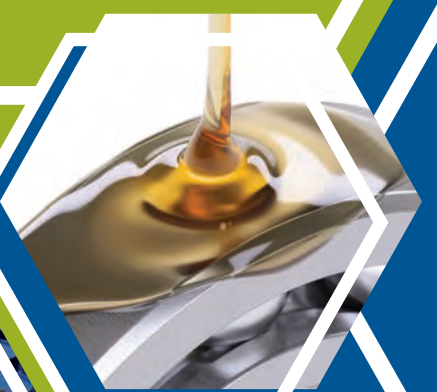
SETA STANHOPE-SETA

Reference Materials

For quality control, analysis and calibration of laboratory instruments



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Reference Materials

Stanhope-Seta specialise in the design and manufacture of laboratory test instruments which are widely used to measure product quality and consistency. From its dedicated facility in the United Kingdom, the Richardson Laboratory, Seta produces a comprehensive range of Reference Materials including Certified Reference Materials (CRMs), Multi Test Verification Materials (MTVMs) and Single Test Verification Materials (STVMs).

All Reference Materials are produced in general accordance with the principles of ISO 17034 and ISO 33405, ensuring the highest level of quality and traceability.

Worldwide service and support is available through Stanhope-Seta's network of experienced and trained representatives.

To find your nearest representative, visit www.stanhope-seta.co.uk/local-representative/

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Contents

Custom Reference Materials

Stanhope-Seta are pleased to offer custom reference materials for when listed products do not match exact testing requirements.

All custom materials are produced in general accordance with the principles of ISO 17034 and ISO 33405.

For more information on custom materials, please contact quotes@stanhope-seta.co.uk with details of your test method requirements.

Application	Jet A-1 DefStan 91-091	Aviation Turbine Fuel ASTM D1655	Aviation Turbine Fuel (Synthesized) D7566	Aviation Gasoline ASTM D910	Motor Gasoline EN 228	Motor Gasoline ASTM D4814	Diesel EN 590	Diesel ASTM D975
Carbon Residue							EN ISO 10370	
Cetane Number		ASTM D8183					IP 617; EN 17155	ASTM D8183
CFPP							EN 116	ASTM D6371
Cloud Point							EN 23015	ASTM D2500
Colour	ASTM D156; D6045	ASTM D156; D6045	ASTM D156; D6045					
Distillation	ASTM D86; IP 123	ASTM D86	ASTM D86	ASTM D86	EN ISO 3405	ASTM D86	EN ISO 3405	ASTM D86
FAME Content	ASTM D7797; IP 583	ASTM D7797; IP 583					ASTM D7963; ASTM D8274	ASTM D7963; ASTM D8274
Filter Blocking Tendency							IP 387	
Freeze Point	ASTM D2386; IP 16	ASTM D2386	D2386	ASTM D2386				
Flash Point	ASTM D56; D93; D3828; IP 34; 170; 523	ASTM D56; D93; D3828 IP 34; 170; 523	ASTM D56; D3828; IP 170; 523				EN ISO 2719	ASTM D93
Hydrogen Sulfide								
Particle Counting	ASTM D7619; IP 565	ASTM D7619; IP 565						ASTM D7619
Pour Point								
Unconverted Fatty Acids	ASTM D7797; IP 583	ASTM D7797 IP 583						
Vapour Pressure		ASTM D5191		ASTM D5191	EN 13016-1	ASTM D5191; D6378		
Viscosity	ASTM D445; IP 71	ASTM D445; IP 71	ASTM D445; IP 71				EN ISO 3104	ASTM D445
Water Separation	ASTM D8073; IP 624	ASTM D8073; IP 624						

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Reference Materials

Marine Fuel ISO 8217	Fuel Oil ASTM D396	Bio-Heating Fuels EN 14213	FAME EN 14214	Bio-Fuel Blend Stock B20 ASTM D7467	Bio-Fuel Blend Stock B100 ASTM D6751	Reference Material	Seta Reference Number
ISO 10370; IP 398		EN ISO 10370	EN ISO 10370		ASTM D4530; D189	MTVM - Fuel Oil 500 mL	99852-0
EN 17155 ASTM D8183			IP 617; EN 17155	ASTM D8183	ASTM D8183	AFIDA Verification Fluid pack of 4 AFIDA PRF Calibration Set	SA6009-0 SA6002-0
IP 309		EN 116	EN 116	ASTM D6371		MTVM - Gas Oil 500 mL Multi Test CRM - Gas Oil 500 mL	99851-0 SP9000-0
ISO 3015	ASTM D2500		EN ISO 23015	ASTM D2500	ASTM D2500	MTVM - Gas Oil 500 mL Multi Test CRM - Gas Oil 500 mL	99851-0 SP9000-0
						Saybolt Colour Reference Standard Certified Value <10 Saybolt Colour Reference Standard Certified Value 0 Saybolt Colour Reference Standard Certified Value 12 Saybolt Colour Reference Standard Certified Value 25	15386-0 15387-0 15388-0 15389-0
	ASTM D86			ASTM D86		MTVM - Kerosine 500 mL MTVM - Gas Oil 500 mL MTVM - Motor Gasoline 500 mL Multi Test CRM - Gas Oil 500 mL	99850-0 99851-0 99854-0 SP9000-0
ASTM D7963; ASTM D8274	ASTM D7963; ASTM D8274	ASTM D8274		ASTM D8274		FIJI Verification Material 15 mg/kg 200 mL FIJI Verification Material 30 mg/kg 100 mL FIJI Verification Material 50 mg/kg 200 mL FIJI Verification Material 100 mg/kg 100 mL FIJI Verification Material 150 mg/kg 200 mL FIJI Verification Material 400 mg/kg 100 mL FIJI Verification Material 900 mg/kg 100 mL FAME Verification Material 7% 200 mL FAME Verification Material 15% 200 mL FAME Verification Material 25% 200 mL FAME Verification Material 30% 200 mL FAME Verification Material 40% 200 mL	SETA-0112-0001 SETA-0112-0004 SETA-0112-0002 SETA-0112-0005 SETA-0112-0003 SETA-0112-0006 SETA-0112-0007 SETA-0112-0030 SETA-0112-0031 SETA-0112-0032 SETA-0112-0033 SETA-0112-0034
						Filter Blocking Tendency Verification Fluid 500 mL	91668-0
						MTVM - Kerosine 500 mL	99850-0
EN ISO 3679	ASTM D93	EN ISO 3679	EN ISO 2719; 3679	ASTM D93	ASTM D93	MTVM - Kerosine 500 mL MTVM - Fuel Oil 500 mL MTVM - Gas Oil 500 mL Small Scale Certified Reference Material 50 mL Small Scale Certified Reference Material 50 mL Flashcheck 2 x 80 mL Multi Test CRM - Gas Oil 500 mL	99850-0 99852-0 99851-0 99878-3 99879-0 99879-0 SP9000-0
IP 570						H_2S Diluent 500 mL H_2S Diluent 5 Litres H_2S Diluent 20 Litres H_2S Verification Material 2mg/kg 24 mL H_2S Verification Material 9mg/kg 24 mL IP 570 PTS Quarterly Membership	SA4000-004 SA4013-0 SA4014-0 SETA-512-0024 SETA-512-0025 SA4032-0
				ASTM D7619		AvCount Calibration Material 'a' 250 mL AvCount Verification Material 250 mL AvCount Calibration Material 'd' 250 mL	SA1001-0 SA1006-0 SA1121-0
ISO 3016	ASTM D97	ISO 3016				MTVM - Fuel Oil 500 mL MVTM - Gas Oil 500 mL	99852-0 99851-0
						FIJI Verification Material 15 mg/kg 200 mL FIJI Verification Material 30 mg/kg 100 mL FIJI Verification Material 50 mg/kg 200 mL FIJI Verification Material 100 mg/kg 100 mL FIJI Verification Material 150 mg/kg 200 mL FIJI Verification Material 400 mg/kg 100 mL FIJI Verification Material 900 mg/kg 100 mL	SETA-0112-0001 SETA-0112-0004 SETA-0112-0002 SETA-0112-0005 SETA-0112-0003 SETA-0112-0006 SETA-0112-0007
						Setavap Certified Reference Material 200 mL MTVM - Motor Gasoline Oil 500 mL	80610-0 99854-0
EN ISO 3104	ASTM D445	EN ISO 3104; IP 71	EN ISO 3104	ASTM D445	ASTM D445	MTVM - Kerosine 500 mL MTVM - Fuel Oil 500 mL MTVM - Gas Oil 500 mL	99850-0 99852-0 99851-0
						WSI Reference Material Fluid Base 500 mL WSI Dispersing Agent 10 mL	SA9004-0 SA9005-0

Jet Fuel

Jet Fuel Reference Standards are used for the verification of laboratory instruments used for specification tests. This includes distillation, freezing point, smoke point, aromatics, acid number, mercaptans, SIMDIS and ED X-ray.

- Produced in general accordance with the principles of ISO 17034 and ISO 33405
- Supports full compliance to ASTM, IP, CEN and ISO test methods
- Supplied with full documentation including Safety Data Sheet (SDS) in tamper evident security packaging

Multi Test Verification Material - Kerosine 500 mL (99850-0)

- Kerosene with certified values provided for multiple test methods
- Characterised using a network of competent laboratories to provide international traceability
- Use this standard to cross-check instrument performance and to assist in operator training with a typical material
- A highly cost effective solution to help meet verification requirements for audited laboratories and those which comply with ISO 17025
- 2 year shelf life from manufacture

Test Name:	Test Method:	Range:	Amount/Test:
Density 15 °C	ASTM D4052; IP 365; ISO 12185	0.798 to 0.807 kg/L	2 mL
Distillation IBP	ASTM D86; IP 123; EN ISO 3405	140 to 180 °C	100 mL
Distillation 10%	ASTM D86; IP 123; EN ISO 3405	159 to 188 °C	100 mL
Distillation 50%	ASTM D86; IP 123; EN ISO 3405	183 to 218 °C	100 mL
Distillation 90%	ASTM D86; IP 123; EN ISO 3405	220 to 252 °C	100 mL
Distillation FBP	ASTM D86; IP 123; EN ISO 3405	241 to 269 °C	100 mL
Distillation Residue	ASTM D86; IP 123; EN ISO 3405	1.1 to 1.3% vol	100 mL
Distillation Loss	ASTM D86; IP 123; EN ISO 3405	0.4 to 0.8% vol	100 mL
Flash Point	IP 170; EN ISO 13736	35 to 60 °C	85 mL
Freezing Point	ASTM D2386; D7153; D7154; IP 16	-62 to -43 °C	25 mL
Aromatics HPLC	ASTM D6379; IP 436	0.7 to 50% vol	2.5 mL
Smoke Point	ASTM D1322; IP 57; ISO 3014	20 to 25 mm	20 mL
Kinematic Viscosity -20°C	ASTM D445; IP 71; EN ISO 3104	2 to 8 mm^2/s	20 mL
Acid Number	ASTM D3242; IP 354	< 0.100 mg KOH/g	100 mL
Mercaptans	ASTM D3227; IP 342; ISO 3012	0.0003 to 0.0100% (m/m)	40 mL

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WSI Reference Material Fluid Base 500 mL (SA9004-0)

- Reference Fluid Base - A surfactant-free aviation turbine fuel
- Produced in accordance with IP 624 Annex B and ASTM D8073 Appendix X1
- Use this material directly and to make reference fluids to cross-check test method performance
- Suitable for use with the WSI Analyser (SA9000-0)

Test Method:	Range:	Amount/Test:
ASTM D8073; IP 624	97.5 to 100 Water Separation Index	220 ± 10 mL

WSI Dispersing Agent 10 mL (SA9005-0)

- Dispersing Agent - Toluene solution containing 1 mg/mL of solid (100 dry) bis-2-ethylhexyl sodium sulfosuccinate
- Produced by accurately determining the mass of ingredients using a balance certified by an ISO 17025 accredited laboratory
- Use this material directly and to make reference fluids to cross-check test method performance
- Suitable for use with the WSI Analyser (SA9000-0)

Test Method:	Amount/Test:
ASTM D8073; IP 624	0.008 mL (0.4 mL/L)

JetDC Cyclohexane Certified Reference Material 500 mL (88505-0)

- Cyclohexane - with certified values provided for multiple test methods
- Characterised by using a reference method in a single laboratory
- Use this standard to verify test method performance
- Suitable for use with the JetDC (88500-0)

Test Method:	Range:	Amount/Test:
IP 638	2.023 to 2.025	150 mL
ASTM D4052	777.0 to 780.0 kg/m^3	5 mL

Single Test Verification Materials (STVM)

- Kerosene with a certified value provided for a single test method
- Characterised using a network of competent laboratories to provide international traceability
- Use this standard to cross-check instrument performance and to assist in operator training with a typical material
- Small pack size to avoid cross-contamination and help meet verification requirements for audited laboratories and those which comply with ISO 17025
- 2 year shelf life from manufacture

Single Test Verification Material - Kerosine 50 mL

Part Number:	Test Name:	Test Method:	Range:
99857-0	Napthalenes	ASTM D1840	0.08 to 5.6 %vol
99858-0	Sulfur ED X-ray	ASTM D4294-IP 336, EN ISO 8754	0.003 to 0.07 %m/m
99898-0	Aromatics-Di HPLC	ASTM D6379-IP 436	1.44 to 2.82 %m/m
99898-0	Aromatics-Mono HPLC	ASTM D6379-IP 436	15.2 to 21.2 % m/m

Single Test Verification Material - SIMDIS Kerosine 10 mL (99905-0)

Test Name:	Test Method:	Range:	Amount/Test:
SIMDIS IBP	ASTM D2887-IP 406	100 to 180 °C	1 mL
SIMDIS 10%	ASTM D2887-IP 406	142 to 188 °C	1 mL
SIMDIS 50%	ASTM D2887-IP 406	183 to 218 °C	1 mL
SIMDIS 90%	ASTM D2887-IP 406	220 to 249 °C	1 mL
SIMDIS 95%	ASTM D2887-IP 406	230 to 259 °C	1 mL
SIMDIS FBP	ASTM D2887-IP 406	244 to 297 °C	1 mL

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Fuel Oil

Fuel Oil Reference Standards are used for the verification of laboratory instruments used for testing. This includes specification tests for density, pour point, flash point, viscosity, MCRT, ED X-ray and WD X-ray.

- Produced in general accordance with the principles of ISO 17034 and ISO 33405
- Supports full compliance to ASTM, IP, CEN and ISO test methods
- Supplied with full documentation including Safety Data Sheet (SDS) in tamper evident security packaging

Multi Test Verification Material - Fuel Oil 500 mL (99852-0)

- Fuel oil with certified values provided for multiple test methods
- Characterised using a network of competent laboratories to provide international traceability
- Use this standard to cross-check instrument performance and to assist in operator training with a typical material
- A highly cost effective solution to help meet verification requirements for audited laboratories and those which comply with ISO 17025
- 2 year shelf life from manufacture

Test Name:	Test Method:	Range:	Amount/Test:
Density at 15 °C	ASTM D4052; IP 365; ISO 12185	0.94 to 0.994 kg/L	2 mL
Pour Point	ASTM D97-IP 15; EN ISO 3016	-14 to 17 °C	Up to 45 mL
Kinematic Viscosity 50 °C	ASTM D445-IP 71; EN ISO 3104	150 to 1800 mm^2/s	Up to 40 mL
Kinematic Viscosity 100 °C	ASTM D445-IP 71; EN ISO 3104	20 to 95 mm^2/s	Up to 40 mL
Micro Carbon	ASTM D4530; IP 398; ISO 10370	0.10 to 30.0 %(m/m)	2 mL
Flash Point	ASTM D93 (b) - IP 34 (b); EN ISO 2719 (b)	92.3 to 121.6 °C	75 mL

Single Test Verification Material - Fuel Oil 50 mL

- Fuel oil with a certified value provided for a single test method
- Characterised using a network of competent laboratories to provide international traceability
- Use this standard to cross-check instrument performance and to assist in operator training with a typical material
- Small pack size to avoid cross-contamination and help meet verification requirements for audited laboratories and those which comply with ISO 17025
- 2 year shelf life from manufacture

Part Number:	Test Name:	Test Method:	Range:
99860-0	Vanadium	IP 288 (OBS)	16 to 140 µg/g
99862-0	Sulfur ED X-ray	ASTM D4294-IP 336; EN ISO 20847	0.981 to 2.572 %m/m
99866-0	Sulfur WD X-ray	ASTM D2622	0.9931 to 2.578 %m/m

Diesel Oil

Reference Standards for Diesel Oil includes a unique certified reference material that provides traceable validation of different test parameters from one sample including density, distillation, flash point and pour point.

- Produced in general accordance with the principles of ISO 17034 and ISO 33405
- Supports full compliance to ASTM, IP, CEN and ISO test methods
- Supplied with full documentation including Safety Data Sheet (SDS) in tamper evident security packaging

Multi Test Verification Material - Gas Oil 500 mL (99851-0)

- Gas oil with certified values provided for multiple test methods
- Characterised using a network of competent laboratories to provide international traceability
- Use this standard to cross-check instrument performance and to assist in operator training with a typical material
- A highly cost effective solution to help meet verification requirements for audited laboratories and those which comply with ISO 17025
- 2 year shelf life from manufacture

Test Name:	Test Method:	Range:	Amount/Test:
Density at 15 °C	ASTM D4052; IP 365; ISO 12185	0.83 to 0.854 g/mL	2 mL
Distillation IBP	ASTM D86; IP 123; EN ISO 3405	160 to 190 °C	100 mL
Distillation 10%	ASTM D86; IP 123; EN ISO 3405	198 to 242 °C	100 mL
Distillation 50%	ASTM D86; IP 123; EN ISO 3405	255 to 290 °C	100 mL
Distillation 90%	ASTM D86; IP 123; EN ISO 3405	319 to 350 °C	100 mL
Distillation 95%	ASTM D86; IP 123; EN ISO 3405	335 to 368 °C	100 mL
Distillation FBP	ASTM D86; IP 123; EN ISO 3405	347 to 385 °C	100 mL
Distillation Residue	ASTM D86; IP 123; EN ISO 3405	1.25 to 1.42% vol	100 mL
Distillation Loss	ASTM D86; IP 123; EN ISO 3405	0.26 to 0.7% vol	100 mL
FAME Content	IP 579; EN 14078	0.03 to 19.03% (V/V)	
Flash Point	ASTM D93; IP 34; EN ISO 2719	56 to 80 °C	75 mL
Cloud Point	ASTM D2500; D5771-IP 444; D5772; D5773; IP 445; IP 446; IP 219; ISO 3015; EN 23015	-17 to -4 °C	up to 38 mL
CFPP	ASTM D6371; IP 309; EN 116	-30 to 0 °C	45 mL
Pour Point	ASTM D97; D5950; D5949; D6749; D6892; D5985; IP 15; EN ISO 3016	-33 to -6 °C	up to 45 mL
Kinematic Viscosity 40°C	ASTM D445; IP 71; EN ISO 3104	2.3 to 3.5 mm²/s	up to 40 mL
Lubricity HFRR	ASTM D6079; IP 450; ISO 12156-1	212 to 512 µm	2 mL
Water Karl Fischer	ASTM D1744; IP 438; EN ISO 12937	23.4 to 63.9 mg/kg	5 mL

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Multi Test CRM - Gas Oil 500 mL (SP9000-0)

- Gas oil with certified values provided for multiple test methods
- Characterised using a network of competent laboratories to provide international traceability
- Use this standard to cross-check instrument performance and to assist in operator training with a typical material
- A highly cost effective solution to help meet verification requirements for audited laboratories and those which comply with ISO 17025
- 1.5 year shelf life from manufacture

Test Name:	Certified Value:	Test Method:
Kinematic Viscosity @ 40 °C	2.923 mm^2/s (cSt)	ASTM D2162
Dynamic Viscosity @ 40 °C	2.386 mPa s (cP)	ASTM D2162
Density @ 15 °C, Digital Density Meter	0.83373 g/mL	ASTM D4052
Cloud Point	-3.1 °C	IP 219
CFPP	-10.3 °C	IP 309
Distillation IBP	170.2 °C	ASTM D86
5% v/v recovered	196.7 °C	ASTM D86
10% v/v recovered	209.6 °C	ASTM D86
20% v/v recovered	231.2 °C	ASTM D86
30% v/v recovered	248.4 °C	ASTM D86
40% v/v recovered	262.6 °C	ASTM D86
50% v/v recovered	275.2 °C	ASTM D86
60% v/v recovered	287.3 °C	ASTM D86
70% v/v recovered	299.9 °C	ASTM D86
80% v/v recovered	314.6 °C	ASTM D86
90% v/v recovered	334.7 °C	ASTM D86
95% v/v recovered	351.0 °C	ASTM D93 Procedure A
FBP	360.5 °C	ASTM D93 Procedure A
Flash Point, PMCC *CRM Limit	68.2 °C 3.4 °C	ASTM D93 Procedure A

Filter Blocking Tendency (FBT) Verification Fluid 500 mL (91668-0)

- Diesel with a certified value
- Characterised by using a reference method in a single laboratory
- Use this standard to verify test method performance
- Suitable for use with the Seta Cold Filter Blocking Tester (91670-2) and the Seta Multi Filtration Tester (MFT) (91600-4)

Test Method:	Certified Value:	Amount/Test:
ASTM D2068; IP 387; IP PM EA/13	1.5 to 3.5 FBT	350 mL

AFIDA Verification Fluid 40 mL pack of 4 (SA6009-0)

- A volumetric blend of n-hexadecane and 1-methylnaphthalene with a certified value
- Produced by accurately determining the volumes of ingredients at 20 °C
- Use this standard to verify test method performance
- Suitable for use with the AFIDA - Indicated Cetane Number Analyser (SA6000-0)

Test Method:	Indicated Cetane Number:	Amount/Test:
ASTM D8183; IP 617; EN 17155	51	40 mL

AFIDA PRF Calibration Set (SA6002-0)

- A set of seven volumetric blends of n-hexadecane and 1-methylnaphthalene with certified values covering the range 35 to 85 Indicated Cetane Number (ICN)
- Produced by accurately determining the volumes of ingredients at 20 °C
- Use these standards to calibrate the AFIDA
- Suitable for use with the AFIDA - Indicated Cetane Number Analyser (SA6000-0)

Test Method:	Certified Value:	Amount/Test:
ASTM D8183; IP 617; EN 17155	35, 40, 46, 53, 60, 70, 85 ICN	40 mL

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Single Test Verification Materials (STVM)

- Gas oil with a certified value provided for a single test method
- Characterised using a network of competent laboratories to provide international traceability
- Use this standard to cross-check instrument performance and to assist in operator training with a typical material
- Small pack size to avoid cross-contamination and help meet verification requirements for audited laboratories and those which comply with ISO 17025
- 2 year shelf life from manufacture

Single Test Verification Material - Gas Oil 50 mL

Part Number:	Test Name:	Test Method:	Range:
99867-0	Sulfur WD X-ray	ASTM D2622; ISO 20884	0.001 to 0.013 %m/m
99869-0	Aromatics HPLC	ASTM D6591-IP 391; EN 12916	0.6 to 3.6 %m/m
99981-0	Sulphur	ASTM D5453; IP 490; ISO 20846	3 to 10 mg/kg

SIMDIS Single Test Verification Material - Gas Oil 10 mL (99906-0)

Test Name:	Test Method:	Range:	Amount/Test:
SIMDIS IBP	ASTM D2887-IP 406	120 to 190°C	1 mL
SIMDIS 10%	ASTM D2887-IP 406	177 to 242°C	1 mL
SIMDIS 50%	ASTM D2887-IP 406	260 to 290°C	1 mL
SIMDIS 90%	ASTM D2887-IP 406	320 to 355°C	1 mL
SIMDIS 95%	ASTM D2887-IP 406	335 to 375°C	1 mL
SIMDIS FBP	ASTM D2887-IP 406	350 to 414°C	1 mL

Gasoline

Reference materials are used for the verification of laboratory instruments used for testing. This includes specification tests for distillation, vapour pressure, sulphur UVF and aromatics.

- Produced in general accordance with the principles of ISO 17034 and ISO 33405
- Supports full compliance to ASTM, IP, CEN and ISO test methods
- Supplied with full documentation including Safety Data Sheet (SDS) in tamper evident security packaging

Multi Test Verification Material - Motor Gasoline 500 mL (99854-0)

- Motor Gasoline with certified values provided for multiple test methods
- Characterised using a network of competent laboratories to provide international traceability
- Use this standard to cross-check instrument performance and to assist in operator training with a typical material
- A highly cost effective solution to help meet verification requirements for audited laboratories and those which comply with ISO 17025
- 2 year shelf life from manufacture

Test Name:	Test Method:	Range:	Amount/Test:
Motor Octane No.	ASTM D2700; ISO 5163; IP 236	82 to 90 MON	-
Research Octane No.	ASTM D2699; ISO 5164; IP 237	90.5 to 101 RON	-
Density at 15 °C	ASTM D4052; IP 356; ISO 12185	0.763 kg/L	2 mL
Distillation IBP	ASTM D86; IP 123; EN ISO 3405	26 to 39 °C	100 mL
Distillation 70 °C	ASTM D86; IP 123; EN ISO 3405	5 to 44% vol	100 mL
Distillation 100 °C	ASTM D86; IP 123; EN ISO 3405	36 to 70% vol	100 mL
Distillation 150 °C	ASTM D86; IP 123; EN ISO 3405	75 to 95% vol	100 mL
Distillation FBP	ASTM D86; IP 123; EN ISO 3405	175 to 205 °C	100 mL
Motor Gasoline Aromatics	D6839; ISO 22854; EN 14517	19.32 to 46.29% vol	0.75 mL
Motor Gasoline Olefins	D6839; ISO 22854; EN 14517	0.40 to 26.85% vol	0.75 mL
Motor Gasoline Saturates	D6839; ISO 22854; EN 14517	26.85 to 79.31% vol	0.75 mL
Vapour Pressure	ASTM D5191; IP 394; EN 13016-1	50 to 95 kPa	1-10 mL

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Setavap Certified Reference Material, Pentane 200 mL (80610-0)

- Pentane with certified values provided for multiple test methods
- Characterised using a network of competent laboratories to provide international traceability
- Use this standard to cross-check instrument performance and to assist in operator training with a typical material

Test Name:	Test Method:	Range:	Amount/Test:
Vapour Pressure	ASTM D5191; EN 13016-1 ASTM D6378; EN 13016-3	P_{TOT} 111.6 to 114 kPa VP_4 106.7 to 109.1 kPa	1 to 10 mL

Single Test Verification Materials (STVM)

- Gasoline with a certified value provided for a single test method
- Characterised using a network of competent laboratories to provide international traceability
- Use this standard to cross-check instrument performance and to assist in operator training with a typical material
- Small pack size to avoid cross-contamination and help meet verification requirements for audited laboratories and those which comply with ISO 17025
- 2 year shelf life from manufacture

Single Test Verification Material - Gasoline 5 x 5 mL (99980-0)

Test Name:	Test Method:	Range:	Amount/Test:
Motor Gasoline Aromatics	ASTM D6839; ISO 22854; EN 14517	22.41 to 35.41% vol	0.1 µL
Motor Gasoline Olefins	ASTM D6839; ISO 22854; EN 14517	0.31 to 14.50% vol	0.1 µL
Motor Gasoline Saturates	ASTM D6839; ISO 22854; EN 14517	43.62 to 77.2% vol	0.1 µL
Motor Gasoline Oxygenates	ASTM D6839; ISO 22854; EN 14517	0.04 to 12.3% vol	0.1 µL
Motor Gasoline Oxygen	ASTM D6839; ISO 22854; EN 14517	0 to 2.58% vol	0.1 µL
Motor Gasoline Benzene	ASTM D6839; ISO 22854; EN 14517	0.00 to 1.00% vol	0.1 µL

Salt in Crude

Materials to calibrate or confirm the calibration of the Salt in Crude Analyser as required in ASTM D3230 and IP 265.

- Produced in general accordance with the principles of ISO 17034 and ISO 33405
- Supports full compliance to ASTM, IP, CEN and ISO test methods
- Supplied with full documentation including Safety Data Sheet (SDS) in tamper evident security packaging

Salt in Crude Mixed Salt Solution 250 mL (99704-001)

- A volumetric blend of Calcium chloride ($CaCl_2$), Magnesium chloride ($MgCl_2$) and Sodium chloride (NaCl) solutions
- Produced by accurately measuring the volumes of the solutions in proportions of 10%, 20% and 70% respectively
- Use this material to make calibration or verification samples
- Suitable for use with the Salt in Crude Analyser (99700-6)
- 2 year shelf life from date of manufacture

Test Method:	Amount/Test:
ASTM D3230	0.3 to 45 mL

Salt in Crude Refined Neutral Oil 250 mL (99704-002)

- Refined neutral oil, chloride free
- Use this material to make calibration or verification samples
- Suitable for use with the Salt in Crude Analyser (99700-6)

Test Method:	Amount/Test:
ASTM D3230; IP 265	10 mL

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Lubricant

Lubricant Standards help to provide accurate monitoring of instrument performance and operator technique.

- Produced in general accordance with the principles of ISO 17034 and ISO 33405
- Supports full compliance to ASTM, IP, CEN and ISO test methods
- Supplied with full documentation including Safety Data Sheet (SDS) in tamper evident security packaging

Air Release Value (ARV) Certified Reference Material 500 mL (15842-0)

- Lubricating oil with certified values at 50 °C and 75 °C
- Characterised by using a reference method in a single laboratory
- Use this standard to verify test method performance and to assist in operator training with a typical material
- Suitable for use with the Seta Air Release Value System ARV (15840-0)
- 1 year shelf life from date of manufacture

Test Method:	Certified Value:	Amount/Test:
ASTM D3427; IP 313; BS 2000-313	14 to 18 minutes at 50 °C 4 to 8 minutes at 75 °C	200 mL

Bitumen

A unique multi-test verification from a single sample offers readily available support for laboratory accreditation and compliance programmes.

- Produced in general accordance with the principles of ISO 17034 and ISO 33405
- Supports full compliance to ASTM, IP, CEN and ISO test methods
- Supplied with full documentation including Safety Data Sheet (SDS) in tamper evident security packaging

Multi Test Verification Material - Bitumen 500 mL (99856-0)

- Bitumen with certified values provided for multiple test methods
- Characterised using a network of competent laboratories to provide international traceability
- Use this standard to cross-check instrument performance and to assist in operator training with a typical material

Test Name:	Test Method:	Range:	Amount/Test:
Softening Point	IP 58; EN ISO 1427	37 to 54 °C	7.5 mL
Needle Penetration	ASTM D1321; IP 49; EN ISO 1426	41 to 200 Pen	130 mL

Flash Point

Certified Reference Materials for the verification of laboratory flash point instruments.

- Produced in general accordance with the principles of ISO 17034 and ISO 33405
- Supports full compliance to ASTM, IP, CEN and ISO test methods
- Supplied with full documentation including Safety Data Sheet (SDS) in tamper evident security packaging

Small Scale Certified Reference Material

- Non-hazardous hydrocarbon with a certified value provided for a single test method
- Characterised using a network of competent laboratories to provide international traceability
- Use this standard to cross-check instrument performance and to assist in operator training with a typical material
- Small pack size to avoid cross-contamination and help meet verification requirements for audited laboratories and those which comply with ISO 17025
- 2 year shelf life from manufacture

Part Number:	Test Method:	Nominal Value:	Amount/Test:	Volume:
99878-3	ASTM D3278; D3828; IP 523; ISO 3679	75 °C	2 mL	50 mL
99879-0	ASTM D3278; D3828; IP 523; ISO 3679	192 °C	2 mL	50 mL

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Cleveland Standard

- Non-hazardous hydrocarbon with a certified value provided for a single test method
- Characterised by using a reference method in a single laboratory
- Use this standard to cross-check instrument performance and to assist in operator training with a typical material
- Small pack size to avoid cross-contamination and help meet verification requirements for audited laboratories and those which comply with ISO 17025
- 2 year shelf life from manufacture

Part Number:	Test Method:	Nominal Value:	Amount/Test:	Volume:
99882-0	ASTM D92; IP 36; EN 2592	258 °C	70 mL	80 mL pack of 3
99883-0	ASTM D92; IP 36; EN 2592	258 °C	70 mL	80 mL pack of 6
99884-0	ASTM D92; IP 36; EN 2592	258 °C	70 mL	80 mL pack of 12

Pensky-Martens Certified Reference Material

- Non-hazardous hydrocarbon with certified values provided for multiple test methods
- Characterised by using a reference method in a single laboratory
- Use this standard to cross-check instrument performance and to assist in operator training with a typical material
- Small pack size to avoid cross-contamination and help meet verification requirements for audited laboratories and those which comply with ISO 17025
- 2 year shelf life from manufacture

Part Number:	Test Method:	Nominal Value:	Amount/Test:	Volume:
SETA-0412-0051	ASTM D93	77 °C	75 mL	100 mL pack of 3
SETA-0412-0052	ASTM D93	140-150 °C	75 mL	100 mL pack of 3
SETA-0412-0053	ASTM D93	225 °C	75 mL	100 mL pack of 3

Particle Counting

Reference Standards are for use with particle counters to verify and calibrate in accordance with ISO 11171.

- Manufactured in accordance with ISO 11171 Annex F
- Produced in general accordance with the principles of ISO 17034 and ISO 33405
- Supports full compliance to ASTM, IP, CEN and ISO test methods
- Supplied with full documentation including Safety Data Sheet (SDS) in tamper evident security packaging

AvCount Calibration Material 'a' 250 mL (SA1001-0)

- Refined hydrocarbon containing NIST RM 8631x test dust with certified values
- Characterised by using a reference method and apparatus with NIST SRM 2806a calibration in a single laboratory
- Use this standard to calibrate particle counters in accordance with ISO 11171 (2020)
- 2 year shelf life from date of manufacture

Test Method:	Sizes Reported:	Amount/Test:
ASTM D7619; IP 565; ISO 11171	4 µm(c), 6µm(c), 14 µm(c)	80 mL

AvCount Calibration Material 'd' 250 mL (SA1121-0)

- Refined hydrocarbon containing NIST RM 8631x test dust with certified values
- Characterised by using a reference method and apparatus with NIST SRM 2806d calibration in a single laboratory
- Use this standard to calibrate particle counters in accordance with ISO 11171:2022
- 2 year shelf life from date of manufacture

Test Method:	Sizes Reported:	Amount/Test:
ASTM D7619; IP 565; ISO 11171	4 µm(c), 6µm(c), 14 µm(c), 21 µm(c), 25 µm(c), 30 µm(c)	80 mL

AvCount Verification Material 250 mL (SA1006-0)

- Refined hydrocarbon containing NIST RM 8631x test dust with certified values
- Characterised by using a reference method and apparatus with NIST SRM 2806a and 2806d calibration in a single laboratory.
- 2806b values are available upon request
- Use this standard to verify test method performance
- Suitable for use with particle counters calibrated in accordance with ISO 11171
- 2 year shelf life from date of manufacture

Test Method:	Sizes Reported:	Amount/Test:
ASTM D7619; IP 565; IP 630	4 µm(c), 6µm(c), 14 µm(c)	80 mL

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Hydrogen Sulphide

Reference Materials for use with Seta H_2S Analysers (SA4000-3 and SA4000-4) in accordance with ASTM D7621 and IP 570.

- Produced in general accordance with the principles of ISO 17034 and ISO 33405
- Supports full compliance to ASTM, IP, CEN and ISO test methods
- Supplied with full documentation including Safety Data Sheet (SDS) in tamper evident security packaging

H_2S Diluent

- Proprietary water white API Group 2 base oil with a typical viscosity of 100 mm^2/s at 40 °C
- Suitable for use with Seta H_2S Analysers (SA4000-3 and SA4000-4)

Part Number:	Test Method:	Amount/Test:	Volume:
SA4000-004	ASTM D7621; IP 570	20 mL	500 mL
SA4013-0	ASTM D7621; IP 570	20 mL	5 Litres
SA4014-0	ASTM D7621; IP 570	20 mL	20 Litres

H_2S Verification Material

- Aqueous solution containing a known concentration of liquid phase hydrogen sulphide with a certified value
- Produced by accurately determining the mass of ingredients using a balance certifed by an ISO 17025 accredited laboratory
- Use this standard to verify test method performance
- Kit is supplied complete with activator, 2 syringes, dispensing tube and silicone tubing
- Suitable for use with Seta H_2S Analysers (SA4000-3 and SA4000-4)
- 3 month shelf life from date of manufacture (store in a refrigerator)

Part Number:	Test Method:	Nominal Value:	Volume:
SETA-0512-0024	ASTM D7621; IP 570	2 mg/kg	24 mL
SETA-0512-0025	ASTM D7621; IP 570	9 mg/kg	24 mL

H_2S Proficiency Test Scheme

PT Schemes support analytical competency and compliance with ISO 17025 recommended practice.

Validation of apparatus performance is stated as a mandatory requirement at least every three months in IP 570/15 (2021). Participation in the Seta IP 570 Proficiency Testing Scheme is the preferred means to achieve this requirement, enabling laboratories to evaluate their performance for testing H_2S in the liquid phase using the Seta H_2S Analyser.

Participants in the statistical quality assurance programme can continually monitor and compare their performance by analysing their data against similar laboratories in accordance with ISO 17025. This gives the ability to demonstrate compliance with laboratory accreditation requirements, identify any potential equipment or operational bias and provide added confidence to staff and customers. Ultimately helping to increase laboratory efficiency whilst reducing costs.

IP 570 PTS Quarterly Membership (SA4032-0)

- Meets the general requirements of ISO 17043

Test Method:
ASTM D7621; IP 570

www.seta-pt.co.uk

A dedicated website for Seta Proficiency Testing

Receive a unique laboratory login as part of the IP 570 PTS Quarterly Membership. Simply enter results online quickly and easily, once submitted an immediate pass or fail notification is given. If results are outside the expected tolerance range, advice and support including a diagnostic checklist is provided. Once the scheme closes, a summary report is distributed to all particpants.

Participants are sent reminders if a scheme is about to close and results have not been submitted, or if a subscription is coming to an end.

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Fatty Acid Methyl Esters (FAME)

Stanhope-Seta offers an extensive range of FAME Certified Reference Materials which should be used for calibration, verification and performance checks in accordance with test methods or local quality control requirements.

- Produced in general accordance with the principles of ISO 17034 and ISO 33405
- Supports full compliance to ASTM, IP, CEN and ISO test methods
- Supplied with full documentation including Safety Data Sheet (SDS) in tamper evident security packaging

FIJI Verification Material

- Hydrocarbon containing a known concentration of FAME with a certified value
- Produced by accurately determining the mass of ingredients using a balance certified by an ISO 17025 accredited laboratory
- Use this standard to verify test method performance
- Suitable for use with Seta FIJI Analysers (FAME in Jet SA5000-2, FAME in Distillate and Residual Fuels SA5100-0, FAME in MultiFuels SA5200-0)
- 2 year shelf life from date of manufacture

Part Number:	Test Method:	Nominal Value:	Volume:
SETA-0112-0001	ASTM D7797; D7963; IP 583	15 mg/kg	100 mL pack of 3
SETA-0112-0004	ASTM D7797; D7963; IP 583	30 mg/kg	100 mL
SETA-0112-0002	ASTM D7797; D7963; IP 583	50 mg/kg	100 mL pack of 3
SETA-0112-0005	ASTM D7797; D7963; IP 583	100 mg/kg	100 mL
SETA-0112-0003	ASTM D7797; D7963; IP 583	150 mg/kg	100 mL pack of 3
SETA-0112-0006	ASTM D7963	400 mg/kg	100 mL
SETA-0112-0007	ASTM D7963	900 mg/kg	100 mL

FIJI IP 583 and ASTM D7797 Calibration Material Set 100 mL (SETA-0114-0017)

- A set of five hydrocarbon samples containing a known concentration of FAME, with certified values
- Produced by accurately determining the mass of ingredients using a balance certified by an ISO 17025 accredited laboratory
- Use these standards to calibrate the Seta FIJI Analyser (FAME in Jet SA5000-2)
- 2 year shelf life from date of manufacture

Test Method:	Nominal Value:	Amount/Test:
ASTM D7797; IP 583	30, 75, 100, 125, 150 mg/kg	50 mL

FIJI ASTM D7963 Calibration Material Set 100 mL (SETA-0114-0018)

- A set of nine hydrocarbon samples containing a known concentration of FAME, with certified values
- Produced by accurately determining the mass of ingredients using a balance certified by an ISO 17025 accredited laboratory
- Use these standards to calibrate the Seta FIJI Analysers (FAME in Distillate and Residual Fuels SA5100-0, FAME in MultiFuels SA5200-0)
- 2 year shelf life from date of manufacture

Test Method:	Nominal Value:	Amount/Test:
ASTM D7963	30, 75, 100, 125, 150, 300, 500, 800, 1000 mg/kg	50 mL

FIJI DRG Range Extender Diluent 500 mL

- FAME free hydrocarbon meeting the requirements in ASTM D7963 Annex B and IP 631
- Use to dilute samples which are more than 1000 mg/kg
- Suitable for use with Seta FIJI Analysers (FAME in Distillate and Residual Fuels SA5100-0, FAME in MultiFuels SA5200-0)

Part Number:	Test Method:	Volume:
SA5028-0	ASTM D7963	500 mL
SA5029-0	ASTM D7963	5 Litres
SA5030-0	ASTM D7963	20 Litres

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SetaCheck FAME Verification Material 250 mL

- Hydrocarbon containing a known concentration of FAME with a certified value
- Produced by accurately determining the mass of ingredients using a balance certified by an ISO 17025 accredited laboratory
- Use this standard to verify test method performance
- Suitable for use with SetaCheck Biodiesel (SA5500-0)
- 2 year shelf life from date of manufacture

Part Number:	Test Method:	Range:	Amount/Test:
SETA-0112-0030	ASTM D8274	7%	2 mL
SETA-0112-0031	ASTM D8274	15%	2 mL
SETA-0112-0032	ASTM D8274	25%	2 mL
SETA-0112-0033	ASTM D8274	30%	2 mL
SETA-0112-0034	ASTM D8274	40%	2 mL

SetaCheck FAME Calibration Kit 15 mL

- A set of hydrocarbon samples containing a known concentration of FAME, with certified values
- Produced accurately determining the mass of ingredients using a balance certified by an ISO 17025 accredited laboratory
- Use these standards to calibrate the SetaCheck Biodiesel (SA5500-0) and SetaCheck Biodiesel Plus (SA5550-0)
- 2 year shelf life from date of manufacture

Part Number:	Test Method:	Nominal Value:	Amount/Test:
SA5501-0	ASTM D8274	0, 0.1, 0.2, 0.5, 1, 2, 5, 10, 20, 30, 40 %	2 mL
SA5551-0	ASTM D8274	0, 0.1, 0.2, 0.5, 1, 2, 5, 10, 20, 30, 40, 60, 80%	2 mL

SetaCheck FAME Verification Kit 60 mL (SA5502-0)

- A set of three hydrocarbon samples containing known concentrations of FAME with certified values
- Produced by accurately determining the mass of ingredients using a balance certified by an ISO 17025 accredited laboratory
- Use these standards to verify test method performance
- Suitable for use with SetaCheck Biodiesel (SA5500-0)
- 2 year shelf life from date of manufacture

Test Method:	Nominal Value:	Amount/Test:
ASTM D8274	0.5, 5.0, 20.0%	2 mL

Colour

Colour Reference Standards are suitable for the routine calibration of colour measuring instruments and verification of test results. The highly stable standards are also suitable for instrument and laboratory correlation.

- Produced in general accordance with the principles of ISO 17034 and ISO 33405
- Supports full compliance to ASTM, IP, CEN and ISO test methods
- Supplied with full documentation including Safety Data Sheet (SDS) in tamper evident security packaging

ASTM Colour Reference Standard 500 mL

- Colour reference standard with certified values
- Characterised by using a reference method in a single laboratory under UKAS accreditation
- Use this standard to verify test method performance
- Suitable for use with SetaCheck Colour ASTM Colorimeter (15255-0), Seta Multi-Colour Automatic Colorimeter (15260-4) and Seta Lovibond High Precision Colorimeter (15320-2)

Part Number:	Test Method:	Cetified Value:	Amount/Test:
15370-0	ASTM D1500	<0.5	2 mL
15371-0	ASTM D1500	1	2 mL
15372-0	ASTM D1500	3	2 mL
15373-0	ASTM D1500	5	2 mL
15377-0	ASTM D1500	7	2 mL

Saybolt Colour Reference Standard 500 mL

- Colour reference standard with certified values
- Characterised by using a reference method in a single laboratory under UKAS accreditation
- Use this standard to verify test method performance
- Suitable for use with SetaCheck Colour Saybolt Colorimeter (15256-0), Seta Multi-Colour Automatic Colorimeter (15260-4) and Seta Lovibond High Precision Colorimeter (15320-2)

Part Number:	Test Method:	Cetified Value:	Amount/Test:
15386-0	ASTM D156	10	2 mL
15387-0	ASTM D156	0	2 mL
15388-0	ASTM D156	12	2 mL
15389-0	ASTM D156	25	2 mL

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Bath Oil

Seta Bath Oils are formulated to maximise heat stability and efficiency of Seta baths.

- High flash point
- Low viscosity - reduces formation and aids dissipation of bubbles
- High transparency

Bath Oil 40 – 85 °C 5 Litres (94630-0)

- Suitable for use with Seta Viscometer Baths

Temperature range:	Volume:
40-85 °C	5 Litres

Bath Oil 120 – 150 °C 2 Litres (94631-0)

- Suitable for use with Seta Viscometer Baths

Temperature range:	Volume:
120-150 °C	2 Litres

Bath Oil 120 – 150 °C 20 Litres (94632-0)

- Suitable for use with Seta Viscometer Baths

Temperature range:	Volume:
120-150 °C	20 Litres

Bath Oil 40 – 85 °C 20 Litres (94633-0)

- Suitable for use with Seta Viscometer Baths

Temperature range:	Volume:
40-85 °C	20 Litres

Bath Oil 80 – 120 °C 5 Litres (94634-0)

- Suitable for use with Seta Viscometer Baths

Temperature range:	Volume:
80-120 °C	5 Litres

Bath Oil 80 – 120 °C 20 Litres (94635-0)

- Suitable for use with Seta Viscometer Baths

Temperature range:	Volume:
80-120 °C	20 Litres