

## MULTI-TEST VERIFICATION MATERIALS

- A highly cost effective solution to laboratory verification requirements
- Verification to ASTM/CEN/ISO/IP and equivalent test procedures
- Cross-checks instrument performance using real product
- Assistance for operator training

Incorrect determination of a result can have far reaching financial and safety implications. The growing use of automated instrumentation increases the possibility that incorrect results may go undetected and in addition the early indication of bias is a useful warning to minimise production 'giveaway'.

Multi Test Verification Materials (MTVM) allow routine monitoring of instrument performance and are also particularly helpful in training personnel on new equipment and test methods. We recommend the purchase of MTVM's with new instrumentation to assist with installation and commissioning.

Seta MTVMs are unique because, unlike most other certified reference materials that are only suitable for validating a specific parameter/value, MTVMs enable a user to validate different tests and instrumentation using the same sample material.

MTVMs are blended by a major multi-national refining company in conformance with ISO 9001 and ISO/IEC/EN 17025 (ISO Guide 25 and EN 45001) and tested internationally by a statistically significant number of laboratories to determine certified values.

Seta MTVMs are supplied in 500ml containers (except 99856-0 which is 250ml) and have an 18 month validity from date of supply.

*Note: Each MTVM sample provides a single value for all of the latest parameters shown in the tables. The actual value of each test will fall within the range shown.*



CERTIFICATE OF MEASUREMENT (WORKS) FOR ALL TEST METHODS COVERED BY THE MATERIAL



TECHNICAL DATASHEETS AVAILABLE

## 99850-0 SETA MTVM - KEROSENE (JET TURBINE FUEL) 500ML

Test Name	ASTM / Method	Range	Amount/test
Distillation IBP	D86-IP 123; EN ISO 3405	140 to 180°C	100ml
Distillation 10%	D86-IP 123; EN ISO 3405	159 to 188°C	100ml
Distillation 50%	D86-IP 123; EN ISO 3405	183 to 218°C	100ml
Distillation 90%	D86-IP 123; EN ISO 3405	220 to 247°C	100ml
Distillation FBP	D86-IP 123; EN ISO 3405	244 to 268°C	100ml
Distillation Residue	D86-IP 123; EN ISO 3405	1.1 to 1.3 %vol	100ml
Distillation Loss	D86-IP 123; EN ISO 3405	0.4 to 0.7 %vol	100ml
Flash Point	IP 170; EN ISO 13736	35 to 60°C	85ml
Freezing Point	D2386-IP 16	-62 to -44°C	25ml
Aromatics FIA	D1319-IP 156	16 to 22 %vol	0.75ml
Smoke Point	D1322-IP 57; ISO 1322	20 to 25mm	20ml
Kin Vis -20°C	D445-IP 71; EN ISO 3104	2 to 8mm <sup>2</sup> /s	20ml
Acid Number	D3242-IP 354	< 0.100mg KOH/g	100ml
Mercaptans	D3227-IP 342; ISO 3012	0.0003 to 0.0100%(m/m)	40ml

## 99851-0 SETA MTVM - GAS OIL 500ML

Test Name	ASTM / Method	Range	Amount/test
Distillation at 15°C	D1298-IP 160; EN ISO 3675	0.83 to 0.854kg/l	Up to 200ml
Distillation IBP	D86-IP 123; EN ISO 3405	160 to 190°C	100ml
Distillation 10%	D86-IP 123; EN ISO 3405	200 to 242°C	100ml
Distillation 50%	D86-IP 123; EN ISO 3405	260 to 290°C	100ml
Distillation 90%	D86-IP 123; EN ISO 3405	320 to 350°C	100ml
Distillation 95%	D86-IP 123; EN ISO 3405	335 to 368°C	100ml
Distillation FBP	D86-IP 123; EN ISO 3405	350 to 385°C	100ml
Distillation Residue	D86-IP 123; EN ISO 3405	1.25 to 1.42 %vol	100ml
Distillation Loss	D86-IP 123; EN ISO 3405	0.26 to 0.55 %vol	100ml
Flash Point	D93-IP 34; EN ISO 2719	56 to 80°C	75ml
Cloud Point	D2500; D5771-IP 444; D5772-IP 445; D5773-IP 446; IP 219; ISO 3015; EN 23015	-17 to -4°C	Up to 38ml
CFPP	D6371; IP 309; EN 1166	-30 to 0°C	45ml
Pour Point	D97-IP 15; D5950; D5949; D6749; D6892; D5985; EN ISO 3016	-33 to -6°C	Up to 38ml
Kin Vis 40°C	D445-IP 71; EN ISO 3104	2.3 to 3.5mm <sup>2</sup> /s	Up to 40ml
Lubricity HFRR	D6079; IP 450; ISO 12156-1	271 to 512µm	2ml
Water Karl Fischer	D1744; IP 438; EN ISO 12937	23.4 to 63.9mg/kg	5ml

**MULTI-TEST VERIFICATION MATERIALS**

**99854-0 SETA MTVM – MOTOR GASOLINE 500ML**

Test Name	ASTM / Method	Range	Amount/test
Motor Octane No.	D2700; ISO 5163	83 to 90 MON	-
Research Octane No.	D2699; ISO 5164	96 to 101 RON	-
Density at 15°C	D1298-IP 160; EN ISO 3675	0.721 to 0.763kg/l	Up to 200ml
Distillation IBP	D86-IP 123; EN ISO 3405	32 to 39°C	100ml
Distillation 70°C	D86-IP 123; EN ISO 3405	15 to 36 %vol	100ml
Distillation 100°C	D86-IP 123; EN ISO 3405	36 to 58 %vol	100ml
Distillation 150°C	D86-IP 123; EN ISO 3405	75 to 90 %vol	100ml
Distillation FBP	D86-IP 123; EN ISO 3405	175 to 205°C	100ml
Aromatics FIA	D1319; IP 156	19 to 42 %vol	0.75ml
Olefins FIA	D1319; IP 156	1.5 to 15 %vol	0.75ml
Saturates FIA	D1319; IP 156	42 to 72 %vol	0.75ml
Vapour Pressure	D5191; IP 394; EN 13016-1	50 to 85kPa	3ml

**99852-0 SETA MTVM – FUEL OIL 500ML**

Test Name	ASTM / Method	Range	Amount/test
Density at 15°C	D1298-IP 160; EN ISO 3675	0.94 to 0.994 kg/l	200ml
Pour Point	D97-IP 15; D5985; D5950; D5949; D6749; D6892; EN ISO 3016	-14 to -17°C	Up to 38ml
Kin Vis 50°C	D445-IP 71; EN ISO 3104	150 to 1800mm <sup>2</sup> /s	Up to 40ml
Kin Vis 100°C	D445-IP 71; EN ISO 3104	20 to 95mm <sup>2</sup> /s	Up to 40ml
Micro Carbon	D4530; IP 398; ISO 10370	0.10 to 30.0 % (m/m)	2ml
Flash Point	D93 (b) - IP 34 (b); EN ISO 2719 (b)	92.3 to 121.6°C	75ml

**99853-0 SETA MTVM – LUBRICATING OIL 500ML**

Test Name	ASTM / Method	Range	Amount/test
Kin Vis 40°C	D445-IP 71; EN ISO 3104	70 to 160 mm <sup>2</sup> /s	Up to 40ml
Kin Vis 100°C	D445-IP 71; EN ISO 3104	10 to 19 mm <sup>2</sup> /s	Up to 40ml
Viscosity Index	D2270-IP 226; ISO 2909	139 to 180	Up to 80ml
Pour Point	D97-IP 15; D5985; D5950; D5949; D6749; D6892; EN ISO 3016	-49.1 to -33.9°C	Up to 38ml
Flash Point	D93-IP 34; EN ISO 2719	196 to 213°C	75ml

**99856-0 SETA MTVM – BITUMEN 250ML**

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

**99908-0 SETA BIO MTVM – GAS OIL 500ML**

- ULSD EN590 Biofuel
- 5% FAME (EN 14214) in Diesel



BIO-FUEL TESTING

Test Name	ASTM/Method	Sample Result	Amount/test
Distillation at 15°C	D1298-IP 160	0.8404kg/l	Up to 200ml
Distillation IBP	D86-IP 123	173.6°C	100ml
Distillation 10%	D86-IP 123	204.7°C	100ml
Distillation 50%	D86-IP 123	260.7°C	100ml
Distillation 90%	D86-IP 123	327.2°C	100ml
Distillation 95%	D86-IP 123	346.2°C	100ml
Distillation FBP	D86-IP 123	358.1°C	100ml
Distillation Residue	D86-IP 123	1.3 %vol	100ml
Distillation Loss	D86-IP 123	0.6 %vol	100ml
Flash Point	D93-IP 34	66.6°C	75ml
Cloud Point	D2500-IP 219	-6.3°C	Up to 38ml
CFPP	IP 309	-19.7°C	45ml
Pour Point	D97-IP 15	-28.3°C	Up to 38ml
Kin Vis 40°C	D445-IP 71	2.567mm <sup>2</sup> /s	Up to 40ml
Lubricity HFRR	D6079; IP 450	207.1µm	2ml
Water Karl Fischer	D1744; IP 438	60.138mg/kg	5ml

