



APPLICATIONS

Viscosity Distillation Flash Point

- > Pensky-Martens
- > TAG
- > Abel
- > Cleveland Open Cup

Cold Behavior

- > Pour Point
- > Cloud Point
- > Freezing Point
- > Cold Filter Plugging Point

Evaporation Loss

- > Noack Test

Certified Reference Materials (CRM)

VERIFY TESTING EQUIPMENT ACCURACY, PRECISION

ADVANTAGES

- **Ensures dependable performance from your physical testing equipment**
- **Isolates testing bias before it impacts product quality**
- **Carefully blended materials satisfy ISO 31, 34 & 35 standards**
- **Certified values determined through international round robin testing by a minimum of 12 labs**
- **Meets traceability requirements for ISO/UKAS accreditation***

Why use reference materials? Though automated testing equipment greatly improves testing efficiency and flexibility, it also presents a risk: overlooked *testing bias*. With instrument performance left unchecked, measurement bias can gradually eat away at your profitability. Or worse, it can falsely present product as meeting specification when, in truth, it fails established quality standards. Such a situation not only places customer safety at risk, but also jeopardizes your own company's reputation.

By routinely verifying your instrument's performance, you'll ensure consistent quality that meets expected performance demands.

- > Know that requirements of all quality systems are met.
- > Establish good inter-laboratory correlation.
- > Generate reliable test data from automatic, semi-automatic, and manual equipment.

*Contact your PAC representative for details.

CERTIFIED REFERENCE MATERIALS (CRM)

ORDERING INFORMATION

	Approximate Value	Order Number
Distillation 255 ml		
ISO 3405 ASTM D 86 IP 123 DIN 51751		
Diesel Fuel	+170°C to +370°C	01000-626-51
Cloud Point 255 ml		
ISO 3015 ASTM D 2500 ASTM D 5771 ASTM D 5772 DIN EN 23015		
Diesel Fuel	-5°C	01000-815-51
CFPP 255 ml		
ASTM D 6371 EN 116 IP 309		
Diesel Fuel Transition Blend	-20°C	01000-309-51
Diesel Fuel Winter Blend	-30°C	01000-309-52
Freezing Point 255 ml		
ISO 3013 ASTM D 2386 IP 16 DIN 51421		
Jet A1/Kerosene	-50°C	01000-860-51
Jet A1/Kerosene	-60°C	01000-860-52
Pour Point 255 ml		
ISO 3016 ASTM D 97 ASTM D 5950 ASTM D 6892		
Base Oil	-15°C	01000-852-51
Base Oil	-25°C	01000-852-52
Flash Point 255 ml		
Pensky Martens: ISO 2719 ASTM D 93 IP 34 EN 22719		
Diesel Fuel (method A)	+60°C	01000-329-51
Base Oil (method A)	+220°C	01000-329-53
Middle Distillate (METHOD B)	+100°C	01000-329-52
Tag: ASTM D 56		
Jet A1/Kerosene	+50°C	01000-256-51
Abel: ISO 13736 IP 170		
Jet A1/Kerosene	+50°C	01000-170-51
Cleveland COC: ISO 22592 ASTM D 92 EN 22592 IP 36		
Base Oil	+220°C	01000-292-51

Noack Evaporation Loss | ASTM D 5800 | CEC L-40-93 | IP421

Base stock	CEC RL172	14%	W110701	1litre (¼ gallon)
Base stock	CEC RL208	12%	W110702	1litre (¼ gallon)

	Density 20°C	Viscosity (approximate values) mm ² /s					Order Number
		20°C	25°C	40°C	50°C	100°C	
Viscosity 500 ml Polyalphaolefin							
S3	0.8124	4.6	4.0	2.9	2.4	1.2	01000-445-01
D5	0.8217	7.0	6.0	4.0	3.3	1.4	01000-445-11
S6	0.8274	11	8.9	5.7	4.4	1.8	01000-445-02
D10	0.8330	14	12	7.5	5.7	2.2	01000-445-12
S20	0.8478	44	34	18	13	3.9	01000-445-03
N35	0.8565	77	59	30	20	5.2	01000-445-13
S60	0.8616	170	120	54	34	7.7	01000-445-04
N100	0.8658	373	270	114	71	13	01000-445-09
S200	0.8706	640	450	180	106	17	01000-445-05
D500	0.8717	830	580	225	130	20	01000-445-15
N350	0.8732	1259	867	323	185	26	01000-445-19
D1000	0.8740	1680	1150	420	234	31	01000-445-16
S600	0.8753	2400	1415	522	280	36	01000-445-06
N1000	0.8800	4479	2980	1004	538	59	01000-445-20
S2000	0.8835	8000	5300	1700	884	84	01000-445-07
D5000	0.8840	8800	5700	1850	950	88	01000-445-17
N4000	0.8873	17750	11500	3500	1770	143	01000-445-18
S8000	40°C: 0.8797	-	23600	6700	3256	236	01000-445-08
S30000	40°C: 0.8858	-	-	22020	10420	600	01000-445-10

Viscosity | 500 ml | Kerosene

Jet A1/Kerosene (3.7mm ² /s) -20°C	01000-445-51
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SPECIFICATIONS

Verification: Defined for each production lot. Derived from statistical analysis of results obtained in Round Robin test series with at least 12 laboratories.

Validity: One year from shipping date if stored according to specified conditions.

Due to continuing product development, specifications subject to change at any time without notice.

How often should you verify testing accuracy?

- What test method are you verifying?
- How frequently is the instrument used?
- Has your lab established a verification protocol?

Answer: Depending upon your weekly sample load and your instrument's test characteristics (i.e. test duration, sample volume, system stability, etc.), some tests may easily and cost-effectively benefit from higher frequency verification while others require checking less often.

Your best line of defense against test bias is a consistent verification program. We suggest implementing this step within a standard quality control procedure. Exporting reference data to a LIMS will further enable statistical process control (SPC)—a powerful tool for measuring laboratory performance.

FOR ADDITIONAL INFORMATION

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