

Verify testing Equipment Accuracy and Precision

CERTIFIED REFERENCE MATERIALS



CRM

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.

HOW OFTEN SHOULD YOU VERIFY TESTING

1. What test method are you verifying?
2. How frequently is the instrument used?
3. 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.

PAC CRM

- 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

BENEFITS

- Ensures dependable performance from your physical testing equipment
- Isolates testing bias before it impacts product quality
- Carefully blended materials satisfy rigorous ISO Guides 31, 34 & 35
- Certified values determined through international round robin testing by a minimum of 16 labs
- Meets traceability requirements for ISO/NAMAS accreditation

APPLICATION RANGE & METHODS

- **Flash Point**
 - Pensky-Martens ASTM D93 A, ISO 2719 A
 - TAG ASTM D56
 - Abel EN ISO 13736
 - Cleveland Open Cup ASTM D92, ISO 2592
- **Cold Behavior**
 - Pour Point ASTM D97, ISO 3016
 - Cloud Point ASTM D2500, ISO 3015
 - Freezing Point ASTM D2386, ISO 3013
 - Cold Filter Plugging Point ASTM D6371, EN 116
- **Distillation**
 - ASTM D86
 - ISO 3405
- **Viscosity**
 - ASTM D445
 - ISO 3104
- **Cetane Number ASTM D7668**
- **NOACK Evaporation Loss**
 - ASTM D5800, CEC L-40



Application	Appr. Certified Value	Test Method	Description	Part Number
Flash Point	+45°C	ABEL - ISO 13736	Kerosene, 255 ml	01000-170-51
	+45°C	TAG - ASTM D56	Kerosene, 255 ml	01000-256-51
	+220°C	COC - ASTM D92, ISO 2592	Base Oil I, 255 ml	01000-292-51
	+65°C	PM - ASTM D93 A, ISO 2719 A	Diesel Fuel, 255ml	01000-329-51
	+100°C	PM - ASTM D93 B, ISO 2719 B	255ml	01000-329-52
	+210°C	PM - ASTM D93 A, ISO 2719 A	255ml	01000-329-53
CFPP	-17°C	ASTM D6371, EN 116	Diesel Fuel, 255ml	01000-309-51
	-25°C	ASTM D6371, EN 116	Diesel Fuel, 255ml	01000-309-52
Distillation	170 to 370°C	ASTM D86, ISO 3405	Diesel Fuel, 255 ml	1310-010-010301
Cloud Point	-5°C	ASTM D2500, ISO 3015	255ml	01000-815-51
Pour Point	-15°C	ASTM D97, ISO 3016	255ml	01000-852-51
	-25°C	ASTM D97, ISO 3016	255ml	01000-852-52
Freezing Point	-50°C	ASTM D2386, ISO 3013	255ml	01000-860-51
Viscosity	2.9 mm ² /s @40°C; 1.2 mm ² /s @ 100°C	ASTM D445, ISO 3104	S3, 500 ml	01000-445-01
	6 mm ² /s @40°C; 1.8 mm ² /s @ 100°C	ASTM D445, ISO 3104	S6, 500 ml	01000-445-02
	18 mm ² /s @40°C; 3.8 mm ² /s @ 100°C	ASTM D445, ISO 3104	S20, 500 ml	01000-445-03
	54 mm ² /s @40°C; 8 mm ² /s @ 100°C	ASTM D445, ISO 3104	S60, 500 ml	01000-445-04
	180 mm ² /s @40°C; 18 mm ² /s @ 100°C	ASTM D445, ISO 3104	S200, 500 ml	01000-445-05
	520 mm ² /s @40°C; 37 mm ² /s @ 100°C	ASTM D445, ISO 3104	S600, 500 ml	01000-445-06
	1700 mm ² /s @40°C; 90 mm ² /s @ 100°C	ASTM D445, ISO 3104	S2000, 500 ml	01000-445-07
	7000 mm ² /s @40°C; 250 mm ² /s @ 100°C	ASTM D445, ISO 3104	S8000, 500 ml	01000-445-08
	100 mm ² /s @40°C; 12 mm ² /s @ 100°C	ASTM D445, ISO 3104	N100, 500 ml	01000-445-09
	23000 mm ² /s @40°C; 700 mm ² /s @ 100°C	ASTM D445, ISO 3104	S30000, 500 ml	01000-445-10
	3.9 mm ² /s @40°C; 1.4 mm ² /s @ 100°C	ASTM D445, ISO 3104	D5, 500 ml	01000-445-11
	8 mm ² /s @40°C; 2.2 mm ² /s @ 100°C	ASTM D445, ISO 3104	D10, 500 ml	01000-445-12
	32 mm ² /s @40°C; 5.5 mm ² /s @ 100°C	ASTM D445, ISO 3104	N35, 500 ml	01000-445-13
	220 mm ² /s @40°C; 20 mm ² /s @ 100°C	ASTM D445, ISO 3104	D500, 500 ml	01000-445-15
	420 mm ² /s @40°C; 32 mm ² /s @ 100°C	ASTM D445, ISO 3104	D1000, 500 ml	01000-445-16
	2000 mm ² /s @40°C; 100 mm ² /s @ 100°C	ASTM D445, ISO 3104	D5000, 500 ml	01000-445-17
	3400 mm ² /s @40°C; 120 mm ² /s @ 100°C	ASTM D445, ISO 3104	N4000, 500 ml	01000-445-18
	320 mm ² /s @40°C; 26 mm ² /s @ 100°C	ASTM D445, ISO 3104	N350, 500 ml	01000-445-19
	1000 mm ² /s @40°C; 60 mm ² /s @ 100°C	ASTM D445, ISO 3104	N1000, 500 ml	01000-445-20
	5mm ² /s @ -20°C	ASTM D445, ISO 3104	Kerosene, 500 ml	01000-445-51
Cetane Number	Calibration Material	ASTM D7668	40% Hexadecane / 60% Heptamethylnonane, 300 mL	1330-110-000101
	Verification Material	ASTM D7668	Methylcyclohexane, cleaned, 1000 mL	1330-110-000103
	52 DCN	ASTM D7668	Diesel Fuel, 1000 ml	1330-110-000109
	58 DCN	ASTM D7668	Diesel Fuel, 1000 ml	1330-110-000111
Noack Evaporation Loss	RL208	ASTM D5800, CEC L-40	RL208, 1000 ml	W110702
	RL223	ASTM D5800, CEC L-40	RL223, 1000 ml	1310-100-030101

HEADQUARTERS: U.S.A.

PAC, LP | 8824 Fallbrook Drive | Houston, Texas 77064
 T: +1 800 444 TEST | O: +1 281 940 1803 | F: +1 281 580 0719
 sales.usa@pacpl.com | service.usa@pacpl.com

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