Petroleum Physical Properties CRMs

AccuStandard®

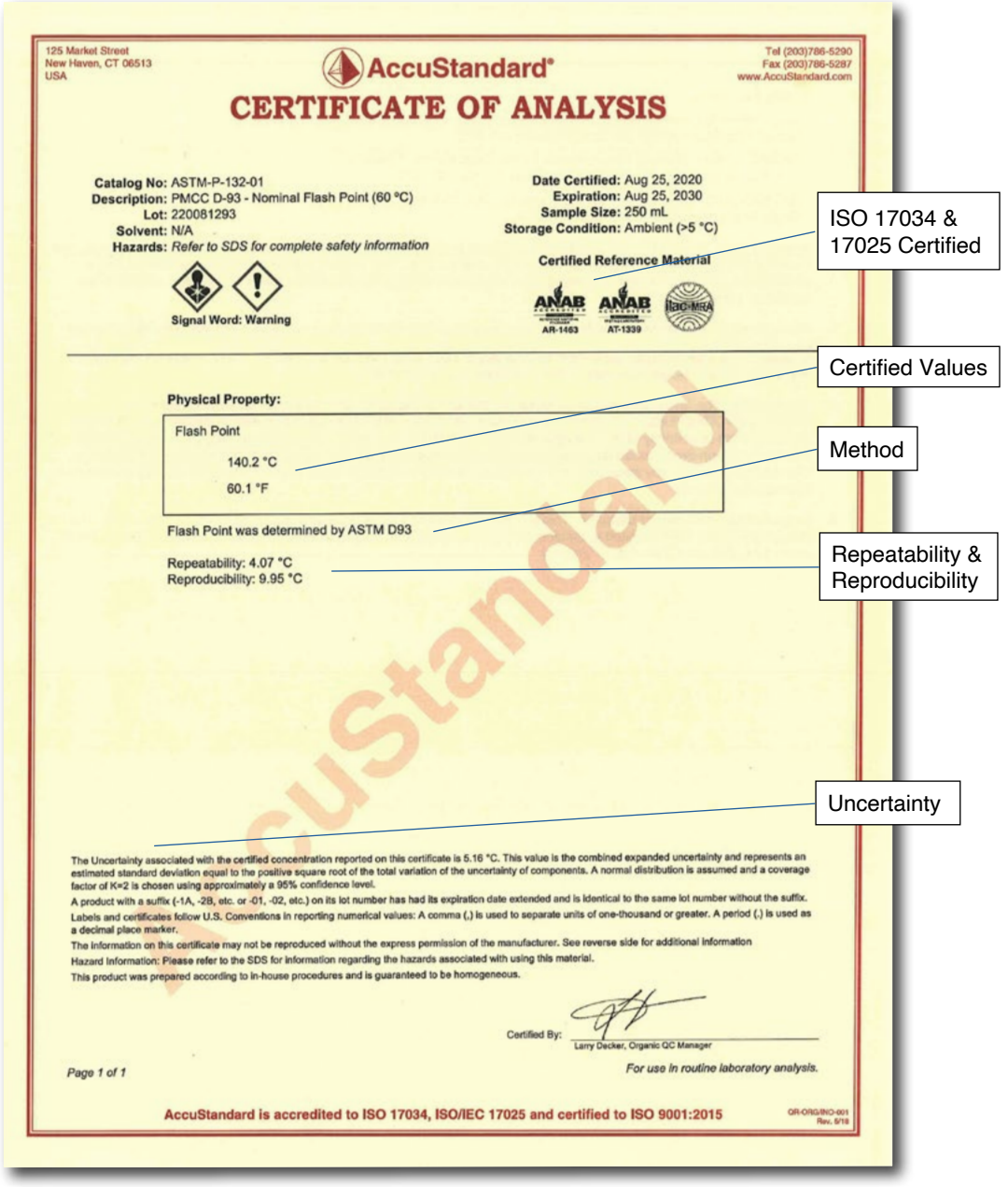
Certified Reference Standards

ASTM Physical Standards are now accredited to ISO 17034:2016 and ISO 17025:2017

AccuStandard is pleased to announce the expansion of our ISO 17034 scope to now include Physical Standard CRMs.

ISO 17034 accreditation goes above and beyond ISO/IEC 17025 and ISO 9001:2015 requirements, demonstrating that a Reference Material Producer is able to follow the strict guidelines for producing, certifying, labeling, and reporting uncertainty for their products. It includes requirements for verifying stability and homogeneity for the products that are included in this accreditation.

Our ISO 17034:2016 scope now includes ASTM methods for Flash Point, Distillation, Cloud Point, Freeze Point, Viscosity, and Water Content in petroleum products by Karl Fischer Titration.



125 Market Street
New Haven, CT 06513
USA

AccuStandard®

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CERTIFICATE OF ANALYSIS

Catalog No: ASTM-P-132-01
Description: PMCC D-93 - Nominal Flash Point (60 °C)
Lot: 220081293
Solvent: N/A
Hazards: *Refer to SDS for complete safety information*

Signal Word: Warning

Date Certified: Aug 25, 2020
Expiration: Aug 25, 2030
Sample Size: 250 mL
Storage Condition: Ambient (>5 °C)

Certified Reference Material

ANAB AR-1463 ANAB AT-1339 IRAC-MRA

Physical Property:

Flash Point
140.2 °C
60.1 °F

Flash Point was determined by ASTM D93

Repeatability: 4.07 °C
Reproducibility: 9.95 °C

The Uncertainty associated with the certified concentration reported on this certificate is 5.16 °C. This value is the combined expanded uncertainty and represents an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.

A product with a suffix (-1A, -2B, etc. or -01, -02, etc.) on its lot number has had its expiration date extended and is identical to the same lot number without the suffix.

Labels and certificates follow U.S. Conventions in reporting numerical values: A comma (,) is used to separate units of one-thousand or greater. A period (.) is used as a decimal place marker.

The information on this certificate may not be reproduced without the express permission of the manufacturer. See reverse side for additional information

Hazard Information: Please refer to the SDS for information regarding the hazards associated with using this material.

This product was prepared according to in-house procedures and is guaranteed to be homogeneous.

Certified By:
Larry Decker, Organic QC Manager

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For use in routine laboratory analysis.

AccuStandard is accredited to ISO 17034, ISO/IEC 17025 and certified to ISO 9001:2015

QR-ORG/INO-001 Rev. 5/19

ISO 17034 & 17025 Certified

Certified Values

Method

Repeatability & Reproducibility

Uncertainty

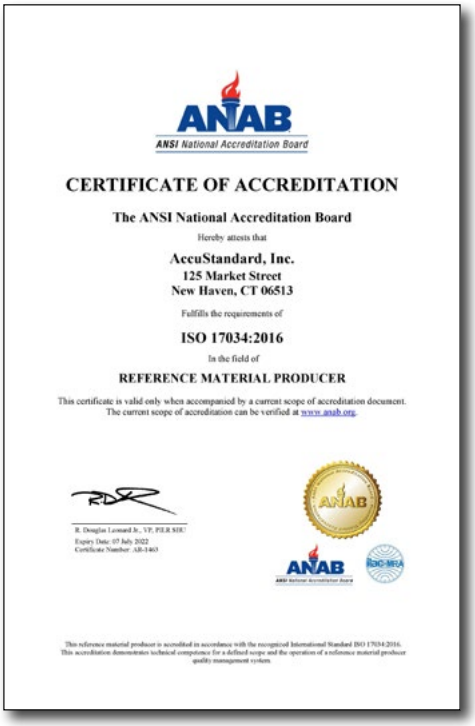
ISO 17034, 17025, and 9001:2015

AccuStandard is an active member of ASTM technical committees D02 (Petroleum) and D16 (Aromatic Hydrocarbons). We participate in the ASTM D02 PTP program for a periodic performance assessment. These assessments with other participating laboratories ensure we can confidently certify our values.

Physical Standards for ASTM Methods

Distillation – ASTM D86
Flash Point – ASTM D56, D92, & D93
Viscosity – ASTM D445
Freezing Point – ASTM D1015, D2386, & D5972
Aniline Point – ASTM D611 *
Water in Petroleum Products – Karl Fischer ASTM D1744, E1064, D4377, D4928, & D6304
Cloud Point – ASTM D2500, D5771, D5772, & D5773
Pour Point – ASTM D97 & D5950 **UPDATED**

* not on ISO 17034 scope



ANAB
ANSI National Accreditation Board

CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

AccuStandard, Inc.
125 Market Street
New Haven, CT 06513

Fulfills the requirements of

ISO 17034:2016

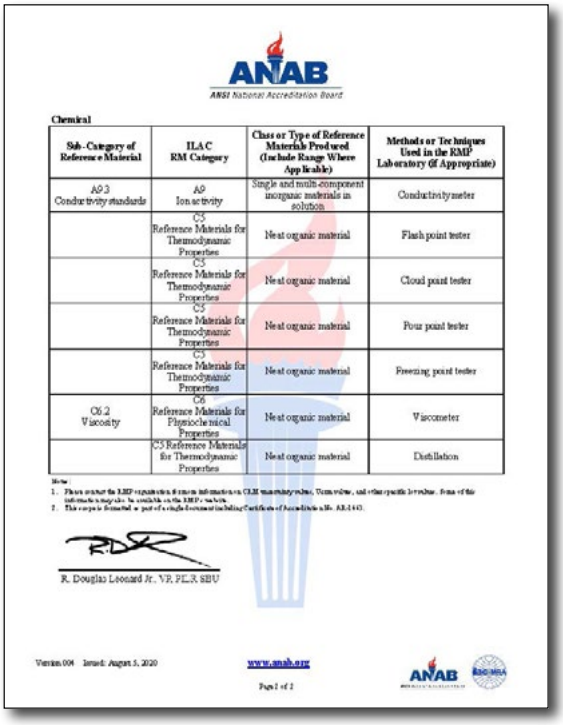
In the field of

REFERENCE MATERIAL PRODUCER

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

R. Douglas Leonard Jr., VP, PLR SBU
Expiry Date: 07 July 2022
Certificate Number: AR-1443

This reference material producer is accredited in accordance with the recognized International Standard ISO 17034:2016.
This accreditation demonstrates technical competence for a defined scope and the operation of a reference material producer quality management system.



ANAB
ANSI National Accreditation Board

Chemical

Sub-Category of Reference Material	ILAC RM Category	Class or Type of Reference Materials Produced (Include Range Where Applicable)	Methods or Techniques Used in the RMP Laboratory (If Appropriate)
A9.3 Conductivity standards	A9 Ion activity	Single and multi-component inorganic materials in solution	Conductivity meter
	C5 Reference Materials for Thermodynamic Properties	Neat organic material	Flash point tester
	C5 Reference Materials for Thermodynamic Properties	Neat organic material	Cloud point tester
	C5 Reference Materials for Thermodynamic Properties	Neat organic material	Pour point tester
	C5 Reference Materials for Thermodynamic Properties	Neat organic material	Freezing point tester
C6.2 Viscosity	C6 Reference Materials for Physicochemical Properties	Neat organic material	Viscometer
	C5 Reference Materials for Thermodynamic Properties	Neat organic material	Distillation

Notes:
1. Please contact the RMP organization if more information on CLH traceability rules, Terms of Use, and other specific questions. Some of this information may also be available on the RMP's website.
2. This scope is formatted as part of a single document including Certificate of Accreditation No. AR-1443.

R. Douglas Leonard Jr., VP, PLR SBU

Version 004 Issued: August 5, 2020
www.anab.org
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To learn more about our quality system and download our ISO 17034 scope visit our website: **www.accustandard.com/quality-accreditations**

Cross-Reference Methods

ANALYSIS	ASTM	IP	ISO	DIN	JIS
Tag Flash Point	D56			51411	K 2580
Distillation	D86	123	3405	51751	K 2254
PMCC Flash Point	D93	34	2719	51758	K 2265
Kinematic Viscosity	D445	71-1	3104	51562	K 2283
Aniline Point	D611	2	2977	51775	
Hydrocarbon Types by FID	D1319	156	3837	51791	K 2536
Water (Karl Fischer)	D1744		6296		
Freezing Point	D2386	16	3013	51421	K 2276
Cloud Point	D2500	219	3015	51597	K 2269
Water (Karl Fischer)	D4377	356	10336		
Water (Karl Fischer)	D4928	386	10337		

Physical ASTM Standards

ASTM D56, D92, D93 Flash Point Standards

These products are pure hydrocarbons with a method specific flash point determined by using the ASTM Method number referenced.

ASTM No.	Nominal Flash Point	Cat. No.	Unit
PMCC D93	60 °C	ASTM-P-132-01	250 mL
PMCC D93	93 °C	ASTM-P-132-02	250 mL
COC D92	200 °C	ASTM-P-132-03	250 mL
COC D92	230 °C	ASTM-P-132-04	250 mL
PMCC D93	65 °C	ASTM-P-133-01	250 mL
PMCC D93	134 °C	ASTM-P-133-02	250 mL
COC D92	138 °C	ASTM-P-133-03	250 mL
TCC D56	67 °C	ASTM-P-133-04	250 mL

ASTM D86 Distillation Standards

The automatic distillation apparatus duplicates the distillation conditions of the manual method. The increased reliance on the detectors requires an independent standard to verify that the apparatus is performing correctly. This synthetic blend of hydrocarbons boils in the temperature range specified in ASTM D86 distillation Groups 1 and 2. The fuel oil meets the Group 4 criteria.

The Group 1 and 2 standards cover the boiling range from 129-368°F (54-187°C). The Group 4 standard covers the range from 410-670°F (210-355°C).

Group	Description	Cat. No.	Unit
1, 2	Synthetic Distillation Standard	ASTM-P-126-01 ▲	500 mL
4	Distillation Standard	ASTM-P-127-01 ▲	250 mL
		ASTM-P-127-02 ▲	500 mL

▲ Hazardous fee required.

ASTM D445 Viscosity Calibration Standards

Viscosity @ 40°C	Cat. No.	Unit
4 Cst	ASTM-P-128-01	500 mL
7 Cst	ASTM-P-128-02	500 mL
19 Cst	ASTM-P-128-03	500 mL
61 Cst	ASTM-P-128-04	500 mL
180 Cst	ASTM-P-128-05	500 mL
520 Cst	ASTM-P-128-06	500 mL

ASTM D1015,D2386,D5972 Freezing Points for Aviation Fuel

Aviation fuel freezing point is the lowest temperature at which fuel remains free of solid hydrocarbon crystals.

Nominal Freezing Point	Cat. No.	Unit
- 50 °C	ASTM-P-129-01	250 mL
- 45 °C	ASTM-P-129-02	250 mL

Nominal fill for 250 mL and 500 mL sizes.

Physical ASTM Standards

ASTM D611 Aniline Point Standards

The accuracy of automated aniline point apparatus can be verified using a range of standards whose aniline points are determined using ASTM D611 (Method A) and ASTM D611 (Method E). Standards are packaged in 20 mL ampules in an inert atmosphere.

Method 611(A)

Nominal Aniline Point	Cat. No. D-611-SET *	Unit 5 x 20 mL
0 °C	D-611-01	20 mL
30 °C	D-611-02	20 mL
55 °C	D-611-03	20 mL
68 °C	D-611-04	20 mL
94 °C	D-611-05	20 mL

Method 611(E)

	D-611E-SET *	3 x 20 mL
43 °C	D-611E-01	20 mL
62 °C	D-611E-02	20 mL
77 °C	D-611E-03	20 mL
Pure Aniline	ASTM-P-134-PAK *	5 x 15 mL

Technical Note

For routine purposes pure aniline is packaged in ampules under dry nitrogen. This minimizes the risk of oxidation.

* not on ISO 17034 scope

ASTM D1744, E1064, D4377 Water in Liquid Petroleum Products by Karl Fischer D4928, D6304

Standards are available for coulometric Karl Fischer titrations and are packaged in 2 mL, 5 mL, and 20 mL ampules in sets of 5 and 10. The following concentrations are available:

Water Content	Cat. No.	Unit
60 µg/g	KF-0.6X-5ML-VAP	10 x 5 mL
100 µg/g	KF-1X-2ML-VAP	10 x 2 mL
	KF-1X-5ML-VAP	10 x 5 mL
	KF-1X-20ML-PAK	5 x 20 mL
1000 µg/g	KF-10X-2ML-VAP	10 x 2 mL
	KF-10X-5ML-VAP	10 x 5 mL
	KF-10X-20ML-PAK	5 x 20 mL
5000 µg/g	KF-50X-2ML-VAP	10 x 2 mL
	KF-50X-5ML-VAP	10 x 5 mL
	KF-50X-20ML-PAK	5 x 20 mL

Value Added Paks (Cat. No. ending in -VAP) provide multiple single units packaged together for consistency and cost savings.

ASTM D2500, D5771, D5772, D5773 Cloud Point Calibration

For routine testing and quality verification, Cloud Point CRMs are offered to cover a wide temperature range.

Cloud Point, (Approx. Value)	Cat. No.	Unit
+ 5 °C	ASTM-P-131-01 ▲	250 mL
- 2 °C	ASTM-P-131-02 ▲	250 mL
- 10 °C	ASTM-P-131-03 ▲	250 mL
- 15 °C	ASTM-P-131-04 ▲	250 mL
- 20 °C	ASTM-P-131-05 ▲	250 mL

ASTM D97, D5950 Pour Point Calibration

Pour Point is the lowest temperature at which a product will flow without stirring. We offer the folowing to cover a wide temperature range.

Pour Point, (Approx. Value)	Cat. No.	Unit
- 50 °C	ASTM-P-135-01 ▲	250 mL
- 25 °C	ASTM-P-135-02 ▲	250 mL

▲ Hazardous fee required.

Nominal fill for 250 mL and 500 mL sizes.

Physical Standard CRMs for ASTM Methods

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ISO 17034, 17025, and 9001:2015