



# CERTIFICATE OF ACCREDITATION

## ANSI-ASQ National Accreditation Board

500 Montgomery Street, Suite 625, Alexandria, VA 22314, 877-344-3044

This is to certify that

**HALTERMANN SOLUTIONS - MAIN LAB**  
**15600 West Hardy Rd**  
**Houston, TX 77060**

has been assessed by ANAB  
and meets the requirements of international standard

**ISO/IEC 17025:2005**

while demonstrating technical competence in the field of

**TESTING**

Refer to the accompanying Scope of Accreditation for information regarding the types of tests to which this accreditation applies.

AT-2501

Certificate Number



ANAB Approval

Certificate Valid: 07/23/2018-09/05/2020  
Version No. 003 Issued: 07/23/2018



This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).

**SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005**

**HALTERMANN SOLUTIONS – MAIN LAB**

15600 West Hardy Rd  
Houston TX 77060  
Ken Smith 281.455.2226

**TESTING**

Valid to: **September 5, 2020**

Certificate Number: **AT-2501**

**Mechanical**

<b>Specific Tests and/or Properties Measured</b>	<b>Specification, Standard, Method, or Test Technique</b>	<b>Items, Materials or Product Tested</b>	<b>Key Equipment or Technology</b>
Distillation Boiling Point Range	ASTM D86, K2254, ISO3405, IP123, DIN51751, M07-002	Fuels and Fuel Components	Automated Distillation Inst.
Pensky Martin Closed Cup Flash Point	ASTM D93, K2265, ISO2719, IP34, DIN51758, M07-019	Fuels and Fuel Components	Automated Flash Point Inst.
Manual Pour Point	ASTM D97, K2269, ISO3016, IP15, DIN51597, T60-105	Fuels and Fuel Components	
Density by Digital Density Meter	ASTM D4052, K2249-1, ISO 12185, IP365	Fuels and Fuel Components	Digital Density Meter
Automated Pour Point	ASTM D6749, K2269, ISO3016, IP15, DIN51597, T60-105	Fuels and Fuel Components	Automated Pour Point/Cloud Point Instrument
Cloud Point	ASTM D2500, ASTM D7683, K2269, ISO3015, IP219, DIN51597, T60-105	Fuels and Fuel Components	Automated Pour Point/Cloud Point Instrument
Cold Filter Plugging Point of Diesel Fuels	ASTM D6371, K2288, ISO116, IP309	Fuels and Fuel Components	Cold Filter Plugging Point Instrument
Copper Corrosion	ASTM D130, K2513, ISO2160, IP154, DIN51759, M07-015	Fuels and Fuel Components	
Kinematic Viscosity	ASTM D445, K2283, ISO3104, IP71-1, DIN51562, T60-100	Fuels and Fuel Components	

**Mechanical**

Specific Tests and/or Properties Measured	Specification, Standard, Method, or Test Technique	Items, Materials or Product Tested	Key Equipment or Technology
Water Reaction	ASTM D1094, ISO6250, IP289, DIN51415, M07-050	Fuels and Fuel Components	
Freezing Point of Aviation Fuels	ASTM D2386, K2276, ISO3013, IP16, DIN51421. M07-048	Fuels and Fuel Components	
Particulate Contamination	ASTM D5452	Fuels and Fuel Components	
Lubricity of Diesel Fuel by High-Frequency Reciprocating Rig	ASTM D6079	Fuels and Fuel Components	High-Frequency Reciprocating Rig
Vapor Pressure of Petroleum Products Mini Method	ASTM D5191, K2258, IP394, M07-079	Fuels and Fuel Components	Mini-Vapor Instrument
Calculated Cetane Index	ASTM D976	Fuels and Fuel Components	Calculation
Estimation of Net heat of Combustion	ASTM D3338	Fuels and Fuel Components	Calculation
Estimation of Hydrogen Content	ASTM D3343	Fuels and Fuel Components	Calculation
Cetane Index by Four Variable Calculation	ASTM D4737, ISO4264	Fuels and Fuel Components	Calculation
Driveability Index	ASTM D4814	Fuels and Fuel Components	Calculation
Heat of Combustion of Liquid Hydrocarbon Fuels	ASTM D240	Fuels and Fuel Components	Bomb Calorimeter
Heat of Combustion of Liquid Hydrocarbon Fuels (Precision Method)	ASTM D4809	Fuels and Fuel Components	Bomb Calorimeter
Distillation Range of Volatile Organic Liquids (Dry Point)	ASTM D1078	Fuels and Fuel Components	Automated Flash Point Inst
Hydroperoxide Number of Aviation Turbine Fuels, Gasoline, and Diesel Fuels	ASTM D3703	Fuels and Fuel Components	Titration
Free Water and Particulate Contamination in Distillate Fuels	ASTM D4176	Fuels and Fuel Components	Visual Inspection

**Chemical**

Specific Tests and/or Properties Measured	Specification, Standard, Method, or Test Technique	Items, Materials or Product Tested	Key Equipment or Technology
Volumetric Karl Fisher Water Content	ASTM E203	Fuels and Fuel Components	Automated Titrator

**Chemical**

<b>Specific Tests and/or Properties Measured</b>	<b>Specification, Standard, Method, or Test Technique</b>	<b>Items, Materials or Product Tested</b>	<b>Key Equipment or Technology</b>
Coulometric Karl Fisher Water Content	ASTM E1064, ASTM D6304	Fuels and Fuel Components	Automated Titrator
Hydrocarbon Types by Fluorescent Indicator Adsorption	ASTM D1319, K2536, ISO3837, IP156, DIN51791, M07-024	Fuels and Fuel Components	
Analysis of High Purity <i>n</i> -Heptane and <i>Isooctane</i> by GC	ASTM D2268	Fuels and Fuel Components	Gas Chromatograph
Trace Impurities in Aromatic Hydrocarbons	ASTM D2360	Fuels and Fuel Components	Gas Chromatograph
Benzene and Toluene in Gasoline	ASTM D3606	Fuels and Fuel Components	Gas Chromatograph
MTBE, ETBE, TAME, DIPE, tertiary-Amyl Alcohol and C <sub>1</sub> to C <sub>4</sub> Alcohols in Gasoline	ASTM D4815	Fuels and Fuel Components	Gas Chromatograph
Benzene, Toluene, Ethylbenzene, <i>p/m</i> -Xylene, <i>o</i> -Xylene, C <sub>9</sub> and Heavier Aromatics, and Total Aromatics in Gasoline	ASTM D5580	Fuels and Fuel Components	Gas Chromatograph
Benzene, Toluene, and Total Aromatics in Gasoline	ASTM D5769	Fuels and Fuel Components	Gas Chromatography/Mass Spectrometry
Mercaptan Sulfur in Fuels by Potentiometric Titration	ASTM D3227, K2276, ISO3012, IP342, M07-022	Fuels and Fuel Components	Automated Titrator
Sulfur in Petroleum Products by X-ray Fluorescence Spectrometry	ASTM D4294, K2541, ISO8754, IP336, M07-053	Fuels and Fuel Components	X-ray Fluorescence Spectrometer
Total Sulfur in Fuels by Ultraviolet Fluorescence	ASTM D5453,	Fuels and Fuel Components	Ultraviolet Fluorescence Instrument

Note:

1. This scope is formatted as part of a single document including Certificate of Accreditation No. AT-2501.



Vice President