PAC | solid partners proven solutions

Full Range of SIMDIS Solutions

Simulated Distillation Solutions for True Boiling Point determination up to C120

- Workflow oriented, User-friendly SIMDIS XLNC Software
- Turn-Key Solutions for all sample types
- Includes Calibration and System Performance Check Samples and all calculations
- Compliant with Global Standard Test Methods.

WWW.PACLP.COM

SIMDIS Solutions

COMPLETE RANGE OF SIMULATED DISTILLATION ANALYSIS SOLUTIONS UPTO C120

Boiling point data is a major specification in characterizing petroleum streams. PAC provides complete, turn-key gas chromatographic solutions for accurate determination of true boiling point data – from naphtha up to crude oil samples. By completely automating every step in the analysis, AC SIMDIS applications provide fast and accurate boiling point results.

PAC adds unique value to the industry by offering a 100% guaranteed solution, delivered fully factory calibrated, tested to certified reference materials, fine-tuned fully dedicated to methods specified by the user. PAC qualified service engineers commission the instrument and provide operator/user training.

IN FULL COMPLIANCE WITH WOLRDWIDE STANDARD TEST METHODS

PAC's dedicated involvement in regulatory organizations guarantees that the system and the software calculations are in accordance with with accepted methods (ASTM, IP, ISO, DIN & others) listed in gasoline, jet fuel and diesel specifications.

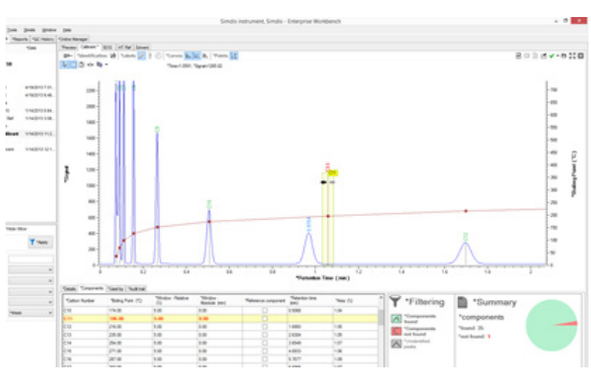
KEY ADVANTAGES

BETTER HARDWARE, SMARTER SOLUTIONS

- Temperature Programmable Inlet. Recognized "Best in Market" inlet for Simulated Distillation. Easy to maintain, with Septum Purge for clean repeatable baselines
- Light Solvent Optimized Automated Liquid Sampler(ALS): Improves injection precision by optimized cooling , optimizes airflows around sample trays in ALS (lowering temperature)
- AC CNS SIMDIS: Dedicated analyzer for simultaneous determination of boiling range distribution of Carbon, Nitrogen, and Sulfur in crudes as such or in final products
- AC 8634™ Analyzer: For accelerated D86 correlation data of jet fuel and diesel
- AC Crude Oil analyzer: For more accurate data. Combines D7169 High temp SIMDIS results with D7900 DHA FE results, avoiding D7169 CS2 related quenching
- SIMDIS XLNC Software:
  - Compatible with major Chromatography Data Systems (tested with Openlab, EZChrom, Chemstation, ChromPerfect, Chromeleon, Galaxie, Kompass, Atlas.
  - Supports Spanish, Chinese, Portuguese, Russian, Korean and French languages.

EASY OPERATION FOR ACCURATE ANALYSIS

- Fast, Work-flow, oriented intuitive interface (one-click access, drag-and-drop, smart filter)
- Configurable import, processing, reporting and LIMS transfer of results.
- Automated Blank subtraction, calibration and system validation
- Define Different Test Methods and Product Definitions
- Start and End elution algorithm, Solvent Detection&Exclusion
- Customizable QC and Calibration Definitions, graphical QC results (instant pass/fail view)
- Drag&Drop DHA Crude Merge function
- Audit Trail and tracking of linked data files.



METHODS OVERVIEW

Method Number	ASTM D3710*	ASTM D7096	ASTM D2887	ASTM D5307*	ASTM D5442	ASTM D7213	ASTM D7398	ASTM D6352	ASTM D7169	ASTM D7500
Maximum Carbon Number Reported	C_{15}	C_{16}	C_{44}	C_{44}	C_{44}	C_{60}	C_{60}	C_{90}	C_{100}	C_{110}
Sample Range	• Gasoline • Naphtha	• Gasoline • Naphtha	• Jet Fuel • Diesel	• Crude Oil	• Petroleum Derived Waxes	• Lube Oil Base Stocks	• FAMES (biodiesel, B100) Blends of Diesel/Biodiesel (B1 through B100)	• Lube Oil Base Stocks	• Residue • Crude Oil	• Distillates, • Base Oils • Lubricating • Base Stocks
Boiling Range Sample	FBP < 260°C (500°F)	FBP < 280°C (536°F)	FBP < 538°C (1000°F)	n.a.	FBP < 538°C (1000°F)	IBP > 100°C (212°F) FBP < 615°C (1138°F)	FBP <538°C (1000°F) FBP < 700°C (1292°F)	IBP > 174°C (345°F) FBP < 700°C (1292°F)	FBP > 720° C (1328°F)	IBP > 100°C (212°F) FBP < 735°C (1355°F)

*witdrawn

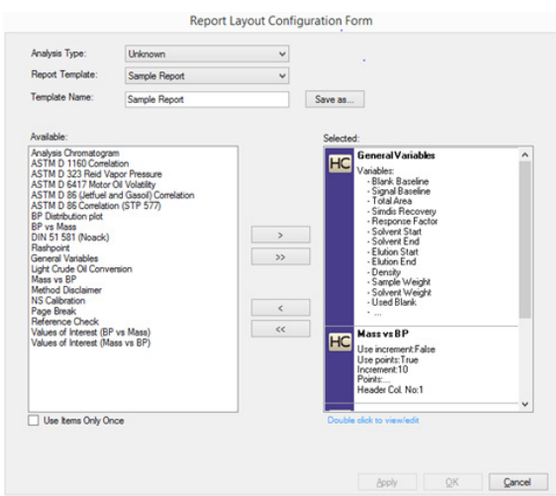
Overview of SIMDIS ASTM methods

Method Number	ISO 3924 IP 406	IP 480 EN 15199-1 DIN 51.435	IP 507 EN 15199-2	EN 15199-3 IP 545
Maximum Carbon Number Reported	C_{44}	C_{120}	C_{120}	C_{120}
Sample Range	• Jet Fuel • Diesel	• Lube Oil Base Stocks (totally eluting)	• Residue	• Crude Oil
Boiling Range Sample	FBP < 538°C (1000°F)	IBP > 100°C (212°F) FBP < 750°C (1382°F)	IBP > 100°C (212°C) FBP > 750°C (1382°F)	IBP > 174°C (345°F) FBP > 750°C (1382°F)

Overview of SIMDIS CEN, DIN, IP, ISO methods

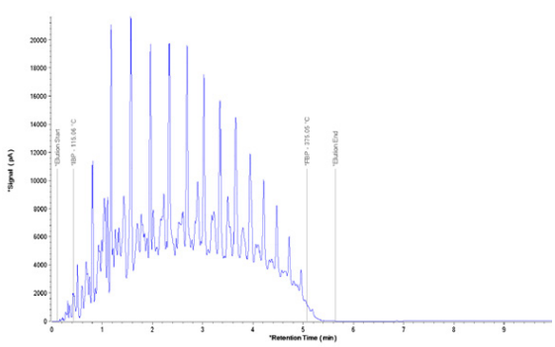
DEDICATED CORRELATIONS AND CALCULATIONS

- Correlation to D86 (Physical Distillation) for Jet Fuel and Diesel
- Correlation to D86 according STP-577
- Correlation to D1160
- NOACK according DIN 51581-2
- Motor Oil Volatility (MOV) according ASTM D6417
- Reid Vapor Pressure (RVP) according ASTM 323
- Light Crude Oil Volume conversion
- Customizable Cut points (temperature and %OFF)
- Flashpoint according ASTM D7215
- Volume Average Boiling Point (VABP)
- Bureau of Mines Correlation Index (BMCI)
- Average Molar Mass
- Specific reports for CNS (Sulfur and Nitrogen SIMDIS



EXTENSIVE SIMDIS REPORT OPTIONS, FULLY CONFIGURABLE PER PRODUCT/TEST

- Chromatogram and boiling point distribution plot
- BP vs %OFF, Recovery for non-eluting samples
- Retention Time or Boiling point x-axis, Temperature in °C/F
- Overlays of (corrected) Sample, Blank, Calibration chromatogram, BP plot, Cut points, Carbon number
- All Correlations and Specific Calculations
- QC Reference check-report
- DHA Crude Merge Report
- Specific CNS reporting
- Peak skew and column resolution parameters
- Output of report to several formats, such as CSV/Excel, PDF file, or copy-to-clipboard for reviewing the results outside the SIMDIS software



SPECIFICATIONS

ORDERING INFORMATION		
SINGLE CHANNEL SYSTEMS	CCG2123.894A/C	SIMDIS D2887 SYSTEM ON 120V/230V 7890 GC, INCLUDES AC FAST SIMDIS AND AC8634
	CCG2123.884A/C	SIMDIS D3710 SYSTEM ON 120V /230V 7890 GC
	CCG2123.886A/C	SIMDIS HT 750 SYSTEM ON 120V/230V 7890 GC
	CCG2123.890A/C	SIMDIS D 5442 WAX SYSTEM ON 120V/230V 7890 GC
	CCG2123.891A/C	SIMDIS D 7096 SYSTEM ON 120V/230V 7890 GC
	CCG2123.892A/C	SIMDIS D 7213 SYSTEM ON 120V/230V 7890 GC
	CCG2120AA/AC	AC 8612 SYSTEM ON 120V/230V 7890 GC
DUAL CHANNEL SYSTEMS	CCG2125.884A/C	DC SIMDIS D3710 SYSTEM ON 120V/230V 7890 GC
	CCG2125.886A/C	DC SIMDIS HT 750 SYSTEM ON 120V/230V 7890 GC
	CCG2125.890A/C	DC SIMDIS D 5442 WAX SYSTEM ON 120V/230V 7890 GC
	CCG2125.891A/C	DC SIMDIS D 7096 SYSTEM ON 120V/230V 7890 GC
**Additional SIMDIS Channels are available upon request (other channel must also be SIMDIS)*		
FIELD KITS**	CCG2128A.894	SIMDIS D2887 FIELD APPLICATION KIT (INCL. AC FAST SIMDIS AND AC8634)
	CCG2128A.884	SIMDIS D3710 FIELD APPLICATION KIT
	CCG2128A.886	SIMDIS HT 750 FIELD APPLICATION KIT
	CCG2128A.890	SIMDIS D5442 WAX FIELD APPLICATION KIT
	CCG2128A.891	SIMDIS D7096 FIELD APPLICATION KIT
	CCG2128A.892	SIMDIS D7213 FIELD APPLICATION KIT
***Allows for field applicating existing Agilent 7890 System. Requires existing Agilent 7890A or B.* *(For System requirements refer to Sales Note for details)*		

ANALYSIS PERFORMANCE	
Precision	According specific method or better
Sensitivity	According specific method or better
Accessories included	Operating manual; Calibration samples; Reference samples; Startup kit; Carrier gas filters; Oven exhaust deflector; Column

UTILITIES & REQUIREMENTS	
Carrier gas	Helium or nitrogen
Fid Fuel	Hydrogen (99.999%) Nitrogen (99.999%) Compressed air (99.999%)
Cooling	Liquid nitrogen, or CO_2 (depending on method) for fast cooling
System power	110-230V

Continuing research and development may result in specifications or appearance changes at any time

ABOUT PAC

PAC develops advanced instrumentation for lab and process applications based on strong **Analytical Expertise** that ensures **Optimal Performance** for our clients. Our analyzers help our clients meet complex industry challenges by providing a low cost of ownership, safe operation, high performance with fast, accurate, and actionable results, high uptime through reliable instrumentation, and compliance with standard methods.

Our solutions are from industry-leading brands: AC Analytical Controls, Advanced Sensors, Alcor, Antek, Herzog, ISL, Cambridge Viscosity, PSPI, and PetroSpec. We are committed to delivering superior and local customer service worldwide with 16 office locations and a network of over 50 distributors. PAC operates as a unit of Roper Technologies, Inc., a diversified technology company and a constituent of S&P 500, Fortune 1000, and Russell 1000 indices.

HEADQUARTERS

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