



Applied Instrument Technologies

Analect® Hydrocarbon SmartSystem™

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The Analect HSS is an on-line process FTIR system that utilizes licensed and patented Exxon technology. The system provides rapid, accurate and stable real-time monitoring of refinery process streams.

- ▶ Integrated system includes sample temperature conditioning, water removal, filtration, and automatic features including sample outlier collection, cell wash, and sample validation
- ▶ Rugged vibration-resistant optical bench provides superior stability
- ▶ Embedded PC with PC80 and CPSA software provides a comprehensive analysis including outlier identification and capture, alarming functions, and detailed system diagnostics
- ▶ Modbus® DCS communications with optional analog output

FLEXIBILITY

- Analyzes up to four process streams
- Wide spectral range to accommodate a variety of samples
- Optional heated sample system to analyze viscous samples
- Calibration transfer between lab analyzer and other process analyzers



ANALECTHSS Process FTIR Spectrometer

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HSS



GASOLINE

DIESEL

REFORMATE

CRUDE DISTILLATION

CAT FEED

FCC

LUBE OILS

ALKYLATE



Analect HSS with PC80 and CPSA Software Easy user interface and specific features enable all information needed by both the spectroscopist and instrument engineer to be viewed on the screen



WINDOWS® GRAPHICAL USER INTERFACE – The analyzer continuously maintains a screen displaying chemical and physical properties trend lines as well as statistical data

PC80 Process Software

- Provides continuous, unsupervised monitoring of any process to yield quantitative results
- Collects spectra and applies quantitative analysis routines
- Validates measurement by checking sample and spectrum parameters
- Formats & reports data with industry standard communication protocols
- Controls I/O to switch valves
- Provides built-in diagnostics for all the interacting modules
- Includes a BASIC dialect internal control script for custom modifications

CPSA Modeling Software (Constrained Principle-Component Spectral Analysis)

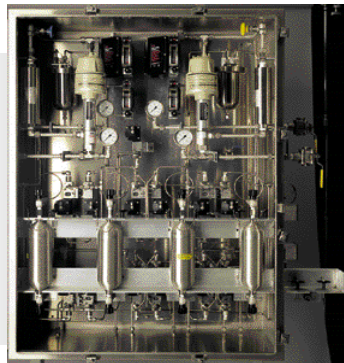
- Delivers long-term on-line accuracy so that calibrations remain stable, year-in and year-out
- Builds accurate models through the combined power of PCR and constraint technique
- The constraint technique eliminates the effects of variations in baseline, pathlength, and water vapor on predictions



COMMON REFINERY PROPERTIES ANALYZED BY ANALECT HSS

RON/MON	Cetane Index
Benzene, Vol%	Cetane Number
Aromatics, Vol%	Cetane Additives
Olefins, Vol%	Polycyclic Aromatics
Distillation points	Oxygen, Wt%
RVP	Gravity
Saturates	Density
Oxygenates	Flash, Cloud and Pour Points
MTBE	Viscosity

On-line analyzer performs all the measurements above faster and at less cost than multiple GC units.



Analect Smart Sample System

will automatically collect sample outliers as well as initiate automatic probe wash and validation routines

For world-wide sales and service contact Orbital Applied Instrument Technologies in Pomona, California.