

Solutions adapted to each
stage of your production process



ANALYSIS FOR OIL INDUSTRIES

Production

Storage

Refining

Petrochemistry

HTDS

Hi-Tech Detection Systems

THE TECHNOLOGY, KNOWLEDGE, SERVICE AND SUPPORT...

Throughout the process of drilling, refining and production of petroleum products, analytical instrumentation plays a major role in the analysis of the composition and control of the physicochemical properties of petroleum products. HTDS supports you with all stages of the implementation of your solution: consulting, installation, commissioning, training and maintenance.

ANALYSIS OF THE COMPOSITION

HTDS offers a range of solutions meeting the main standards (ASTM / ISO / GPA / DIN / UOP) for the analysis of the composition of petroleum products.

ANALYSIS OF VOLATILE AND SEMI VOLATILE ORGANIC COMPOUNDS BY GC / GC-MS

Natural Gas / Refinery Gas / LPG Analyzers

- More than 50 configurations for a solution adapted to your samples
- Solutions for the analysis of process gases, incondensable gases (H₂, He, O₂, N₂, CO₂), shale gas and biogas
- Calculations of the physical constants of the gases (calorific value, density, density...)



Analyzers of petroleum cuts and finished products

- Solutions adapted to your hydrocarbon analysis needs: olefins, aromatics, MTBE / oxygen compounds, naphthas, fuels, lubricants / paraffins, crude oil, asphalt, ...
- Simulated distillation (SIM DIS), detailed analysis of hydrocarbons (DHA) and characterization of engine oils
- Specific solutions with multidimensional chromatography



Sulfur compounds analyzers

- A full range of sulfur compounds analyzers in gases and liquids
- Different detectors available : FPD, PFPD, SCD and SM
- Total sulfur analyzers by UV fluorescence



GC-MS analyzers

- Determination of traces of fatty acid methyl ester in jet fuel according to IP585
- Characterization of complex oil cuts (crude oil, heavy fuel oil, diesel, gasoline ...)
- Oil pollution identification



WATER CONTENT, HYDROCARBONS AND OXYGEN

The quality of the gaseous hydrocarbons is also measured by the water, hydrocarbons or oxygen contents

Hygrometers and water dew point analyzers

- A full range of precision hygrometers for laboratory measurements, in industry or online with ATEX certification
- Different types of sensors (impedance ceramic, quartz, cooled mirror, TLDAS).
- Fast, repeatable and accurate measurements at low or high pressure



... FOR THE SUCCESS OF YOUR OIL LABORATORY

Hydrocarbon Dew Point (HC) Analyzers

- HC dew point analyzers in portable or in-line natural gas with ATEX certification
- Independent two-cell analyzers for simultaneous measurement of water dew point and hydrocarbon dew point
- Objectivity and high reproducibility of measurements



Oximeters

- A full line of ATEX certified portable or in-line oximeters that can measure oxygen from a few ppm up to 100%
- Oxygen measurement in hydrocarbons, helium, hydrogen and mixed streams containing CO₂
- Sensors with a long service life and a very short recovery time after exposure to air



ORGANIC AND INORGANIC ANALYZES

HTDS offers a wide range of organic and inorganic measurement techniques that cover all metals and molecules regardless of the concentration levels and types of matrices you may need to evaluate.

Atomic Absorption (AA)

- Suitable for routine measurements at ppm levels
- Complete range of simple flame manual system to automatic flame / oven system with quality control software



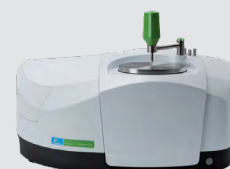
ICP Plasma Emission Spectrometry Analysis

- For laboratories that need to measure a large number of samples and elements
- Fast analysis and good detection limits
- Types of samples : oil, fuels, process or waste water



Conventional FTIR - Fourier Transformed Infrared Spectroscopy

- Ideal for the analysis of lubricating oils to determine the degree of degradation and contamination
- Suitable quickly determining oxidation, nitration, sulfonation, presence of coolants, soots and reduced effectiveness and used additives used in lubricating oils



FTIR OilExpress

- Designed specifically for Caterpillar S-O-S applications
- The fastest and the most cost-effective OCM (Oil Condition Monitoring) solution
- Wide choice of analysis protocol including JOAP (Joint Oil Analysis Protocol)



TECHNOLOGIES ADAPTED TO THE ANALYSIS OF COMPOSITIONS ...

SEARCH FOR CONSTITUENTS

The study of the quality of a crude oil and / or a fuel must pass through the search for its components. HTDS offers a complete range of solutions for a precise and fast search.

Salt In Crude Oil

- Portable instrument for measuring conductivity and temperature of crude oil according to ASTM D3230
- Waterproof and pre-calibrated instrument for fast and effective field control



WSI (Water Separation Instrument)

- Dedicated solutions specifically designed for aircraft fuel (such as Jet A), to determine separation capability following the ASTM D8073 standard
- Instrument for measuring a WSI index from 50 to 100 and conductivity from 0 to 2000 pS/m



Sulfur content - H2S

- Solution dedicated to crude oils (marine fuels ...) to determine the content of sulfur according to ASTM D 7621, IP 570, ISO 8217
- The measurement range is from 0 to 250 ppm
- Sample volume from 1 to 5 ml
- Analysis time: about 25min



Fame In Jet Analyzer (FIJI)

- Solution dedicated to aviation fuels and gas oils to determine the rate of EMAG according to IP 583, ASMT D7963, ASTM D7797, ASTM D1655
- Sample volume of 50 ml
- Measuring range from 10 to 150 mg/Kg
- Analysis time: about 15 min



Portable conductivity meter

- Aviation fuel solution for conductivity and temperature measurement according to ASTM D2624
- Measuring range from 0 to 2000 pS / m (0 to 35°C)



Focus on



MINISCAN IRXpert Infrared Spectrometer

- To analyze multi-fuels (diesel, gasoline, jet fuel and bio fuel).
- Following the ASTM D5845, ASTM D6277, ASTM D7777, ASTM D7806, EN 238, EN 14078, ISO 15212 and ASTM D86, ASTM D323, ASTM D445, ASTM D5191
- Allows measurements: RON, MON, number of CETANE, CETANE index, oxygenated, aromatic, density, benzene ...

ANALYSIS OF PHYSICO-CHEMICAL

HTDS offers a range of solutions that meet the main standards for ASTM / ISO physico-chemical properties analysis.

CONVENTIONAL EQUIPMENT OF LABORATORIES IN THE OIL INDUSTRY

Titration

- Determination of TAN / TBN concentration, fides, mercaptans, chlorides ...
- Methods : ASTM, D2784, D3246, D3961, D4468, D6212, D6667, D5194, D3634, D4929, D5808, E291, IP276, ISO 3771, UOP 588, 779, D8045 ...



Density measurement

- Allows refining of its own density
- From a simple table model to portable or multi-parameter solutions
- Possibility of simultaneous control of density, refractive index, pH and color
- Methods: ASTM, D2111, D891, IP365, 160, ISO3675, DIN51757, ...



PH measurement

- For measuring the acidity and alkalinity of a fluid
- Ideal for preventing corrosion of pipelines and vessels in transportation or storage
- Methods: ASTM, D1613, D1614, D2989, D847, E291, E301, BS 507, ISO 2887, ...



Measurement of water content according to Karl Fischer (KF)

- Flexible and powerful instruments Analysis of water content
- Analyzes according to coulometric and volumetric methods
- Methods: ASTM, D1364, D1744, D3401, D4377, D4928, D6304, D6869, E1064, E203-01, IP386, DIN51777, ...



THE TECHNOLOGY, KNOWLEDGE, SERVICE AND SUPPORT...

EQUIPMENT FOR VOLATILITY ANALYZES

HTDS offers a full range of solutions for volatility analysis.

Atmospheric distillation

Automatic distillation according to ASTM D86, ASTM D850, ASTM D1078 ...

- Groups: 0 to 4
- Display: 10.4" color touch screen
- Option: dry point detection kit
- Integrated printer
- Memory: up to 5000 results



Vacuum distillation and TBP

Automatic distillation entirely controlled by PC for distilling petroleum products such as: lubricants, atmospheric residues, palm oil according to ASTM D1160.

- Temp. Operating temperature: max 400°C
- Boiling range: max. 600°C
- Pressure range: from 0.1 to 760 mmHg



Also available :

- Semi automatic and automatic device for TBP distillation according to ASTM D 2892
- POTSTILL distillation apparatus according to ASTM D5236

Pensky flash point - Martens

Automatic flash point according to ASTM D93, ISO 2719.

- Ambient measurement range at 370°C
- Includes methods A, B and C
- Integrated fire extinguishing system
- 6" color LCD screen



Point éclair Abel

Automatic flash point according to IP 170, ISO 13736

- Measuring range from -30 to 80 °C
- Integrated Peltier element
- Integrated fire extinguishing system
- 6" color LCD screen



Cleveland flash point

Automatic flash point according to ASTM D92, ISO 2592

- Ambient measurement range at 400 °C
- Double ionization ring
- Integrated fire extinguishing system
- 6" color LCD screen

Focus on



MINI FLASH POINT «MINIFLASH TOUCH»

In accordance with ASTM D6450 and ASTM D7094 and interrelated with ASTM D93, ASTM D56, IP 170 ...

- Ideal for flash point measurements on small sample volumes (2-4ml)
- Reduced analysis time (<10min.)
- Suitable for analyzes of petroleum products, solvents, perfumes, paints ...

... FOR THE SUCCESS OF YOUR OIL LABORATORY

ABILITY TO WITHSTAND COLD

HTDS offers a complete range of solutions for cold flow analysis.

Freezing Point (point of the crystals extinction)

Automatic vanishing point of crystals in jet fuels according to ASTM D2386.

- Temp. jacket max. : -80°C
- Stirring: 75 rpm
- Onboard compressor
- Onboard PC with 8.4' color touch screen



Cloud point and flow

Automatic cloud point and flow device according to ASTM D97 and ASMT D2500 standards.

- Temp. jacket max. : -80°C
- Temp. Max sample : -69°C
- Onboard compressor
- Onboard PC with 8.4' color touch-screen



Filtrability limite temperature

Automatic TLF (Temperature Limit Filtration) device according to EN 116.

- Temp. jacket max. : -51°C
- Detection of the product by IR cells
- Onboard compressor
- Onboard PC with 8.4' color touch screen



CENTRIFUGE

HTDS offers a 4-position centrifuge suitable for oil applications following the norms ASTM D91, D96, D893, D1796, D2273, D2711, D4007, D5546, ISO3734, ISO9030...

- Rotational speed 3000 rpm max
- Noise level <60 dB
- Chamber temperature 80°C max
- Display in degrees Celsius
- Built-in temperature sensor
- Programmable preheating
- Automatic recognition of the rotor
- Touchscreen



Focus on



AUTOMATIC DEMULSIFICATION ADEM

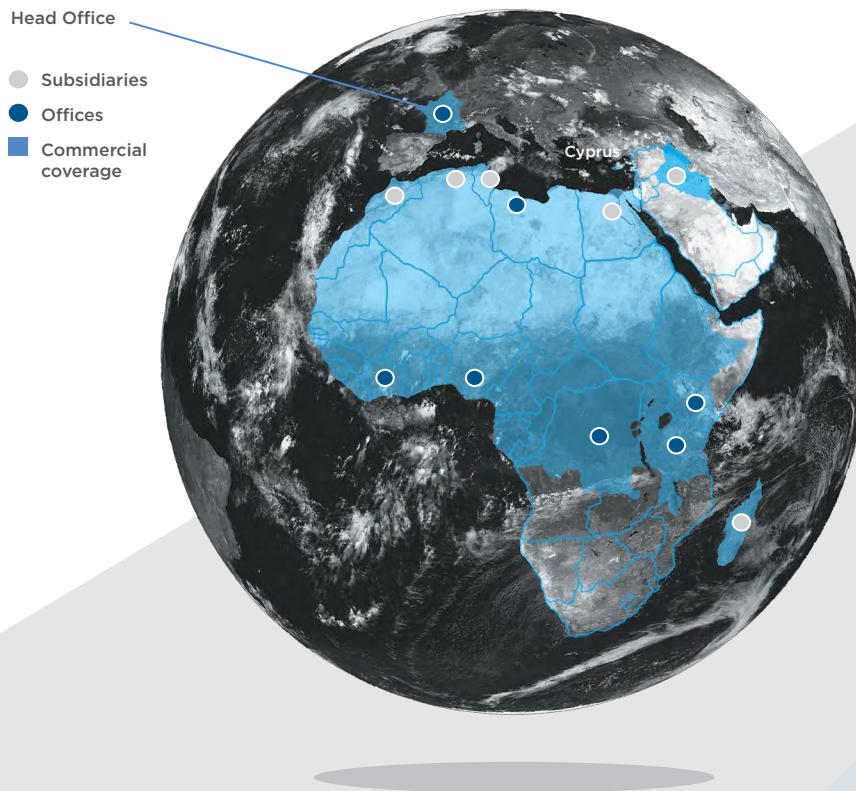
6-station automated dememulsion test for the determination of the separation of water from petrochemicals and synthetic fluids. In accordance with the ASTM D1401 and ISO 6614 standards

- Unique design with onboard camera
- Device controlled by PC and software
- Ambient temperature range at 90°C
- Stirring speed of 500 to 1600 rpm
- Bath volume 18 liters

OUR INTERNATIONAL NETWORK

HTDS (Hi-Tech Detection Systems) is a company specialized in the distribution and maintenance of high-tech detection systems in France and abroad.

HTDS offers a full range of detection solutions dedicated to the following areas:
Security - Product Control - Analytical Sciences -
Nuclear and Radiation Protection - Signal Processing - Optoelectronics
HTDS's exclusive partners for oil industries are recognized as world leaders in their field.



For a responsive service, tailored to your needs, HTDS has a network of subsidiaries, each with a team of specialized technicians and a complete stock of spare parts. A dedicated stock of equipment for your occasional rental needs is also available.

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