

erachek eco

ECO-EFFICIENT OIL-IN-WATER TESTING

Standard
ASTM D8193

Excellent correlation to:

Oil-in-water
ASTM D3921, D7066, D7678,
IP426, ISO 9377-2, DIN 38904-H18,
EPA 1664, EPA 9071

Oil-in-soil
EPA 9071, ISO 14039, ISO 16703



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eco-efficient CFC-free oil-in-water testing

ASTM D8193 Sub-ppm Precision

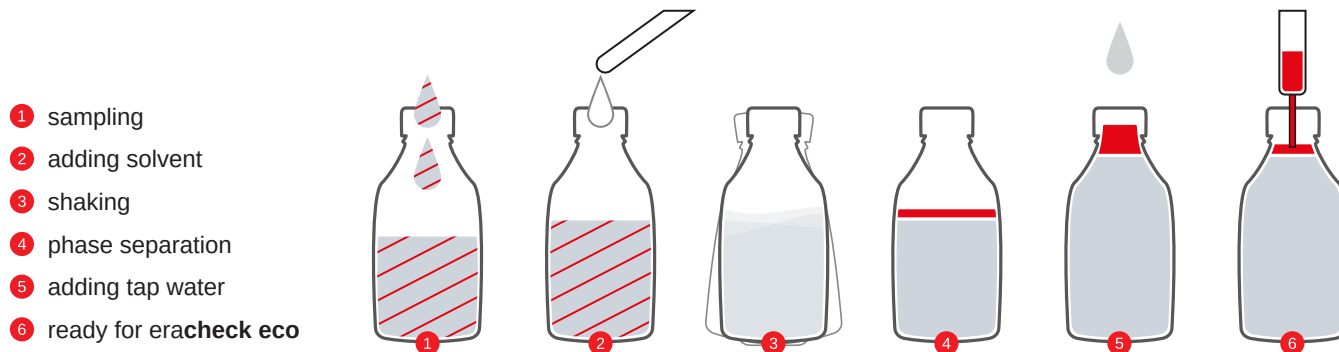
eracheck **eco** is the only IR analyzer on the market fully compliant with the latest oil-in-water standard ASTM D8193. Total Petroleum Hydrocarbons (TPH) and Total Oil and Grease (TOG) in water and soil are measured with sub-ppm precision (repeatability SD: 0.2 mg/L oil-in-water).

Unlike gravimetric methods, ASTM D8193 does not require evaporation of the solvent, eliminating the risk of light ends getting lost during the measurements and significantly improving and speeding up the measurement. Compared to GC methods that do not detect fractions eluting outside the defined time window, ASTM D8193 enables a more complete fraction of extracted hydrocarbons much faster and easier.

Cyclohexane CFC-free Extraction

ASTM D8193 describes liquid-liquid extraction with the eco-efficient solvent cyclohexane followed by a fully automated IR transmission measurement of the extracted products directly in the extraction solvent. Based on ASTM D8193, oil-in-water testing with eracheck **eco** finally eliminates the extraction with expensive and harmful CFC solvents used in traditional IR transmission methods without sacrificing their inherent advantages, like high speed and sub-ppm precision.

eracheck **eco** is a high-end dual beam non-dispersive IR spectrometer finally making an eco-efficient measurement of oil-in-water based on the cheap CFC-free solvent cyclohexane possible.



Maximum Connectivity

eracheck eco is a compact stand-alone analyzer equipped with an industry proven 8.4" multilingual color touchscreen and a built-in industrial PC.

State-of-the-art connectivity options like LAN, 5 x USB and RS232 allow you to attach the latest printers, keyboards and bar code scanners or to connect the instrument to any Laboratory Information Management System (LIMS).

User-specific Calibrations

With **eracheck eco**'s easy-to-operate design and its intuitive software, user-specific calibrations or correlations are easily created. This enables excellent correlations to gravimetric methods (EPA 1664A) and gas chromatography (e.g. ISO 9377-2 (mod) OSPAR). With the calibration defined in ASTM D8193, the correlation to other IR methods (ASTM D7066, ASTM D7678 etc.) is also readily assured.

A direct measurement of the extract results in the Total Oil and Grease (TOG) concentration.

A filtration over **eralytics'** disposable Florisil® solid phase extraction cartridges, that are directly attached to the inlet of the instrument, remove the polar components resulting in the Total Petroleum Hydrocarbon (TPH) concentration.

Economy meets Ecology

Combining the use of the cheap and CFC-free solvent cyclohexane with a cost-efficient filter-based optical design, **eracheck eco** is the most economical as well as eco-friendly oil-in-water tester available on the market.

Furthermore, the fully automated measurement enables the use of **eralytics'** directly attached 10-position autosampler for higher sample throughput and even more efficiency.



Applications

eracheck eco's rugged and portable design makes it the ideal device for on-site measurements even in harsh environments like on oil drilling platforms.

Typical TOG and TPH applications:

- Industrial process and waste water
- Reinjection and discharge water
- Upstream oil recovery monitoring
- Environmental monitoring of soil and water
- Layer monitoring during oil-drilling

Standard Model

ECO01 **eracheck eco**

Oil-in-water: MDL 0.5 mg/L (900:50 mL H₂O:Solvent)

Oil-in-soil: MDL 18 mg/kg (20 g:40 mL Soil:Solvent)

Autosampler

Directly attached optional
10-position autosampler



Technical Specifications of eracheck eco

Available Test Method	ASTM D8193
Correlation to	EPA 1664, ASTM D7066, D7678, OSPAR, ISO 9377-2
Extraction Method	External liquid-liquid or solid-liquid extraction
Extraction Solvent	Cyclohexane
Applications	TOG (Total Oil and Grease) and TPH (Total Petroleum Hydrocarbon)
Sample Clean-up (TPH)	Simplified removal of polar substances with eralytics' disposable Florisil® cartridges
Sample Volume	Typically 900 mL water and 50 mL cyclohexane (min. 10 mL solvent required per measurement)
Measurement Time	2 min + 2 min background measurement
Repeatability (SD)	Enrichment factor 18 (900:50 mL H ₂ O:Solvent) 0 – 49.9 mg/L: 0.2 mg/L 50 – 299.9 mg/L: 0.5 mg/L 300 – 1 000 mg/L: 1.2 mg/L
Method detection limit (MDL)	0.5 mg/L oil-in-water (900:50 mL H ₂ O:Solvent) 18 mg/kg oil-in-soil (20 g:40 mL Soil:Solvent)
Measurement Range	ASTM D8193: 0 – 1 000 mg/L oil-in-water (900:50 mL H ₂ O:Solvent) Up to 18 000 mg/L oil-in-water (50:50 mL H ₂ O:Solvent) Up to 36 000 mg/kg oil-in-soil (20 g:40 mL Soil:Solvent)
Interfaces	Built-in PC with Ethernet, front and rear USB and RS232 interfaces; Wifi via USB dongle Direct LIMS connectivity via LAN, output to printer or PC and export as CSV or PDF Optional input by keyboard, mouse and barcode reader
Display	Industry proven 8.4" multilingual color touchscreen
Remote Control	Remote service capability via Ethernet interface
PC Software	erasoft RCS – remote control Windows® software for multi-instrument remote control, convenient data transfer and result analysis
Result Database	Over 100 000 detailed test reports stored in internal memory
Alarm Tracking	All alarm messages are stored in the database together with the result
Power Requirements	Auto-switching 85–264 V AC, 47–63 Hz, max. 150 W (multi-voltage power supply) Field application: 12 V DC (vehicle battery) adapter available
Dimensions (W x D x H) / Weight	29.1 x 32.9 x 34.8 (11.5 x 12.9 x 13.7) / 9.3 kg (20.5 lb)

Due to continuing product development, specifications are subject to change.

All **eralytics** products are manufactured under ISO 9001 regulations and are CE, ROHS and UL/CSA compliant. www.eralytics.com/eracheck-eco



eralytics instruments are available worldwide.
An international network of over 50 authorized and well-trained distributors
is ready to answer your inquiries and to offer local support and service.
www.eralytics.com/distribution

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