eralytics performance you can rely on

eracheck eco

ECO-EFFICIENT OIL-IN-WATER TESTING

Standard
Based on ASTM D7678

Excellent correlation to:

Oil-in-water
ASTM D3921, D7066, EPA 1664,
IP 426, ISO 9377-2, DIN 38904-H18

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

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eracheck eco
cost-cutting CFC-free oil-in-water testing

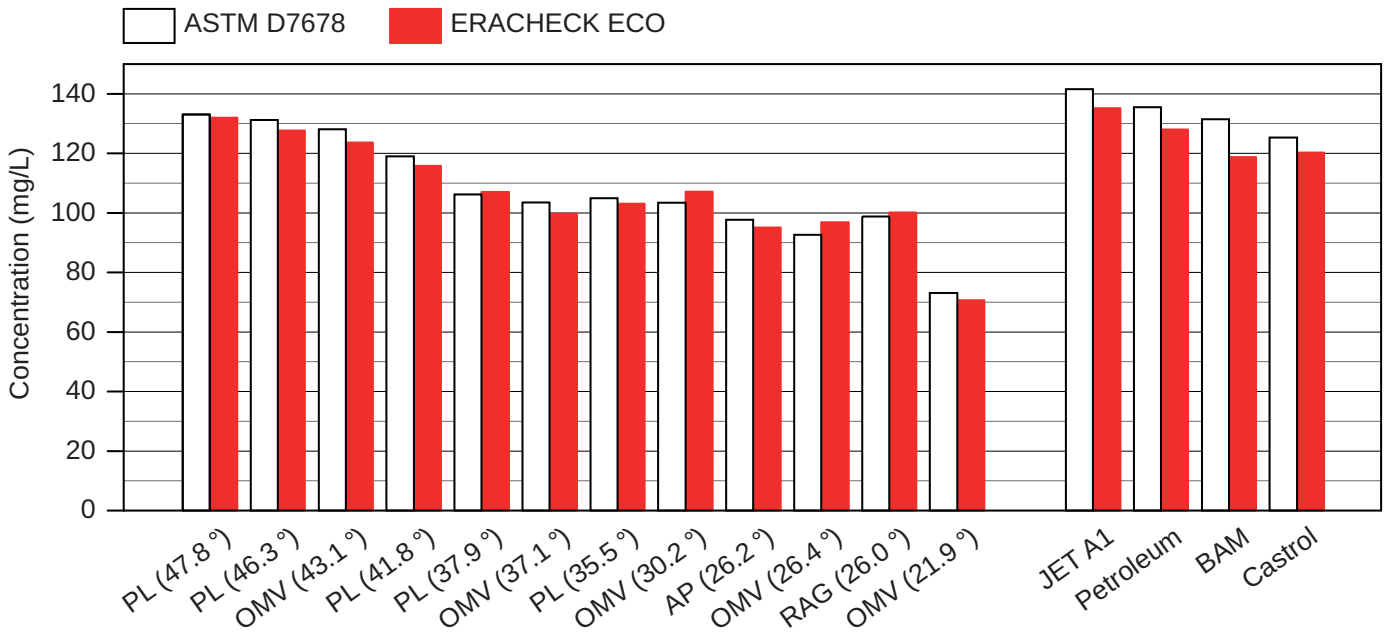
Eco-Efficient Technology

ERACHECK ECO uses a unique high-tech dual-detector optical design and the latest optical filters to measure oil-in-water directly in the eco-friendly extraction solvent cyclohexane. The complete measurement process is based on ASTM D7678 and even uses the same wavelength region, which was impossible to achieve with filter-based instruments until now. In contrast to measurements using FTIR spectrometers in that spectral region any complex and error-prone PLS calibration is unnecessary.

Comparison to Other Methods

Although oil-in-water concentration is a parameter depending on the method, extensive field tests showed excellent correlation of **ERACHECK ECO**'s results to IR (ASTM D7066), GC (ISO 9377-2) or gravimetrical (EPA 1664) methods. **ERACHECK ECO** can literally replace any oil-in-water method out there with a fast and CFC-free measurement method.

The chart shows how **ERACHECK ECO**'s compatibility mode gives results perfectly correlating with ASTM D7678 for various crude oils with different API gravity, typical fuels and lubricants.



CFC-Free Extraction

Conventional solvents used for spectroscopic oil-in-water analysis are harming earth's ozone layer. Most of them have been forbidden by the Montreal Protocol, some still in use will be phased out in 2020. Others were reported as harmful to the UN Ozone Secretariat. Their future remains uncertain. Alternative methods, like GC or gravimetry use non-harmful solvents, but require intensive maintenance or have limited repeatability.

Since 2011 ASTM D7678 combines all advantages from well-established IR methods with the environmental sustainability of GC or gravimetry. The used solvent in ASTM D7678, cyclohexane, is readily available throughout the market and significantly cheaper than any replacement solvent for IR measurements. **ERACHECK ECO** offers all the advantages of ASTM D7678 at significantly lower initial costs.

Ecology Meets Economy

ERACHECK ECO combines all the benefits of the known IR measurement technique such as high precision, fast and easy measurement with the ecologically safe CFC-free solvent cyclohexane. The measurement procedure requires no evaporation steps and is fully automated. Consequently no contaminants are lost that normally would evaporate together with the solvent. Using the filter-based measurement method in combination with cyclohexane gives you the most economical oil-in-water measurement system available on today's market. And still **ERACHECK ECO** offers a limit of detection of 0.5 mg/L and a total measurement range up to 1 000 mg/L.

No Moving Parts

ERACHECK ECO's durable design makes it the ideal device for on-site measurement even in harsh environments like on oil drilling platforms. Typical applications for the **ERACHECK ECO** are total petroleum hydrocarbon (TPH) or total oil and grease (TOG) measurements.

Applications

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

Standard Model

ECO01 ERACHECK ECO

Oil-in-water: 0.5 mg/L – 1 000 mg/L

Oil-in-soil: 18 mg/kg – 36 000 mg/kg

Measurement Cartridges

For easy TPH filtration according to ASTM D7678

Autosampler

Directly attached optional 10-position autosampler

Technical Specifications of eracheck eco

Available Test Method	Based on ASTM D7678
Correlation to	Infrared spectroscopy: ASTM D3921, D7066; DIN 38409-H18; OSPAR IR method; IP 426 Gas chromatography: ISO 9377-2, ISO 9377-2 (mod) OSPAR, ISO 16703; MADEP-EPH; EN 14039 Gravimetry: EPA 1664, EPA 9071; ASTM 4281; ISO 9377-1
Applications	TPH (Total Petroleum Hydrocarbon) and TOG (Total Oil and Grease) measurements in water and soil
Extraction Method	External liquid-liquid or solid-liquid extraction
Extraction Solvent	Cyclohexane
Sample Volume	Typically 900 mL water and 50 mL cyclohexane (min. 10 mL solvent required per measurement)
Sample Clean-up (TPH)	Simplified removal of polar substances over attachable Florisil® cartridges
Measurement Time	5 min (including background measurement)
Measurement Range	Up to 1 000 mg/L oil-in-water Up to 36 000 mg/kg oil-in-soil
Limit of Detection	0.5 mg/L oil-in-water (900:50 mL H_2O:Solvent) 18 mg/kg oil-in-soil (20 g:40 mL Soil:Solvent)
Repeatability	Enrichment factor 18 (900:50 mL H_2O:Solvent) 0 – 70 mg/L ± 0.35 mg/L 70 – 400 mg/L ± 1.0 mg/L 400 – 1 000 mg/L ± 2.1 mg/L
Interfaces	Built-in PC with Ethernet, front and rear USB and RS232 interfaces Direct LIMS connectivity via LAN, output to printer or PC and export as CSV or PDF Optional input by external keyboard, mouse and barcode reader
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 / Weight	29 x 35 x 34 cm (11.4 x 13.8 x 13.4 in) / 9.7 kg (21.4 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.

CANNON INSTRUMENT COMPANY