

erachek pro

HIGH-END OIL-IN-WATER TESTING

Standard
ASTM D7678

Excellent correlation to:

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

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



eracheck pro – CFC-free oil-in-water testing with unrivalled precision

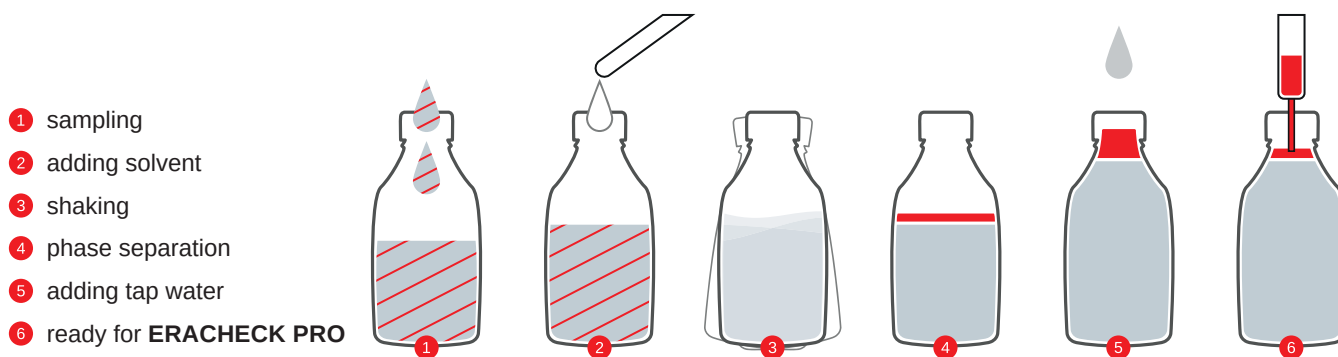
CFC-Free Extraction

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 soon be phased out. Others were reported as harmful to the UN Ozone Secretariat. Their future remains undecided. Alternative methods, like GC or gravimetry use non-harmful solvents, but require intensive maintenance or lack sufficient 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.

Easy Sample Handling

With **ERACHECK PRO** sampling and extraction are done in the same bottle. This keeps the process quick and easy and at the same time practically eliminates cross contamination and sample carry over. First, as with any other established method, the oil-in-water or oil-in-soil sample must be extracted to obtain homogeneity. Then, to speed up phase separation, the bottle is filled with tap water, which lifts the solvent phase to the neck of the bottle. As quickly as that, the sample is easily accessible for measurement with **ERACHECK PRO**.

eralytics provides cartridges designed for the task, which are plugged into the sample inlet of **ERACHECK PRO** and automate the filtration step over Florisil® according to ASTM D7678.



Unique Measuring Principle

ERACHECK PRO's patented measurement principle is built around a high-tech quantum cascade laser spectrometer, which outperforms other infrared techniques by several orders of magnitude in terms of optical power. This cutting-edge technology works without a single moving part, making it highly robust. **ERACHECK PRO** is the only analyzer capable of measuring oil-in-water down to 0.1 mg/L using the CFC-free solvent cyclohexane in full compliance with ASTM D7678.

Unrivalled Precision

With a linear operating range of 0.1 – 2 000 mg/L oil-in-water content **ERACHECK PRO** even outperforms the range required by ASTM D7678. The repeatability at the low end of the calibration lies well below 0.1 mg/L and does not exceed 0.1 % or 2 mg/L at the upper end of the calibration.

As oil-in-water concentration is a parameter depending on the method, **ERACHECK PRO**'s results will naturally deviate from other methods like gravimetry. However, extensive field tests showed excellent correlation of **ERACHECK PRO**'s results to IR, GC or gravimetric methods. **ERACHECK PRO** can literally replace any oil-in-water method out there with a fast and CFC-free measurement method.

Applications

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

- 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

EC01 ERACHECK PRO

Oil-in-water: 0.1 mg/L – 2 000 mg/L

Oil-in-soil: 7 mg/kg – 72 000 mg/kg

Measurement Cartridges

For easy TPH filtration according to ASTM D7678

Autosampler

Directly attached optional
10-position autosampler



Technical Specifications of eracheck pro

Available Test Method	ASTM D7678
Correlation to	Infrared spectroscopy: ASTM D3921, D7066; DIN 38409-H18; OSPAR IR method; IP426 Gas chromatography: ISO 9377-2, ISO 9377-2 (mod) OSPAR, ISO 16703; MADEP-EPH; EN 14039 Gravimetry: EPA 1664, EPA 9071; ASTM D4281; ISO 9377-1
Extraction Method	External liquid-liquid or solid-liquid extraction
Extraction Solvents	Cyclohexane (recommended) / Cyclopentane
Applications	TOG (Total Oil and Grease) and TPH (Total Petroleum Hydrocarbon)
Sample Clean-up (TPH)	Simplified removal of polar substances over attachable Na ₂ SO ₄ / Florisil® cartridges
Sample Volume	Typically 900 mL water and 50 mL cyclohexane according to ASTM D7678
Measurement Time	1 min + 1 min background measurement
Method detection limit (MDL)	0.1 mg/L oil-in-water (900:50 mL H ₂ O:Solvent) 7 mg/kg oil-in-soil (20 g:40 mL Soil:Solvent)
Repeatability (SD)	Enrichment factor 18 (900:50 mL H ₂ O:Solvent) 0 – 9.9 mg/L: 0.05 mg/L 10 – 99.9 mg/L: 0.15 mg/L 100 – 199.9 mg/L: 0.25 mg/L 200 – 2 000 mg/L: 1 mg/L
Measurement Range	ASTM D7678: 0 – 2 000 mg/L oil-in-water (900:50 mL H ₂ O:Solvent) Up to 36 000 mg/L oil-in-water (50:50 mL H ₂ O:Solvent) Up to 72 000 mg/kg oil-in-soil (20 g:40 mL Soil:Solvent)
Interfaces	Built-in PC with Ethernet, USB and RS232 interfaces; Wifi via USB dongle Direct LIMS connectivity via LAN and output to printer or PC 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 / 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. www.eralytics.com/eracheck-pro



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.
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