

Oil In Water Analysis Kit

User Manual



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OIL IN WATER ANALYSIS KIT

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1. Introduction

Thank you for purchasing a Specac Product.

Environmental issues are becoming more important with the increasing dependence of modern technology on petroleum hydrocarbons and related products. Water pollution by oil spillage or seepage can cause ecological disasters to the environments of plants, wildlife and human beings.

The Oil In Water Analysis Kit enables the analysis of total recoverable oil and grease or petroleum hydrocarbons in water using a new method of analysis D7066-04 approved by the ASTM (American Society for Testing and Materials). The existing standard EPA methods 413.2 and 418.1 have been replaced as they called for use of Freon as the extraction solvent for the recovery of oil and grease within a water sample. Freon is now banned from usage as it is an Ozone depleting chemical and harmful to the environment. The D7066-04 method is very similar to the EPA methods but the Freon solvent is replaced by use of the dimer/trimer of chlorotrifluoroethylene (C₂ClF₃). This solvent is known as S-316 and as an IR spectroscopy grade solvent is manufactured by Horiba Instruments in Irvine, California. (The ASTM does not advocate the use of one vendor over another for procurement of the solvent).

The ASTM D7066-04 method can be purchased from the American National Standards Institute (ANSI). Go to their website page webstore.ansi.org and search for the method D7066-04. The method describes the procedure for testing and lists the relevant equipment and chemicals needed. (Specac does not provide this equipment or chemicals.)

The quartz cuvette cells in the Oil and Water Kit are in matched pairs, which allow for precise repeat measurements of each sample and therefore continual use of calibration data, even if one cell should be broken. They also enable the use of the kit in dual beam dispersive spectrometers when an additional holder is purchased.

2. Unpacking and Checklist

On receipt of your Oil In Water Analysis Kit please check that the following items have been supplied:

- 1 Matched pair of infrared grade fused silica rectangular cuvette cells at 10mm pathlength with stoppers.
- 1 Matched pair of infrared grade fused silica cylindrical cuvette cells at 50mm pathlength with stoppers.
- 1 Matched pair of infrared grade fused silica cylindrical cuvette cells at 100mm pathlength with stoppers.
- 1 Cell holder with 3" x 2" slide back plate.
- 1 Instruction manual.

When being used, carefully remove the cells from their packing.

3. Locating The Cell On The Cell Holder

- A) Remove the protective wrapper from the cell holder and the cells.
- B) The cell holder is supplied with two different length thumb screws. After sliding the holder into position onto a spectrometers sample mounting baseplate via the 3" x 2" back plate, select the appropriate screw to secure the holder to the baseplate mount. Choice of screw will depend on the spectrometer.
- C) The 10mm rectangular cell locates in the cavity of the holder in front of the 3" x 2" backplate. The cell is held in place using the retaining clip fixed to the vertical post on the left hand side of the holder. Use the clip to secure the rectangular cell after filling with sample.
- D) The 50mm and 100mm cylindrical cells lie in the 'V' shaped groove of the cell holder. To secure these cells move the retaining clip from the vertical post and fix it to the horizontal post attached to the right hand side of the holder. Use the clip to secure the cylindrical cell after filling with sample.

For use of the appropriate liquid cell depending upon the level of oil and grease to be determined, please follow the analytical procedures as outlined in the method D7066-4 obtainable from the ASTM via the ANSI webstore website.

4. Spare Parts

08900 Oil In Water Analysis Kit comprising 3" x 2" cell holder and matched pairs of rectangular 10mm and cylindrical 50mm and 100mm pathlength IR quartz cells.

08901 Matched pair of 10mm pathlength rectangular IR quartz cells.

08902 Matched pair of 50mm pathlength cylindrical IR quartz cells.

08903 Matched pair of 100mm pathlength cylindrical IR quartz cells.

08904 Oil In Water Analysis Kit 3" x 2" cell holder.

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