SURFACE WIPE TEST PROCEDURES FOR OIL ON METAL

Using Sitelab UVF-Trilogy Hydrocarbon Analyzer with Hexane Solvent Extraction

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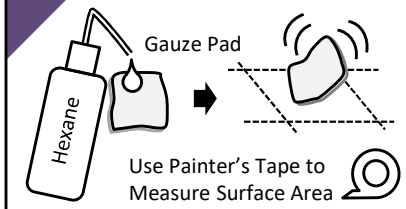
WIPESAMPLES-EDRO-SOPV1

Wipe Sample Collection, Extraction and Analysis Instructions

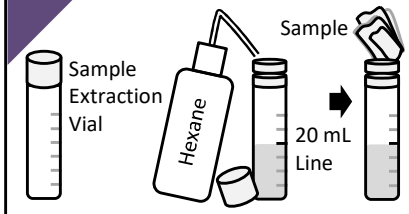
Samples prepared using Wipe Sample Test Kit, part no. EXTR14-WIPE. Solvent bottle, spatula, pipette, cuvette and tissue wipes are included with UVF-Trilogy.

1 Wipe Surface Area Clean



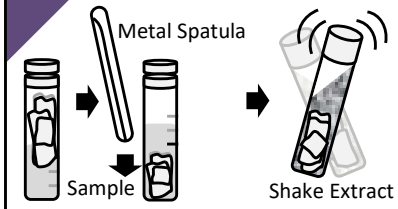
Add hexane to the solvent dispenser squirt bottle. Dampen a gauze pad with solvent and wipe the surface area clean to collect the sample. Surface areas can vary. Testing a small 100x100 mm square surface is typically used. Use a ruler and tape to measure the area to be wiped.

2 Extract Using 20 mL Solvent



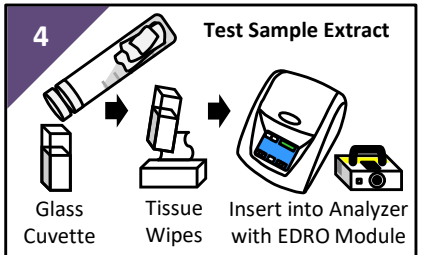
Add 20 mL of hexane to a sample extraction vial. The vials have 5 mL graduations, be precise. Always use 20 mL of solvent to extract samples. Using less is not recommended since the pad soaks up much of the solvent and may not provide enough extract to fill the cuvette for analysis.

3 Add Sample to Vial



Fold the gauze pad and stuff into the vial to extract the oil in the sample. Use a clean metal spatula to push the pad down to the bottom of the vial. The pad should be fully submerged in the solvent. Tighten cap and shake vial periodically for 5 to 10 minutes. Use longer extraction time as needed.

4 Test Sample Extract



Fill glass cuvette about ½ full with the extract. Clean cuvette using a tissue to remove any fingerprints or liquids, place into the analyzer and press the MEASURE FLUORESCENCE button. Measure the sample again to check repeatability. Record the concentration. Readings are in PPM.

Sitelab EXTR14-WIPE

Includes Supplies for 14 Samples

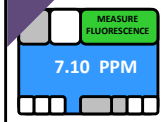
- 14 sample extraction vials
- 14 gauze pads, 2"x2" sterile
- 4 spare nitrile gloves, size XL
- 2 plastic test tubes and pipette tips for dilutions, if needed
- Sticker labels, test result record sheet & copy of this SOP.

Test oil on metal, concrete or all other surfaces. Use methanol if hexane is not available. Always use with HPLC grade solvents.

Record & Calculate Results

Convert PPM readings to surface area

5 Oil Content in Wipe Sample



Example Reading ppm	Surface Area mm	Final Result mg/m²
7.1	100x100	14.2

Formula to Convert Readings to mg/m²

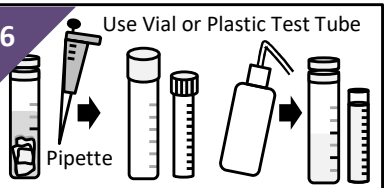
Volume of Solvent.....	20 mL
x 0.001.....	0.02 L/mL
x Concentration.....	7.1 ppm
÷ Surface Area Wiped.....	10,000 mm²
x 1,000,000 = Final Result...	14.2 mg/m²

Results will increase or decrease if a smaller or larger surface is wiped using 20 mL of solvent for extraction. Prepare and test dilutions if needed.

Highly Contaminated Samples?

Prepare and test dilutions using extract

6 Use Vial or Plastic Test Tube



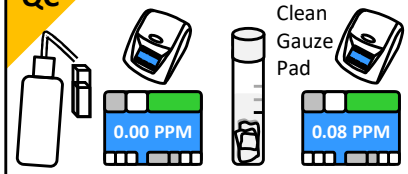
Pipette Extract	Add Solvent To	Dilution Created
250 uL x2	5 mL line	= 10X
100 uL	10 mL line	= 100X
40 uL	20 mL line	= 500X

Attach a tip to the micro-pipette to transfer the Extract into a new vial or graduated plastic test tube and dilute with hexane. Multiply readings by dilution factor to report sample concentration. Rinse pipette tip and test tube with solvent to reuse.

Quality Control Tests

Test solvent blanks and method blanks

QC

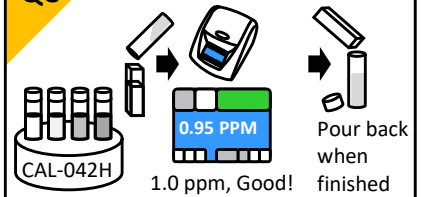


Rinse and fill the cuvette with hexane and test a Solvent Blank to make sure the solvent is clean. Readings should be close to zero ppm. Test a Method Blank using a clean gauze pad extracted in 20 mL solvent to check interference in gauze pad. Subtract reading in the Method Blank from sample results if necessary.

Perform Calibration Checks

Confirm calibration used is valid

QC Analyze Calibration Standards



Test a calibration standard to check the analyzer for accuracy and drift. Use Sitelab's EDRO standards or the oil standards you used to calibrate. Readings should be close. If readings are >20% off, new standards should be used. UVF-Trilogy calibrations are stable over long periods of time. Recalibrate only when necessary.

Factory Calibrations

UVF-Trilogy, 7200-004-EDRO

Analyzer is factory calibrated to EDRO using Sitelab's CAL-042H Calibration Kit to detect diesel and oil range hydrocarbons. Use this test by default if the oil is not available from your site.

Got oil? Ship it to Sitelab and we'll factory calibrate the analyzer for you. Oil standards prepared can also be purchased and have a 6-month shelf life.