QUICK REFERENCE GUIDE — OIL IN SOIL

UVF-500D Soil & Sediment Test Procedures using METHANOL SOLVENT

 Visit: UVF-500D.COM SOIL EXTRACTION KIT: PART NO. EXTR010-20, SOPV1

Equipment Required

UVF-500D, Part No. 50200, solvent dispenser bottle, adjustable pipette, digital scale, metal spatulas, tissue wipes and manual.

Test samples for hydrocarbons using TPH-Oil Calibration Kit, Part No. CAL-056M-500D or use the TPH factory calibration.

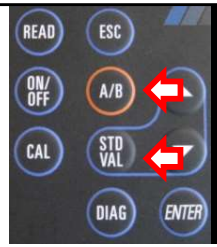
20 Sample Extraction Kit - Soil Product No. EXTR010-20

Use for sample analysis. Solvent not included. Use HPLC or other high grade methanol solvent.

Use a cup to collect solvent waste from rinsing cuvettes . Use tissue wipes to clean cuvette or spills.

WARNING! Methanol is highly flammable. Dispose solvent waste properly.

Set up Analyzer

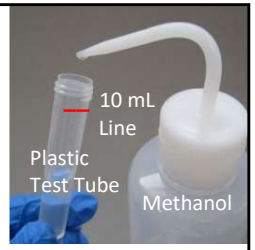


For TPH in soil, use Channel A only!

Set STD Value to 100 ppm

Press the ON/OFF button to turn the instrument on. Press the A/B button to select the Channel. Use Channel A for all TPH in soil applications. Press the STD/VAL button to check and confirm the TPH standard's concentration is set to 100 ppm. If not, then use the arrow keys to adjust the standard value and then press ENTER. Use the 8 mm cuvettes for soil analysis.

1. Extract Sample in Solvent



For Most Soil Applications:

Weigh 5 grams of sample into extraction jar using the scale and metal spatula. Fill the solvent dispenser bottle with methanol and squirt 10 mL of solvent into a graduated plastic test tube and pour into extraction jar. 10 mL + 5 grams creates a 2-to-1 or 2X Extract.

Testing Clay Samples, Sediments or Sludge?

Prepare a 4X Extract: Weigh 5 grams of sample into extraction jar and add 20 mL of solvent. Samples will settle faster and filter more easily.

2. Filter Extract

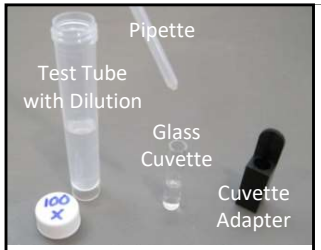
Tighten the cap and shake extraction jar by hand for two minutes. Next, let jar settle for several minutes or longer as needed. Remove cap from jar and suck up 3 to 5 mL from the surface using a syringe. Attach a filter to the syringe and dispense contents into a test tube. Label Extract tube with ID and 2X or 4X.

3. Prepare Dilution

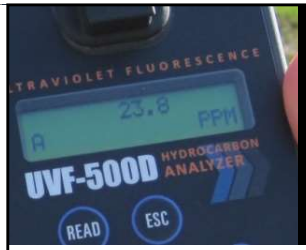
Adjust setting on the micropipette, attach a tip and use a 2nd test tube to prepare a dilution for analysis. Examples shown below account for the dilutions created in Step 1:

Pipette Extract	Add Solvent To	2X Extract Dilution	4X Extract Dilution
250 uL x2	5 mL line	= 20X	= 40X
200 uL	5 mL line	= 50X	**= 100X**
100 uL	5 mL line	**= 100X**	= 200X
50 uL	5 mL line	= 200X	= 400X
50 uL	*use 10 mL*	= 400X	= 800X

4. Test Sample and Record Results



Tighten cap and shake dilution made in Step 3 for several seconds prior to use. Use the pipette to transfer dilution into a glass cuvette, about half full or pour the dilution from test tube into the cuvette. Try and avoid spills. Use a tissue wipe to keep the outside glass clean from liquids or fingerprints before inserting into adapter.



Example: Sitelab TPH:
Cal Range = 0-100 ppm

Reading = "23.8 ppm" x 100X Dilution

Final Concentration = 2,380 ppm (mg/Kg)

Insert cuvette with dilution into the cuvette adapter, place into the sample well, press the READ button and wait for the concentration to be displayed. Press the READ button again to check repeatability. Readings are shown in PPM units (or mg/Kg for soil). Avoid readings near zero or below the 5 ppm TPH minimum detection limit. Readings above 100 ppm should be analyzed at higher dilutions. Pour back into test tube when finished. Save and store extracts and dilutions.

Multiply reading by dilution tested for final result.

Test Extracts if clear in color and samples are clean.

Check for Quenching

100X Dilution = 23.8 ppm

200X Dilution = 12.0 ppm

Good, Linear! 2,380 vs. 2,400

"Quenching" can occur when the detector is swamped by too many hydrocarbons or organic interferences, producing low, non linear concentrations. Test the sample at multiple dilutions to confirm results are linear and accurate. Rinse and clean test tube and pipette tip with solvent to reuse. Use Extract to make higher or lower dilutions.

Highly Contaminated Samples

Samples with very high concentrations of hydrocarbons require very big dilutions for analysis. The 100X Dilution prepared in Step 3 can be further diluted using the pipette. Pipette contents of the 100X into a clean test tube and add 5 mL or 10 mL of solvent. Use examples below:

Pipette 100X Dilution	Add Solvent To	New Dilution Created
250 uL x2	5 mL line	1,000X
50 uL	5 mL line	10,000X
50 uL	*use 10 mL*	20,000X

Quality Control Tests

Fill a cuvette with methanol and test a blank to make sure the solvent is clean. Readings should be 0 ppm (or close to zero). Test the TPH Solid Standard to check for drift and confirm the analyzer is properly calibrated. Readings should be close to 100 ppm (within 10%). If readings are greater than 20% off, then recalibrate UVF-500D.