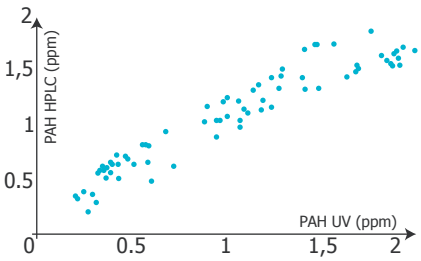
AQUALABO

PASTEL UV - HAP

SOIL ASSESSMENT & REMEDIATION

FAST & FIELD PAH QUANTIFICATION

COMPLIANT WITH EPA RECOMMENDATION



A GROWING CONCERN

Soil assessment and remediation markets are expanding in industrial countries, as soil protection has become a major issue of the environmental policies. Polycyclic Aromatic Hydrocarbons (PAHs) are considered as priority pollutants since some of them are expected to be carcinogens. PAHs are formed during the incomplete burning of coal, oil and gas, or other organic substances. Many industrial sites are contaminated by PAHs.

AN UNSATISFIED NEED

Investigation of contaminated soils, assessment of treatment processes and environmental monitoring of remediated soils require screening many samples. Laboratory analyses are expensive, time consuming and the procedures are not suitable for field conditions. Moreover immunoassay field tests give only qualitative or semiquantitative results. That's why there was a lack of fast PAH quantification kit in the market.

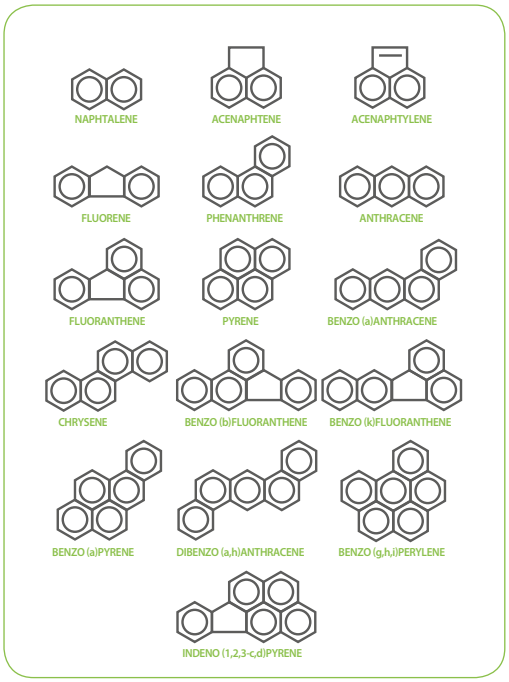
SECOMAM offers an innovating solution

- **Powerful :** SECOMAM has designed in conjunction with TOTAL and the Alès School of Mines a simple, fast, accurate and portable method for field PAH quantification. Based on the UV spectrophotometric analysis of a soil organic extract, the PAH concentration is estimated on site within 20 minutes. It refers to the 16 PAHs included in the US Environmental Protection Agency Priority Pollutants List. Furthermore a treatability index informs on the biodegradability of contaminants.The measurement range is 20-2000 mg/kg.
- **Accurate :** A validation study carried out on several contaminated soils from different origins shows a very good correlation between the UV field method and the standard laboratory methods.
- **Handy :** The PAH kit is easy to use and to carry. It comes complete with all materials required to implement 20 tests. A consumables kit for 20 additional tests is available upon request from SECOMAM.

ADVANTAGES

- Make a field diagnosis of a PAH soil contamination in 20 minutes only
- Point out the polluted area precisely
- Sort contaminated soils for treatment
- Select the best treatment and monitor its efficiency
- Survey the natural attenuation into a PAH contaminated soil
- Save time and money!

SECOMAM BY AQUALABO



EPA list of 16 PAH

PASTEL UV- HAP CASE FEATURED

The PASTEL UV – HAP, portable analyzer for PAH (Polycyclic Aromatic Hydrocarbons) is delivered in its carrying case with :

• (X1) Portable analyzer PASTEL UV –HAP • (x1) quartz cell 10x5mm (ref 0GQ203Z0) • (x1) graduated beaker • (x1) bottle brush for quartz cell • (x1) micropipette 1ml • (x10) micropipette nozzle • (x1) UV Pro software (ref 70MP0405) • (x1) user manual

In order to proceed with your first 20 analysis the following consumables (not provided),recommended by SECOMAM, will be necessary:

Equipment :

• (x1) 1 L polyethylene bottle for waste. • (x1) 1L polyethylene bottle for organic solvent. • (x1) filter support disk. • (x1) 0,5 mm sieve. • (x2) 50 ml polyethylene beaker. • (x4) 60 ml glass flasks with their cork. • (x1) 150 ml ceramic mortar with pestle. • (x1) portable electronic balance (pocket size, max. weighing range=150g, readout=0,1g). • (x1) metal spatula. • (x4) 20 ml graduated glass flasks with their cork. • (x1) filter funnel for syringe with (x20) fiber-glass filter GF/C. • (x20) disposable syringe. • (x50) 2 ml transfer pipettes. • (x1) 60 ml polyethylene flask for desiccant

Reagents :

• (x1) 1 liter of Acetonitrile HPLC grade for far UV (organic solvent) • (x1) 70 g of Anhydrous Sodium Sulphate (desiccant)

PROTOCOL

The kit is very easy to implement and does not require from the user any special skill. Five grams of soil are sampled and pretreated by drying, crushing and sifting. PAHs are then extracted from the soil by an organic solvent; the obtained extract is filtered and diluted. A few milliliters of solution are sufficient to perform a UV analysis. The cuve insertion into the analyzer starts the measurement and results are displayed one minute later. The full handling lasts twenty minutes only.

USE IN REHABILITATION WORKS

Within the framework of its environmental step and its sustainable development policy, the road company APPIA named GAUTHEY (Savoy) to operate the rehabilitation of its old exploitation site. The environmental branch of GAUTHEY defined targets in order to reuse the site for residential purpose.

This site of 8,728 m2 surface located on the city of Bourg-les-Valence (Southern France) w as subjected to the French industrial regulation for environmental protection. It was in the past occupied by coating manufacture and technical buildings. Because of this activity, main pollutants were hydrocarbons resulting from oils and fuels as well as Polycyclic Aromatic Hydrocarbons (PAH), heavy components present in bitumen. The site rehabilitation, followed up by the regional administration, took place in two phases: a phase of waste evacuation (waste in bulk, polluted effluents, tanks, rubble...) and a phase of soil analysis in order to define the works schedule and the perimeters to be excavated. On that purpose in situ analyses have been carried out using the PAH kit. The speed of analyses and their low implementation cost made it possible to save time and to multiply samplings. From the results obtained, zones to be treated have been pointed out quickly and precisely, and excavated lands have been sorted to be transported and treated in an approved center.

ORDERING INFORMATION

• **70MP0321 :** PASTEL UV - HAP