Analysis of herbicides

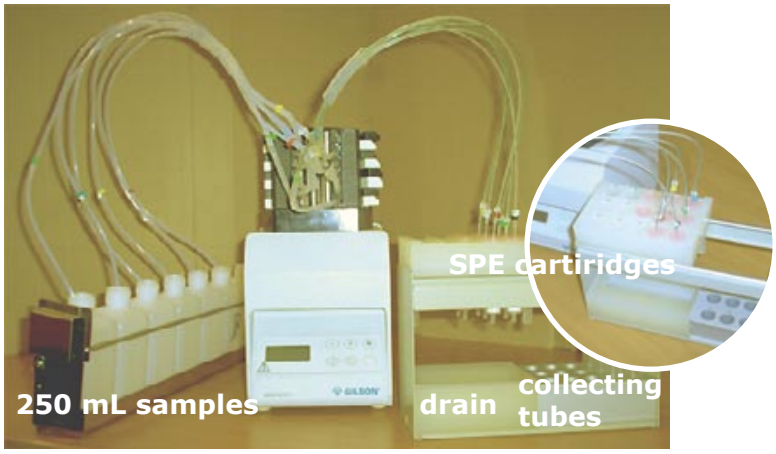
Among the National Institute of Public Health in Prague, Czech Republic, one of the research departments focuses its studies on the analysis of pesticides in various matrices such as groundwater, wastewater, etc. These analyses are based on the extraction of polar herbicides from water samples.

Samples are pumped through specific solid phase extraction (SPE) cartridges where the molecules of interest are bound on an SPE sorbent. The pumping system is comprised of a **Minipuls 3** fitted with an 8-channel pump head that delivers a constant and reproducible flow rate during the loading phase of the samples on the SPE cartridges, a critical factor to obtain an homogeneous amount of bound analytes.

The system used is semi-automated: to begin, the Gilson ASPEC XL performs a step-by-step conditioning of the SPE cartridges in batches of 1 to 8 cartridges. Then, eight **Minipuls 3** inlet tubings are manually inserted into 8 bottles containing 250 mL of water sample while the corresponding outlet tubings are adapted with peek tubing-needles plugged directly into the SPE cartridges.

The SPE process on the ASPEC XL is resumed with the **Minipuls 3** controlled by the GSIOC* from the ASPEC XL that monitors the speed and running time. The **Minipuls 3** pumps the 8 samples through the cartridges at a 2.5 mL/min flow rate. The process then pauses automatically to allow the operator to unplug the tubing-needles from the SPE cartridges. The ASPEX XL ends the protocol by washing and eluting the analytes.

*Gilson Serial Input Output Channel.



«An 8-channel pump head delivers a constant and reproducible flow rate during the loading phase of the samples on the SPE cartridges, a critical factor to obtain an homogeneous amount of bound analytes.»

Application field	Required Minipuls 3 products	Reference
Analytical chemistry	Minipuls 3 control module	F155001
	R8, 8-channel pump head	F117608
	Peristaltic tubing silicon 3mm ID	F1825114

Typical customers

Environmental laboratory
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