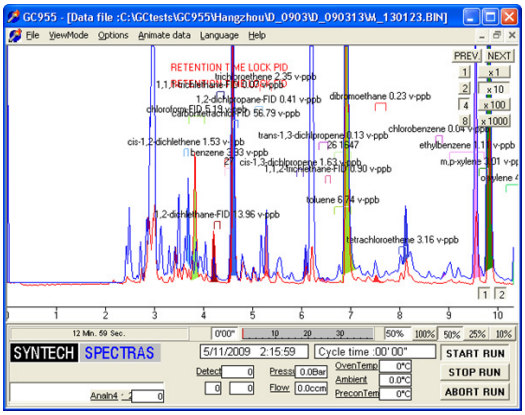
SYNTECH SPECTRAS ANALYSER

TOXIC HYDROCARBONS in INDUSTRIAL WASTE WATER



Surface water at concentrations below EPA alarm levels

NEW FROM SYNSPEC: A PURGE AND TRAP UNIT IS NOW AVAILABLE FOR THE SEPARATED INDIVIDUAL MEASUREMENT OF VOLATILE ORGANIC HYDROCARBONS IN WATER IN COMBINATION WITH THE FULL RANGE OF SYNSPEC GAS CHROMATOGRAPHS.
THE PURGE AND TRAP UNIT HAS BEEN DEVELOPED TO STRIP VOC WITH AIR OR NITROGEN FROM WATER FOR THE CONTINUOUS QUALITATIVE AND QUANTITATIVE DETERMINATION OF UP TO 40 HYDROCARBONS.

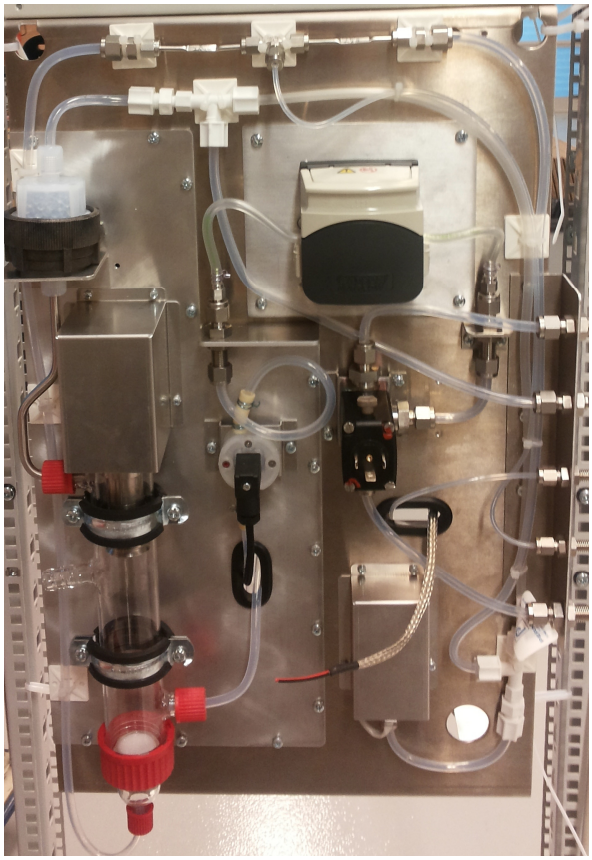
Three main applications are: monitoring industrial waste water, monitoring for control by authorities of drinking, surface and ground water and monitoring during cleaning of contaminated soil:
In industrial waste water the focus of pollution of water layers is on aromatic and chlorinated compounds. Complex industrial processes use water in purification processes and as cooling agent.
The water layer must be purified before it can be released to surface water. In some cases industries apply advanced biological methods for this purification, these beds may have to be protected from unwanted excess concentrations.
The Syntech Spectras WPU combined with a gas chromatograph can certify that the purity level is ok.
This means that the environmental surface water is not contaminated and high costs can be avoided

HYDROCARBON SELECTION
The hydrocarbons that are important to measure are toxic or carcinogenic. The major compounds listed in US-EPA and EN regulations can be monitored.
Aromates: a.o. BTEX (Benzene, Toluene, Ethylbenzene, Xylenes) in combination or as single as compounds.
Also higher boiling compounds like trimethylbenzenes can be measured down to less than 1 microgram per liter.
Chlorinated compounds: solvents and reagents, like chloroform, dichloroethane, trichloroethane, tetrachloroethene, chlorobenzenes.

Water is conditioned to just above room temperature, water flow from 3 to 30 l/hr.

CONFIGURATION OF THE WATER PURGE UNIT:
An external pump unit (either already provided by the user or by Synspec) pumps the water from the source. A second bypass pump ascertains a water sample without particles that passes to the purge unit. The sample is heated to a stable temperature. By purging clean air through this sample only the hydrocarbons are stripped from the water layer. Fine particles, salts, soaps and high boiling oils remain in the water layer.
The purge air flow is regulated up to 300 ml/min from a water flow with a capacity from 3 to 30 l/h.
The system has a foam destroyer to avoid foam entering the GC. The WPU is controlled by the computer in the GC.

GAS CHROMATOGRAPH:
The full range of the gas chromatographs from Synspec can be used for the analysis: the Synspec Alpha M/TNMHC analyser for the sum of the hydrocarbons , the Syntech Spectras GC955 615 analyser for toxic hydrocarbons which has been tested up to boiling point 180 ^{o}C.
Cycle times depend on the application from 3 to 30 min. For the gas chromatograph options separate data sheets are available.



	Technical details
Size	H 75 cm, Width 40 cm (fits 19"rack), D 21 cm
Power consumption	230V/6A or 115V/12A
Flow of water	100 – 500 ml/min
Flow of purging air	50 to 300ml/min at 4 bar, zero air generator as option available.
Water conditions	5 – 50 ^{o}C, cooling optional Freeze protection required
Environmental conditions	Temperature 5 – 40 ^{o}C, relative humidity 20 – 95% rH
Water (pre)filters	Depends on sample, sand filter, cyclone filter Entrance filter 250 um
Filter cleaning	Drinking water once a month, other depending on water particle content
Mounting	On wall or in rack, rear access is not needed
AC Power	220VAC 50/60 Hz or 110VAC 50/60 Hz
Recommended Analyzers	Syntech Spectras GC955 or Synspec Alpha and Delta line, internal computer GC controls WPU

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