

Swiss Environmental Report and suntan lotion

On 1. June Switzerland published its latest environmental report. This report is positive in many aspects. But mankind is putting pressure on the environment. This is the main reason for a mixed balance. The source and the effect of many chemicals are hardly known yet and the amount of waste is increasing. Many of the substances that are critical for the environment, like pesticides, synthetic additives, organic zinc compounds, UV filters in textiles and cosmetics or degradation products of the contraceptive pill are affecting our environment via the cycle of nature. [1] Some of these hormone active substances can influence the fertility of humans and animals. It was observed that a mixture of substances sometimes causes more damage as would be expected from the sum of the individual components.

However before the environmental report could be published, data had to be collected which involves the collection of representative samples and their analysis often by means of Chromatography.

Accumulation of pollutants on collection disks

EAWAG tested the practical use of 3M's collection disks for the development of an easily manageable method which one day can be used to test the pollution of water with chemicals. Working similar to SPE cartridges, the collection disk is directly exposed to the water where it accumulates organic substances similar to living things. This way the accumulation of substances in living things can be simulated and the total pollution over a certain period of time can be proved. In the mentioned EAWAG project the influence of the various environmental parameters (temperature, pH, conductivity, flow rate and matrix) on the uptake of the collection disk was examined. It turned out that the speed of the flow in particular is critical for the collection of substances and a test arrangement has to be planned carefully in order to make a quantitative statement about the pollution of the water.

Detection limit 1 ng/L with direct column injection

In December 06, we introduced the new HALO column. The HALO column is based on a porous shell which is "fused" to a solid silica core to allow fast chromatography without the enormous high pressure that occurs with the latest 1.7 μm UPLC phases. As Prof. Guiochon writes [2], the diffusion of small molecules through the stationary phase is fast so that the advantages of the HALO column are more apparent the bigger the molecules get. Mr. Berset from the „Amt für Gewässerschutz und Abfallwirtschaft des Kantons Bern" (department for water protection and waste management of canton Berne)

carried out a comparative study with a HALO column (50 x 2.1 mm, 2.7 μm , C18) with LC-MS/MS to measure pesticides, especially Triazine and urea pesticides and he was very happy with the result. So were we. We have more faith in the feedback of our customers than in any four colour brochure. His conclusion of the efficiency of the HALO column:

- sharp peaks
- high resolution
- higher signal/noise ratio
- lower detection limit
(1 ng/L with direct column injection !!! incredible !!!)
- better quantification in low ng/L range

We thank the EAWAG and the "Amt für Gewässerschutz und Abfallwirtschaft" for the interesting results and hope that you found our reflections on a current issue interesting even if this doesn't correspond with your specific area.

As the Reformer Martin Luther said: "Even if I knew that the world ended tomorrow, I'd plant an apple tree today" so we are trying to assess the day to create a better tomorrow for our children.

We are looking forward to your comments to collection disks, detection limit, HALO columns or today's emailing.

further information:

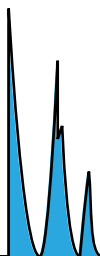
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<http://www.news-service.admin.ch/NSBSubscriber/message/attachments/8630.pdf>

<http://www.admin.ch/aktuell/00089/index.html?lang=de&msgid=12860>

- [1] Goetz, U.: NZZ am Sonntag, „Sonnencrème im Alpensee", (3. Juni 2007)
- [2] Guiochon G.: G.I.T Laboratory Journal, „Chromatographic Columns Evolve Rapidly", 3-4 (2007)



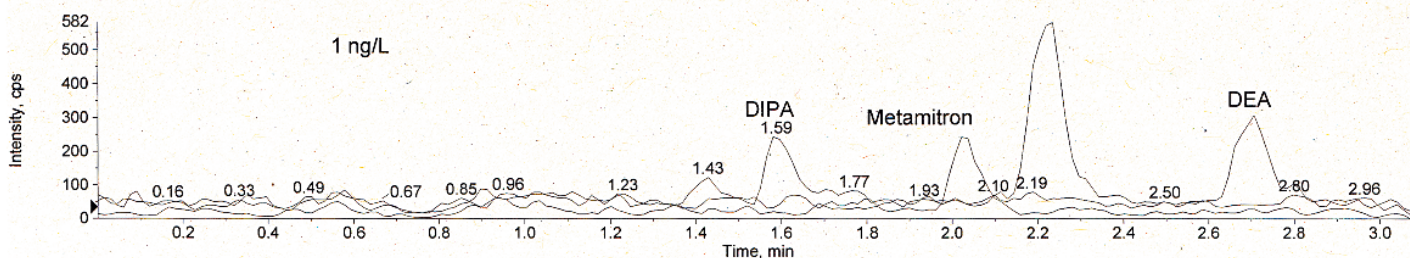
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Detection Limit 1 ng/L with Direct Column Injection

■ XIC of +MRM (6 pairs): Period 1, 174.1/104.0 amu from Sample 7 (1ng/L) of DataHALO_C18.wiff (Turbo Spray), SG Smoothed (1)

Max. 244.3 cps.



8AM-92812-402

Halo C18 HPLC Column
Size: 2.1 x 50 mm, 2.7 μ m
CHF 700.00/pcs.

http://www.infoagil.ch/hplc_nprp

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Collection Disks

| Phase | Applications | Disk \varnothing Pore Size | Particle Size | Product No. Price |
|---------------------|---|---------------------------------|---------------|--|
| SDB-RPS Disk | watersoluble pesticides and metabolites drugs and metabolites | 47 mm 0.2 μ m | 15 μ m | 83M-2241 CHF 1480.00/Pack of 60 pcs. |
| C18 Disk | semi-volatile and nonvolatile organic compounds: water samples, food extracts, soil samples | 47 mm 0.2 μ m | 12 μ m | 83M-2215 CHF 1040.00/Pack of 60 pcs. |



<http://www.infochroma.ch/prep/3m>

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