〔Sci. Total Enviro., **99**, 205 (1990)〕

Determination of Total Mercury Concentration in Wastewater by Continuous Microflow Analysis with Cold Vapor Atomic Absorption Spectrometry.

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Sub-parts-per-billion levels of mercury compounds in wastewater from the university laboratories and from a factory treating city refuse were determined using "continuous microflow analysis" with a cold vapor atomic absorption technique. The average total mercury content during 1987 for the wastewater of the inlet to the university pond was ca. 0.25 $\mu g\ l^{-1}$, while that in the outlet was ca. 0.24 $\mu l\ l^{-1}$. The total mercury concentrations in inlets of the pond depended on the activity of the laboratories.

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High-perfomance Liquid Chromatographic Determination of Malonaldehyde using *p*-Nitrophenylhydrazine as a derivatizing reagent.

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A high-performance liquid chromatographic procedure for the specific determinaiton of free malonaldehyde (MA) is described. MA solution was mixed with 1 M acetate buffer (pH 3.76) and was reacted with *p*-nitrophenylhydrazine (NPH) hydrochloride solution in ethanol. An aliquot of the reaction mixture was injected into a C_{18}-5 column with a mobile phase consisting of acetonitrile—isopropanol—0.01 M sodium dihydrogenphosphate (30 : 10 : 60, v/v/v) and detection at 315 nm. MA reacted readily with NPH in a weakly acidic medium at room temperature, giving 1-(*p*-nitrophenyl) pyrazole. The method is specific for free MA. The response was linear in the range 36—720 ng/ml of MA and the detection limit was 6ng/ml with a 20 μl injection.

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Behaviours of Siloxane Polymers Containing Phenyl or Silarylene as Stationary Phases for High-temperature Gas Chromatography.

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Several kinds of mechanisms have been proposed for the thermal degradation of methylphenylsiloxane and dimethylsiloxane—silarylene copolymer in an inert atmosphere. The termal stability of these stationary phases at temperatures as high as 420°C was examined usiug a deactivated metal capillary column, which is much more thermally stable than the fused-silica capillary columns. It was found that these phases degraded at 380—400°C by eliminating arylene-containing moieties, which led to cross-linking, and the peak shapes therefore deteriorated. With a column treated at 420°C, elution of solutes was considerably delayed and the elution order became unusual.