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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. $0.25 \mu\text{g l}^{-1}$, while that in the outlet was ca. $0.24 \mu\text{l l}^{-1}$. The total mercury concentrations in inlets of the pond depended on the activity of the laboratories.

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High-performance 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 determination 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 C₁₈-5 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 thermal stability of these stationary phases at temperatures as high as 420°C was examined using 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.