〔Sci. Tot. Environ., **46**, 229 (1985)〕

Mutagenicity of Chlorination Products from Soil Humic Substances.

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Soil humic substances were chlorinated in solution and extracted with ether, followed by mutagenicity assay. Mutagenicity was observed by *Salmonella typhimirium* TA 100, with or without S9 mix. and the mutagenic activity with S9 mix was smaller than that without S9 mix These ether extracts were analysed by gas chromatography-mass spectrometory (GC-MS) and various chlorinated and unchlorinated compounds were detected, for example, chlorinated esters, acetones and carboxylic acids as well as unchlorinated aromatics. The mutagenicity of maior chlorination products was examined. Chloral and pentachloroacetone were mutagenic, and 1,1-dichloroacetone was possible. Yields of these mutagens increased with an increase in chlorine dose.

〔Sci. Total Environ., **41**, 153 (1985)〕

Adsorption and Desorption of Polydimethylsiloxane. PCBs, Cadmium nitrate, Copper Sulfate, Nikle Nitrate and Zinc Nitrate by River Surface Sediment.

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An investigation into the adsorption and desorption of hydrophobic chemicals and heavy metals was carried out using either a flow-through system. The material balanca in the sediment compartment could be explained by the equation, $dC_s/dT=K_1C_w-K_2C_s$. The adsorption rate constant (K_1), desorption rate constant (K_2) and concentration factors (K_1/K_2) were calculated. For hydrophobic chemicals, the K_1,s were independent of water solubility, but the K_2's were relatively related to water solubility. The concentration factors per fraction organic carbon were similar to the soil sorption coefficients (K_{oc}), expressed on an organic carbon basis.

〔EISEI KAGAKU, **31** ,391 (1985)〕

Identification of Silicones in Field Samples, Anti-Foming Agent, Car Polish and Cosmetics by Gel Filtration-Inductively Coupled Plasma Emission Spectrometry (ICP).

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Gel chromatography with Sephadex LH-60 has been combined with inductively coupled plasma emission spectrometry for selective detection and determination of molecular weight of organosilicon compounds. Application of this method to the field samples and organosilicon containing products were described. The average molecular weight of organosilicon extracted from the field samples were 6000, and organosilicon compounds were ascertained to de polydimethylsiloxane by infrared spectroscopy. The organosilicon compounds (cologne were identified to be octamethylcyclotetrasiloxane and decamethylcyclopentasiloxane.