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Malodor Emission Characteristics in Rendering Plants.

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Odor emission characteristics in rendering plant was studied by measuring 14 kinds of odorants in the emission gases from main processes : cooking of raw bone, concentrating of glue, refining of fat, and drying of bone. The odor from cooker had higher concentration of all odorous components compared with the other processes. From any process except the drying one, there were detected hydrogen sulfide and methyl mercaptan in very high concentration. Higher concentration of ammonia and trimethylamine were detected in the dryer gas. Lower fatty acids were detected from all processes though the concentrations were low. In the odorous gases taken at both the emission source and borderline side, high correlations were recognized between organoleptic test value and concentrations of measured odorants.

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Deodorization of Exhaust Gas from Wastewater and Night-Soil Treatment Plant by Activated Sludge.

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A new deodorizing process using an activated sludge tank was developed and its efficiency and practicality were investigated for the odorous gases emitted from a wastewater treatment plant and a night-soil treatment plant. During each experiment, the performance of deodorization was relatively stable and high removal rates of the odorants were obtained at all times. In the wastewater treatment plant, aromatic hydrocarbons and dimethyl sulfide, which were main odorants, were removed from the odorous gases at the rate of about 90% or more by activated sludge tank. On the other hand, in the night-soil plant, hydrogen sulfide and ammonia in the odorous gases were removed at the rate of about 96% and 100%, respectively.

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Mercury Methylation by Ash from Refuse Incineration.

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The ash collected from refuse incineration plant methylated inorganic mercury. Methylation occurs abiotically in the dark and is influenced by reaction time and temperature, inorganic mercury concentration and solution pH. A high methylmercury production rate was observed for the first 12 hours. In pH range 3-11 rather low production and at Both extremes, pH 1.5 and 12.6, highest productions were observed. At higher temperature (40-60°C) steep increase in methylmercury production was observed, but methylmercury was even produced at 4°C. Methylating factors in the ash are more extractable with polar solvents, such as water and methanol.