3rd Int. Disposal Conf.,
Karlskoga, Sweden, 2003.

ORGANIC COMPOUNDS IN RESIDUES FROM INCINERATION OF MSWAND BIOFUELS

Inger Johansson
Örebro University, SE-701 82 Örebro, Sweden.

ABSTRACT

Organic material in three different incineration residues was examined. The residues were bottom ash from municipal solid waste incineration (MSWI), fly ash from the incineration of biofuels in a heating plant, and a mixture of biofuel and papermill ash. The MSWI bottom ash was examined for water leachable components. Changes of the organic carbon during open-air storage were also followed. Levels of polycyclic aromatic hydrocarbons (PAH) were examined in all three ashes.

The total amount of organic carbon in the MSWI bottom ash decreased during open-air storage. Concentrations of organic carbon in aqueous extracts of the ash were similar, though, resulting in increasing percentage of organic carbon over the course of time. The composition of the water leachable organic carbon changed during the open-air weathering towards an increasing amount of hydrophilic organic acids.

Levels of PAHs in the different ashes varied widely. In the MSWI bottom ash and the heating plant ash the levels were low, but in the biofuel and papermill ash mixture, the PAH levels exceeded the Swedish generic guidelines for PAHs in soil. The distribution of PAHs was similar in all ashes and was dominated by the low molecular weight PAHs naphthalene and phenanthrene.