



Project Summary

Integrated Model for Predicting the Fate of Organics in Wastewater Treatment Plants

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An Integrated Fate Model has been developed to predict the fate of organics in a wastewater treatment plant. The Fate Model was validated using experimental data from a pilot-scale facility; the biodegradation kinetic constants for some compounds were estimated using the group contribution approach.

When the Fate Model was compared with other existing models, some of its advantages are that the Model—

- has quantified all treatment mechanisms for primary- and activated-sludge treatment;
- has properties for 196 compounds in its database;
- can estimate first-order biodegradation kinetic rate constants for a variety of compounds using the group contribution method;
- has default values for small, medium, and large-scale wastewater treatment plants;

- can handle user input values for the plant operating parameters; and
- is easy to use on IBM PCs.

The Fate Model can assess volatile organic compound emissions from a wastewater sewer system, predict concentrations of toxic compounds on sludge, and provide a general framework for estimating the removal of toxic compounds during activated sludge treatment.

This Project Summary was developed by EPA's Risk Reduction Engineering Laboratory, Cincinnati, OH, to announce key findings of the research project that is fully documented on a diskette (see ordering information at back).

A journal article was submitted in fulfillment of Cooperative Agreement CR-812939 by the University of Cincinnati under the sponsorship of the U.S. Environmental Protection Agency. The journal article was published in *Environmental Progress*, Volume 10, No. 1, pp. 13-23, February 1991, and also will be available from the National Technical Information Service.



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The diskette, entitled "Fate Model Program (Version 1.0)," (Order No. PB91-507 137/AS; Cost: \$50.00, subject to change) will be available only from:

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