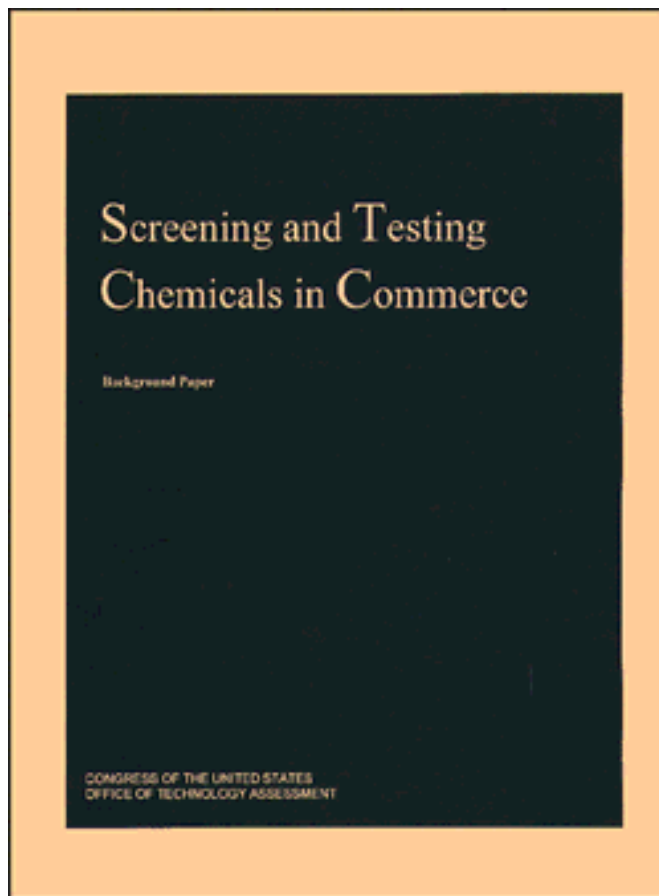


*Screening and Testing Chemicals in
Commerce*

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Foreword

In 1994 the Senate Environment and Public Works, Subcommittee on Toxic Substances, Research and Development asked the Office of Technology Assessment (OTA) to carry out a study on the Toxic Substances Control Act (TSCA). Enacted in 1976, TSCA gives the Environmental Protection Agency (EPA) authority to screen both new and existing chemicals-in-commerce to protect workers, consumers, and the environment. The Senate Subcommittee asked OTA to see if there are technologies or new approaches that would allow a more rapid screening of the existing chemicals-in-commerce for possible negative effects on human health and the environment.

This background paper comes from a workshop held by OTA in April 1995. OTA invited experts from industry, academia, and government who are involved with toxicity testing and screening chemicals. The individual chapters of this report were written by participants in the workshop. Each chapter discusses a specific type of testing or screening method. Every chapter has been reviewed by at least two outside reviewers for accuracy and completeness. After revisions, the final versions are produced here.

The report reviews some of the many test technologies and techniques available for screening chemicals-in-commerce for toxicity. Some of the test technologies, such as those for predicting carcinogenesis, are well established and results can be fairly clearly linked to real health effects in humans. Results of other tests, such as those for detecting neurotoxicity, are presently less clearly linked to actual human health effects. Structure-activity analysis, a class of techniques used to predict the toxicity of unknown compounds based on knowledge of related chemicals, may be especially useful for screening large numbers of compounds. However, predictive methods and computer modeling of toxicity will never be a complete substitute for real toxicity data.

OTA appreciates the assistance and support it received for this effort from many contributors and reviewers. They provided OTA with valuable information and important insights critical to the completion of this background paper. OTA, however, remains solely responsible for the contents of this report.



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