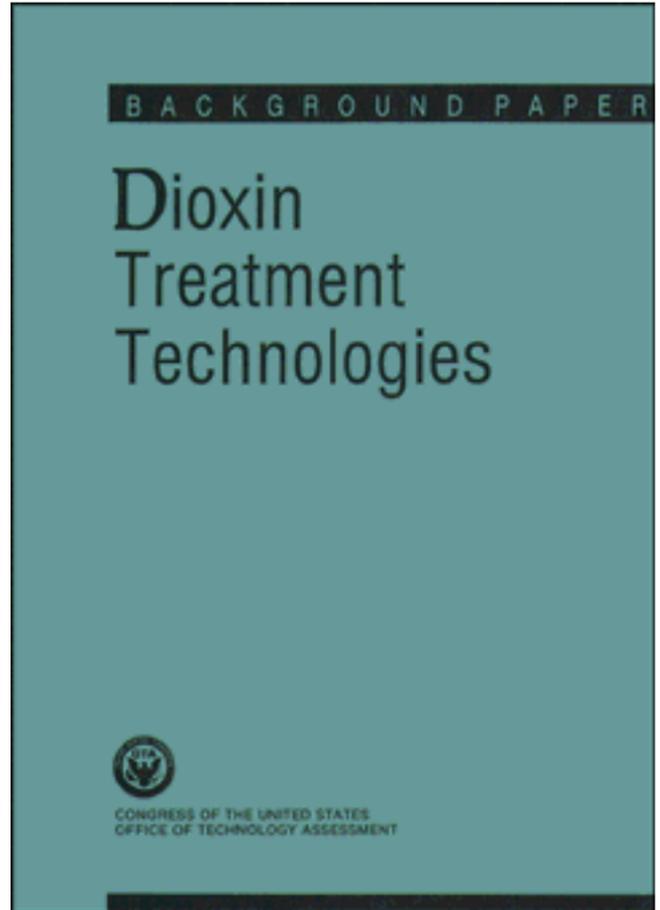


Dioxin Treatment Technologies

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Foreword

Nearly 100 hazardous waste sites around the United States have serious problems with dioxin contamination. Very little actual cleanup has been done at these sites. Plans to incinerate dioxin-contaminated materials at some sites have caused concern in the local communities that has led to public debate about the effectiveness of incineration and the availability of other remediation alternatives.

Because of these public concerns, Congressman Richard A. Gephardt asked OTA for some technical assistance on dioxin remediation technologies. OTA's previous assessments of hazardous waste treatment technologies, done for various committees, provided an appropriate base of expertise from which to undertake this more focused follow-on work. This resulting background paper evaluates alternative destruction technologies suitable for dioxin-contaminated soils and debris, and assesses the potential benefits and risks of their use on a large-scale dioxin cleanup.

This paper presents the status of national efforts to cleanup dioxin-contaminated sites and the technologies that have been used, proposed, and researched. It covers thermal and nonthermal treatment techniques as well as approaches such as stabilization and storage. It discusses the development of these technologies as well as advantages and disadvantages of their use.

Because dioxin destruction is both difficult and costly, to date only a few technologies have advanced beyond the research stage, and only incineration has been fully tested and approved for use at specific sites by the regulators. OTA concluded that, while these other technologies have promise, they will require more development effort and funding to prove suitable for specific applications.

OTA appreciates the assistance and support this effort received from workshop participants, reviewers, and other contributors. They provided OTA with valuable information critical to the completion of this study and enabled OTA to incorporate much more complete and accurate analyses. OTA, however, remains solely responsible for the contents of this report.


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NOTE: OTA appreciates and is grateful for the valuable assistance and thoughtful critiques provided by the workshop participants. The workshop participants do not, however, necessarily approve, disapprove, or endorse this report. OTA assumes full responsibility for the report and the accuracy of its contents.

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