

EXECUTIVE summary



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TREATMENT PROCESSES

Benefits

- Describes a scientifically sound approach for assessing the fate and compatibility of flushable consumer products in wastewater disposal systems.
- Ensures objectivity and removes bias from the assessment process.

Available Formats

Soft cover and free online PDF.

Contractor

Drew C. McAvoy, Ph.D.
The Procter & Gamble Company

Protocols to Assess the Breakdown Of Flushable Consumer Products

A scientifically sound approach is needed to ensure that flushable consumer products are compatible with household plumbing fixtures and wastewater collection and treatment systems. Such an assessment approach also should ensure that flushable consumer products do not become an aesthetic nuisance in surface waters and soil environments.

This report presents an overall approach for assessing the fate and compatibility of consumer products in wastewater disposal systems. While the focus of this document is on the United States, it is believed that the conceptual approach and many of the test methods could be used to assess the compatibility of flushable consumer products in wastewater disposal systems throughout the world.

At the request of The Procter & Gamble Co. (P&G), the Water Environment Research Foundation appointed a peer review committee (PRC) to evaluate P&G's approach for assessing the fate and biodegradability of flushable consumer products. The ultimate goal of this peer review was to develop a scientifically sound document that describes the approach, current methodologies, and quality assurance that support the flushability of consumer products. Revised protocols and improved flushability stan-

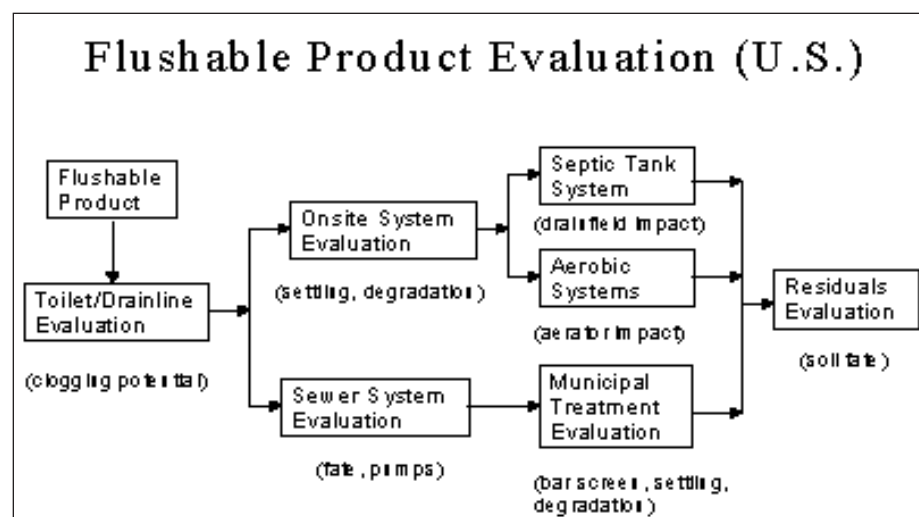


Figure 1. Disposal pathway of flushable consumer products in the United States

Project Team

Gayle A. Rece
Erin L. Schwab
Barbara A. Nuck
Nina R. Itrich
Rodney C. Stark
The Procter & Gamble Company

Project Subcommittee

Damann L. Anderson, P.E.
Hazen and Sawyer
Herschel A. (Chip) Elliott, Ph.D., P.E.
Pennsylvania State University
C.P. Leslie Grady Jr., Ph.D., P.E.
Clemson University
Thomas P. Konen, P.E.
Stevens Institute of Technology

dards will aid the wastewater industry by helping to ensure that flushables will break down as they move through treatment systems.

Supporting Product Claims

Several consumer products are currently being marketed as "flushable," "biodegradable," or "safe for sewers and septic systems." These products include bath tissue, wet wipes, and tampons. In the United States, the U.S. Federal Trade Commission regulates environmental claims, especially those related to existing waste management practices; manufacturers must have supportable data for those claims. Currently, there are no broadly acceptable methodologies for assessing the flushability of consumer products.

In developing a flushable product, the manufacturer may need to balance between those properties that make a product useful and those that make it flushable. In particular, manufacturers must consider existing infrastructure for wastewater disposal and be aware of any new laws that may reduce flow in plumbing fixtures, affect biodegradability claims, or change the way sludge disposal is handled. Consumer perceptions are also an important factor. Changing the habits and practices of consumers may not be easy, especially if there is an additional cost.

In the development of an overall approach and test method for assessing flushability, several guiding principles were developed. For a product to be flushable it should:

- Clear toilets and household drainlines under expected usage
- Be compatible with wastewater conveyance and treatment systems
- Not be visible in the environment within a reasonable period of time
- Be safe (nontoxic) in relevant environmental compartments.

This report provides a launching point for others who want to refine methods and procedures or develop new ones.

Much of this report focuses on the first three principals, which are related to the fate and biodegradation of a consumer product. The last guiding principal relates more to product safety and is addressed by investigating the exposure and potential effects of the product ingredients in relevant environmental compartments (e.g., aquatic and terrestrial systems). The approach for conducting a safety assessment is beyond the scope of this document.

Peer Review Process

Peer review was thought to be crucial in developing sound test methods and conducting sound science. Ultimately this process will lead to better data by ensuring objectivity and removing bias from the assessment process. Moreover, an independent review lends credence to the scientific approach and methods being used. Such reviews also improve the decisions being made because they are based on the best available science.

Following a program review and site evaluation visit, the WERF Peer Review Committee concluded P&G's approach for assessing the fate and biodegradability of flushable consumer products is fundamentally sound and provides sufficient methodological detail for the development of a successful and scientifically defensible product-testing program. The WERF PRC added value in a number of areas by suggesting modifications that would further strengthen the testing protocols. These recommendations were incorporated into the final product.

While an attempt was made to develop procedures for the entire range of flushable consumer products, wastewater conveyance, and treatment systems, modifications or additional protocols may be necessary to address specific products, wastewater systems, and local conditions. Some procedures are still evolving and will benefit from further testing and evaluation. This report provides a launching point for others who want to refine methods and procedures or develop new ones. The work is part of ongoing efforts to ensure that consumer products are compatible with wastewater conveyance and treatment systems and do not pose an environmental or aesthetic nuisance.

This report represents the first comprehensive guide of methodologies for assessing the fate and biodegradability of flushable consumer products. Ultimately, this work could provide the basis for developing a widely accepted and comprehensive guidance manual for assessing the compatibility of flushable products in household and waste disposal systems.

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