

[Company logo]

To Our Suppliers

[Company name] is committed to minimizing the environmental footprint of our products.

We recognize that some of the components and materials used in and on our custom boats may contain chemicals targeted for elimination and/or reduction.

We encourage our value-chain suppliers to partner with us in reducing or eliminating use of these chemicals.

This series of three Fact Sheets and Supplier Feedback Request Form provide context and guidance in this endeavor.

Prepared by:



Funded by:



U.S. Environmental Protection Agency

Published September 2005

Fact Sheet # 1

DecaBDE Overview

Introduction

Yachting and boating are a very popular American pastime. Because many components, materials and furnishings on boats and yachts are highly flammable, and are subject to stringent fire safety standards, flame retardants are added during production of these components and materials.

A commonly used group of fire retardants are polybrominated diphenyl ethers (PBDE), halogenated bromines, which have been determined to be persistent and bioaccumulative toxins (PBT). PBTs do not break down easily in the environment and increase in concentration up the food chain, posing a significant threat to human health.

Two of the most toxic PBDEs, Penta- and Octa- Brominated diphenyl ether, have been phased out of U.S. production as of 2004, but Decabrominated diphenyl ether (DecaBDE) remains in commercial production. In 2001, total market demand for DecaBDE in North and South America was about 25 metric tons.

[Company Name] seeks to phase out use of DecaBDE in all components and materials used in our boats and allied products. This fact sheet provides information about the toxicity of DecaBDE, what onboard products it may be found in, and lists possible design alternatives. The accompanying fact sheet *DecaBDE Uses and Alternatives* presents more detailed information on specific alternatives.

Issue

PBDEs are now ubiquitous in the environment, since they have been used abundantly for at least three decades as fire retardants. Typical uses for PBDEs have been fire retardant additives in such materials as polyolefins, polyvinyl chloride (PVC), styrenics, thermosets, thermoplastics, elastomeric polymers, coatings and adhesives, and other polymers, as well as back-coatings for cotton and synthetic fabrics.

Studies link PBDEs to serious health effects including memory impairment, learning and behavioral problems, disruption of thyroid hormone balance, non-Hodgkin's lymphoma in humans, and a variety of cancers in rodents.¹ Studies over the past few years measured PBDEs in human blood, fat, and breast milk, and in indoor and outdoor air, dust, sediments and biota. By far, the highest levels are found in North America,² but PBDEs are a global, transboundary problem.

The following are possible marine and allied products that may contain DecaBDE as a fire retardant.

- Cables and Wiring used for energy distribution, electrical supply, winding wires, communications cable (including coaxial), optical fiber, etc.
- Electrical Components such as battery cases, lightning protection, armatures, circuit boards/breakers, connectors, relays, switches, sockets, cable and accessories, conduit, joints and terminations, branching units, and amplifiers.
- Electronics and Electronics Housings including electronic components encapsulation, automation equipment, steering wheels, dashboards and front panels, computers,

DecaBDE
Applications:

Cables

Wires

Electronics

Furniture

Interior fixtures

Furnishings

Construction

Alternatives:

*Halogen-Free
Fire Retardants*

*Low- or Non-
Flammable Materials*

*Reposition
Flammables Away
From Heat Sources*

keyboards, other electronic instruments, circuit boards, chips, parts of electrical machines, mini fans, remote controls, audio video equipment (radios, TV sets, etc.), business machines, electronic components of furniture, connectors measurement instrumentation; controls; communication; navigation equipment; and entertainment.

- Furniture including seat cushions, sofas, beds, polyurethane foam, upholstery fabrics, plastic components, and power operating chairs containing electronic components.
- Interior Fixtures and Furbishings, such as all covering, cabin liners, carpet and carpet pads, appliance housings, lamp sockets, consumer electronics, coolers, packing materials, bedspreads, pillows, squeezable bottles, and bottle closures.
- Construction Materials including insulation, paints and coatings (aesthetics, protecting surfaces, and improving physical properties coating), reinforced plastics, technical laminates, pipes, tubes, ducts, film and polyurethane foam.

Washington State PBDE Action

Washington State Department of Ecology and Department of Health are developing a final Chemical Action Plan on PBDEs, which will evaluate whether safer and cost-effective alternatives for DecaBDEs exist. The expected completion of the plan is December 2005. (See <http://www.flameretardants.org> for current status and future updates.) Additional state, federal, and international legislation and initiatives are listed in the fact sheet titled *PBDE – Current Legislation*.

[Company Name] PBDE Initiative

[Company name] strives to be an industry leader in supporting voluntary and government initiatives regarding PBDEs. We want to encourage our product and material supply chain to eliminate the use of DecaBDE in the products we purchase.

Design alternatives may include:

- formulation changes to a different, non-halogenated fire retardant additive;
- material changes to resins or products that are inherently more flame resistant; and/or,
- distancing flammable materials from heat sources.

[Company name] encourages alternatives to DecaBDE wherever possible. [Company name] has not evaluated the impacts of alternatives designs and substitute fire retardants. As possible alternatives are identified, [Company name] commits to supporting suppliers in evaluating environmental impact and functional performance.

The accompanying fact sheets, *Fact Sheet #2: PBDE – Current Legislation* and *Fact Sheet #3: DecaBDE Uses and Alternatives*, discuss additional legislation and specific uses and alternatives in more detail. An accompanying *Supplier Feedback Form* requests supplier feedback on current products that do contain or may contain DecaBDE.

¹ Health Care Without Harm. 2005. "What Health Care Purchasers Can Do to Reduce Flame Retardants." Pub 9-01.

² Washington State Department of Ecology, and Washington State Department of Health. 2004. "Washington State PBDE Chemical Action Plan: Interim Plan." Publication No. 04-03-056 and 333-068.