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## Existing Chemicals

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# Polybrominated Diphenyl Ethers (PBDEs) Action Plan Summary

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[Download the complete Polybrominated Diphenyl Ethers \(PBDEs\) Action Plan \(PDF\)](#), (16 pp., 170KB, [About PDF](#))

[Access the public comment docket for the Polybrominated Diphenyl Ethers \(PBDEs\) Action Plan \(Docket ID EPA-HQ-OPPT-2010-0146\) on Regulations.gov.](#)

### What chemicals are addressed in the action plan?

Polybrominated diphenyl ethers (PBDEs) include the commercial versions of pentabromodiphenyl ether (c-pentaBDE), octabromodiphenyl ether (c-octaBDE), and decabromodiphenyl ether (c-decaBDE). Each of these commercial products is a mixture composed of several PBDE congeners. PBDEs are used as flame retardants in a number of applications, including textiles, plastics, wire insulation, and automobiles.

### Why is EPA concerned about these chemicals?

EPA is concerned that certain PBDE congeners are persistent, bioaccumulative, and toxic to both humans and the environment. The critical endpoint of concern for human health is neurobehavioral effects. Various PBDEs have also been studied for ecotoxicity in mammals, birds, fish, and invertebrates. In some cases, current levels of exposure for wildlife may be at or near adverse effect levels.

PBDEs are not chemically bound to plastics, foam, fabrics, or other products in which they are used, making them more likely to leach out of these products. [Despite the United States having phased out the manufacture and import of penta- and octaBDE in 2004](#), their component congeners are being detected in humans and the environment. Some reports indicate that levels are increasing. One potential source is imported articles to which these compounds have been added. Another is the possible breakdown of decaBDE in the environment to more toxic and bioaccumulative PBDE congeners.

EPA has concerns with decaBDE's hazards as well as its potential to be transformed to other PBDE congeners. DecaBDE was included in EPA's [Voluntary Children's Chemical Evaluation Program \(VCCEP\)](#), which identified a number of tests needed to better understand decaBDE's potential for transformation.

### What action is EPA taking?

On the basis of existing information, the Agency believes that the following actions would be

warranted:

EPA intends to initiate rulemaking in autumn 2010 to add these commercial PDDE mixtures and/or the congeners they contain to the Concern List under [TSCA section 5\(b\)\(4\)](#) as chemicals that present or may present an unreasonable risk of injury to health or the environment.

EPA intends to initiate rulemaking to propose a [TSCA section 5\(a\)\(2\)](#) significant new use rule (SNUR) requiring notice to the Agency prior to the manufacture or import of articles to which c-pentaBDE or c-octaBDE have been added. A notice of proposed rulemaking is intended to publish in 2010.

EPA also intends to support and encourage the voluntary phase-out of manufacture and import of c-decaBDE. EPA has received [commitments from the principal manufacturers and importers of c-decaBDE to initiate reductions in the manufacture, import and sales of c-decaBDE](#) starting in 2010, with all sales to cease by December 31, 2013. EPA intends to encourage other importers of c-decaBDE to join this initiative. As part of this encouragement, EPA intends to develop Design for the Environment and Green Chemistry alternatives analysis for c-decaBDE to aid users in selecting suitable alternatives. The alternatives analysis is intended to begin in spring 2010

EPA also intends to initiate rulemaking to propose a simultaneous SNUR and the previously announced test rule for c-decaBDE. The significant new use would be manufacture, (including import) of c-decaBDE or articles to which c-decaBDE has been added. The [TSCA section 4](#) test rule would require development of information necessary to determine the effects of manufacturing, use or other activities involving c-decaBDE on human health or the environment. If the Agency determines that manufacture (including import) of c-decaBDE or of articles to which c-decaBDE has been added has not ceased, EPA intends to promulgate the test rule. Notices of proposed rulemaking for the SNUR and the test rule are intended to publish in 2010.

#### **Previous Actions:**

[Read about the previous phase-out and existing significant new use rule on penta- and octaBDE.](#)

[Read about commercial decaBDE in VCCEP.](#)

#### **Current Actions:**

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[Access the public comment docket for the Polybrominated Diphenyl Ethers \(PBDEs\) Action Plan \(Docket ID EPA-HQ-OPPT-2010-0146\)](#) on [Regulations.gov](#).

[Read about the commitments to phase-out commercial decaBDE.](#)

[Read the EPA report, An Exposure Assessment of Polybrominated Diphenyl Ethers \(Final Report\)](#), released May 24, 2010.