



## Existing Chemicals



[Contact Us](#)    **Search:**    All EPA    This Area

You are here: [EPA Home](#) » [Chemical Safety and Pollution Prevention](#) » [Pollution Prevention & Toxics](#) » [Existing Chemicals](#) » Polybrominated Diphenyl Ethers (PBDEs) Action Plan Summary

## Polybrominated Diphenyl Ethers (PBDEs) Action Plan Summary

- [What chemicals are addressed in the Action Plan?](#)
- [Why is EPA concerned about these chemicals?](#)
- [What action is EPA taking?](#)
- [Previous Actions](#)
- [Current Actions](#)

### 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?

Based on EPA's screening-level review of hazard and exposure information, EPA's action plan called for EPA to:

1. Initiate rulemaking in autumn 2010 to add these commercial PBDE 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.
2. Initiate rulemaking to propose a [TSCA section 5\(a\)\(2\)](#) significant new use rule (SNUR)

Existing Chemicals  
Home

Basic Information

Enhancing EPA's  
Chemicals  
Management  
Program

Managing Chemical  
Risk

Collecting and  
Assessing  
Information on  
Chemicals

Transparency:  
Finding Public  
Information on  
Chemicals

International  
Activities

Related EPA  
Activities



Chemical  
Characterizations

requiring notice to the Agency prior to the manufacture or import of articles to which c-pentaBDE or c-octaBDE have been added.

- March 20, 2012: [EPA proposed to amend the PBDE SNUR](#) (139 p., 668 kb.) [About PDF](#)) by: (1) designating processing of any combination of the six PBDE congeners contained in c-pentaBDE or c-octaBDE for any use which is not ongoing, as a significant new use (2) designating manufacturing, importing, or processing of decaBDE for any use which is not ongoing after December 31, 2013, as a significant new use and (3) designating the manufacture (including import) or processing of any article to which PBDEs had been added a significant new use. Any person who intended to import a PBDE as part of an article for a significant new use would be subject to significant new use reporting. Ongoing uses would be excluded from the SNUR. EPA will accept comments on the proposal until 60 days after publication in the Federal Register. [Read the proposed PBDE SNUR](#). (139 p., 668 kb.) [About PDF](#)) [Read the press release](#).
- 3. 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 Assessment for c-decaBDE to aid users in selecting suitable alternatives.
  - [October 2010: EPA began the DfE alternatives Assessment](#).
- 4. Initiate rulemaking to propose a simultaneous SNUR and 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.
  - March 20, 2012: EPA proposed a PBDE SNUR and simultaneously proposed a TSCA section 4 test rule for c-pentaBDE, c-octaBDE, and c-decaBDE. The test rule would require development of information necessary to determine the effects of manufacturing, processing, or other activities involving these c-PBDEs on human health or the environment. EPA intends to promulgate the test rule if it determines that manufacture (including import) or processing of c-PBDEs, including in articles, has not ceased by December 31, 2013. EPA will accept comments on the proposal until 60 days after publication in the Federal Register. [Read the proposed PBDE SNUR and Test Rule](#). (139 p., 668 kb.) [About PDF](#)) [Read the press release](#).

#### 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:

[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.](#)



- [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.](#)
- [Access information on the Design for the Environment \(DfE\) Flame-Retardant Alternatives for Deca-BDE Partnership.](#)
- [Access the public comment docket for the PBDE SNUR and Test Rule \(Docket ID EPA-HQ-OPPT-2010-1039\) on Regulations.gov.](#)

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