Decabromodiphenyl Ether (BDE-209)

CAS 1163-19-5

2,2′,3,3′,4,4′,5,5′,6,6′-

C₁₂Br₁₀O

Summary of Health Effects
Decabromodiphenyl ether (BDE-209) may affect the nervous system and behavior, and may affect the immune system, thyroid and liver in animals.

How is BDE-209 used?
BDE-209 is a polybrominated diphenyl ether (PBDE) flame retardant used in consumer products.¹ BDE-209 made up 80% of PBDE production in 2000.²

Toxicity: What are its health effects?
Studies suggest that high concentrations of PBDEs may cause changes to the nervous system which influence behavior and immune effects in animals.¹

Animal studies have shown that BDE-209 has effects on the thyroid and liver.¹

Exposure: How can a person come in contact with it?
A person can come in contact with BDE-209 by breathing it in, swallowing it, or from skin contact.¹³

Since PBDEs are not chemically bound to consumer products, they can enter the environment after being released from the products.¹³,⁴ Abrasion of flame-retardant treated products may release the BDE-209 onto the contact material (such as skin) or into the air, from which, it can accumulate in house dust.³ Children may also be exposed to BDE-209 through hand-to-mouth contact with house dust or other surfaces. PBDEs dissolve readily in fat and they can accumulate in breast milk, which means they can be passed on to breastfeeding children.¹

A study in the Great Lakes regions found that PBDE concentrations in gull eggs have increased over the last several decades.⁵ 2014 National Health and Nutrition Examination (NHANES) data are available for many PBDEs, but not specifically for BDE-209.

Other Information
Vermont has banned the use of BDE-209 above 0.1% by weight in the following products:⁶
- Mattresses/Mattress Pads and Upholstered Furniture (Since July 1, 2010)
- Plastic Housing of Televisions/Computers (Since July 1, 2012)
- Plastic shipping pallets, except those manufactured before January 1, 2011 (Since July 1, 2013)
References


