

The Worst Pet Food for Toxic PDBEs

The exposure to flame retardant chemicals (PBDEs) is bad enough with household dust, carpeting and furniture, but now researchers are finding it at high levels in pet foods. Especially toxic to cats, find out which foods were found to be the worst offenders.

Reviewed by [Dr. Becker](#)

STORY AT-A-GLANCE

- A recent study has confirmed findings of earlier studies that the high levels of flame retardants (PBDEs) that accumulate in housecats are from house dust
- The study results are a heads up for parents of both indoor cats and small children, because they both engage in lots of hand (or paw) to mouth activities, meaning they're both ingesting and inhaling contaminated house dust
- Another source of PBDE exposure for cats is commercial cat food, specifically fish-flavored food, both of which are linked to the growing problem of feline hyperthyroidism
- If you're concerned about PBDEs in your home environment, there are steps you can take to minimize exposure
- To protect your cat from these noxious chemicals, it's important to address both PBDEs in your environment, and in your cat's diet

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A recently published study from Stockholm University has confirmed what prior studies have suggested, namely that the high levels of brominated flame retardants (PBDEs) measured in cats are from house dust.¹

PBDEs are used in textiles, electronics and furniture to prevent them from burning, but they aren't chemically bound to the product material, so they drift into the environment and cling to particles in the air such as house dust.

A number of these chemicals have been banned for use in household products, but they are extremely persistent and can leach into the environment for many years. Contaminated household dust can be inhaled as well as ingested, and can have an adverse effect on the health of kitties.

Study Measured PBDEs in House Dust and Housecats Simultaneously

Prior studies of PBDE blood levels in cats have focused primarily on potential causes of [feline hyperthyroidism](#), however, this latest study measured levels in healthy cats to establish their dust exposure.

The researchers took "paired samples" from the homes of each of the cats, meaning they took both dust samples and blood samples at the same time.

They found evidence not only of brominated and chlorinated contaminants currently in use, but also chemicals that have been banned for decades. According to study co-author Jana Weiss, Ph.D.:

*"By taking paired samples, we have greater insight into the environment that the cats live in. Moreover the cats in the study spent the majority of their time indoors and therefore air and dust in the home is expected to contribute more than the outdoor environment."*²

The study results are a heads up not only for cat guardians, but also anyone with small children, because both kitties and kiddos engage in a lot of "hand-to-mouth activities."

"The brominated flame retardants that have been measured in cats are known endocrine disruptors. It's particularly serious when small children ingest these substances because exposure during development can have consequences later in life, such as thyroid disease," said Weiss.

Minimizing PBDE Exposure at Home

Most new foam products are not likely to have PBDEs added. If you have foam items in your home, office or vehicle that were purchased before 2005, however, they probably contain PBDEs.

The **Environmental Working Group** offers the following tips to help limit your family's and pet's exposure to PBDE-containing products:

- Exercise caution with foam items. Replace any item in which the foam is exposed or misshapen (an indicator the foam is breaking down and releasing toxic compounds into the environment)
- Use only vacuums with HEPA filters, which are better at trapping small dust particles and are more efficient at removing contaminants and allergens from your home or office. The same principle applies to indoor air cleaners with HEPA filters
- Replace rather than reupholster foam furniture. Even PBDE-free furniture can contain other types of fire retardants with harmful effects
- Remove old carpet with care. The padding beneath may contain PBDEs
- When buying a new product, ask what type of fire retardant it contains. Try to avoid purchasing items containing PBDEs. Go with less flammable materials, for example, cotton, wool and leather

Keep in mind that "natural" latex foam and natural cotton are flammable and by law require the addition of a fire retardant.

Another Source of PBDE Contamination – Commercial Cat Food

PBDEs are also known to exist in **commercial pet food**, so the Stockholm University researchers purchased cat food (both canned and kibble) matching the diets of the kitties in the study.

They found that blood levels of PBDEs in the cats also significantly correlated with concentrations of those chemicals in the cat food.

Because this study was part of a larger ongoing project that is identifying and evaluating the presence of endocrine disruptors in indoor environments,³ the research team wasn't specifically focused on the presence or impact of PBDEs in cat food.

However, if you have kitties at home, you need to be, because another recent study evaluated the connection between flame retardant compounds and feline hyperthyroidism, and concluded that fish-flavored cat food is a problem.⁴

A team of Japanese scientists evaluated cat food and feline blood samples and discovered that the type of polychlorinated biphenyl (PCB) and PBDE byproducts found in both the food and blood samples are derived from marine organisms.

The researchers were also able to simulate the way in which the bodies of cats convert the type of chemical present in the food into the type of chemical seen in the cats' blood samples.

Based on their results, the team concluded the byproducts detected at high levels in cats' blood samples likely came from fish-flavored food and not exposure to PCBs or PBDEs. However, further work is needed to determine the link between the metabolites (byproducts) and hyperthyroidism.

How PBDEs Wind Up in Cat Food

For those of you wondering how these chemicals wind up in fish-flavored cat food, Dr. Jean Hofve of Little Big Cat explains it quite well:

"There is a link between the feeding of fish-based cat foods and the development of hyperthyroidism, which is now at epidemic levels.

New research suggests that cats are especially sensitive to PBDEs (which, among other things, are used as fire retardants in carpeting and furniture), chemicals found at higher levels in both canned and dry cat foods than dog foods; and more in dry than canned cat foods.

Fish-based foods are even worse, because marine organisms produce PDBEs naturally and can bioaccumulate up the food chain to high levels in fish; this compounds the exposure cats get from fabrics and dust.

Predatory fish at the top of the food chain, such as tuna and salmon, may contain very elevated levels of heavy metals (including mercury) as well as PCBs, pesticides, and other toxins. Tilefish (listed on pet food labels as 'ocean whitefish') are among the worst contaminated, along with king mackerel, shark, and swordfish.

These fish are so toxic that the FDA advises women of child-bearing age and children to avoid them entirely; and recommends only 1 serving of albacore tuna per week due to its high mercury levels (yellow or 'light' tuna is far safer for us, but still inappropriate for cats). If these fish are dangerous to children, cats are at even higher risk!

PCBs (polychlorinated biphenyls) in particular are toxic industrial chemicals that were banned in the U.S. in 1979. However, they are used elsewhere in the world; and because they are stable in the environment, they are still a concern in ocean waters.

Recent research found high levels of PCBs in dry and canned pet foods. Scientists also found that cats retain PCB metabolites in their blood longer than dogs."⁵

Preventing Hyperthyroidism in Feline Family Members

As Dr. Hofve mentions above, feline hyperthyroidism has reached epidemic levels in our cat population. Steps you can take to help your kitty avoid the disease include:

- Ridding your environment of flame retardant chemicals
- Providing an organic pet bed
- Feeding a nutritionally balanced, fresh, species-appropriate diet to control iodine levels in your cat's food, since iodine has also been linked to hyperthyroidism
- Avoid feeding your cat a fish-based diet, since seafood is a very rich source of iodine, and cats aren't designed to process a lot of iodine
- Avoid feeding soy products to your kitty, as they have also been linked to thyroid damage

Sources and References

[Stockholm University](#)

[Consumer Affairs February 27, 2017](#)

¹ [Environmental Science & Technology, 2017, 51\(5\), pp.3012-3020](#)

² [Medical News Today, February 27, 2017](#)

³ [MISSE \(Archived\)](#)

⁴ [Environmental Science & Technology, 2016, 50\(1\), pp.444-452](#)

⁵ [Little Big Cat December 13, 2016](#)
