

# Protect Children, Fire Fighters, and the Great Lakes Limit Toxic Flame-Retardants Support HB 4465!



Michigan Network for  
**CHILDREN'S**  
**Environmental**  
**HEALTH**

*Fighting fires does not have to have toxic consequences. PBDEs, flame-retardants that are rapidly accumulating in our bodies and the Great Lakes, have been found to be toxic to animals and may threaten our own health. Safe, affordable alternatives are available.*

## ARE TOXIC FLAME-RETARDANTS THE NEXT PCBs?

- PBDEs – polybrominated diphenyl ethers, commonly used as flame-retardants – are added to textiles, foam products, and plastics to make them difficult to burn.<sup>1,2</sup> There are three commercial forms of PBDEs: penta-BDE, octa-BDE, and deca-BDE. Deca-BDE is often added to drapes, carpets, furniture upholstery, and the plastic casings of electronics.<sup>3,4</sup>
- In 2004, the **Michigan Legislature banned** manufacturing, processing and distribution of materials containing more than 0.1% **penta-BDE and octa-BDE**, respectively.<sup>5</sup> However, under certain circumstances, **deca can break down into more toxic forms of PBDEs**, including the banned octa-BDE.<sup>6,7,8,9,10</sup>
- Deca continues to be used heavily in the United States. Over 40% of all deca produced worldwide is used in North America.<sup>11</sup>
- PBDEs are **structurally very similar to PCBs**, chemicals once favored by industry but ultimately banned in the 1970s because of their high toxicity. Like PCBs, PBDEs are **extremely persistent in the environment** and can accumulate in the fatty tissues of living organisms.<sup>12</sup>

## TOXIC LEVELS ARE RISING

- PBDE levels “in human tissues in North America have **increased significantly over time**, and are much higher compared to levels in Europe or Japan.”<sup>13</sup>
- Limited studies indicate that **children accumulate higher levels of PBDEs than adults**.<sup>14</sup>
- Lake Michigan salmon were found to contain PBDEs at levels above 100 parts per billion,

**“one of the world’s highest concentrations for salmon in open water.”**<sup>15</sup> PBDE levels in Great Lakes walleye and lake trout **rose exponentially from 1980 to 2000, doubling every 3-4 years**.<sup>16</sup>

- Workers who recycle, repair, and maintain computers have comparatively high levels of PBDEs.<sup>17</sup>
- In the U.S., PBDEs have been **found in the breast milk of women** at levels 10 to 100 times higher than those found in Europe.<sup>18,19</sup>

## HEALTH IMPACTS

- Learning and Memory: Exposure to deca-BDE in mice and rats during brain development “can give rise to **irreversible changes in adult brain function**.”<sup>20</sup>
- Reproductive: Rats exposed to PBDEs experienced a **delayed onset of puberty** and reproductive development.<sup>21</sup>
- Cancer: Rodents who ate deca-BDE developed **liver tumors**, causing the U.S. Environmental Protection Agency to classify deca as a “possible human carcinogen.”<sup>22</sup>
- Thyroid: PBDEs can disrupt homeostatic thyroid levels in mice.<sup>23</sup> Decreased concentrations of the thyroid hormone can lead to **decreased IQ** in offspring.<sup>24</sup>

## FIRE FIGHTERS SUPPORT BANNING PBDEs

- The **Michigan Professional Fire Fighters Union endorsed** HB 4465 to help protect fire fighters from deca-BDE.<sup>25</sup>
- The **Michigan Association of Fire Chiefs supports** HB 4465 because deca and other PBDEs “have been identified as having adverse

physiological and development impacts on humans”, “there are readily available substitute products that do not exhibit these effects”, and “when PBDE compounds are exposed to fire they burn and release dense fumes and a highly corrosive gas known as hydrogen bromide which expose firefighters to additional chemical hazards.”<sup>26</sup>

- **The International Association of Fire Fighters (IAFF) supports** legislation banning deca-BDE as “a step in the right direction for improving the health and safety of our fire fighters. IAFF states: “Many studies involving fire fighters exposed to these and other toxic gases during active fire fighting, overhaul, and long term exposure from these chemicals penetrating gear, have found that **fire fighters have a much greater risk of contracting cancer, heart and lung disease**, and other debilitating diseases. While we support the concept of flame retardant chemicals, **there are alternatives that do not contain bromine or chlorine and are much safer for fire fighters than PBDEs.**”<sup>27</sup>

### SAFER ALTERNATIVES ARE WIDELY USED

- Many **electronics companies already or will soon meet fire safety standards without using deca-BDE** including Dell, HP, Toshiba, Apple, Sony, Panasonic, Phillips, and Samsung.<sup>28</sup>
- Mattress companies Sealy, Simmons, and Serta do not use deca-BDE in their products. IKEA sells only PBDE-free office furniture.<sup>29</sup>
- **Michigan-based La-Z-Boy Incorporated<sup>30</sup> and Steelcase Furniture<sup>31</sup> do not use deca-BDE in their products.**
- **Michigan-based Herman Miller states that deca-BDE is an “unhealthy/dangerous fire retardant chemical and one that is definitely not used in our product offering.”** Their reasoning includes that deca-BDE “has been traced in animals like polar bears, fish” and “has appeared in mother’s breast milk.”<sup>32</sup>

### BANS GAINING MOMENTUM

- Michigan and nine other states already regulate the use of penta-BDE and octa-BDE.<sup>33</sup>

Industries voluntarily withdrew the manufacture of penta-BDE by 2005 because of evidence that the chemical may be toxic and traces were found in breast milk.<sup>34</sup>

- Washington State and Maine recently banned deca for many uses.<sup>35</sup>
- The **Michigan Interdepartmental Toxics Steering Group recommends “legislation banning Deca-BDE...contingent on the availability of a safe alternative.”**<sup>36</sup>

### Organizations that support HB 4465 (partial list):

Michigan Professional Fire Fighters Union  
Michigan Association of Fire Chiefs  
American Academy of Pediatrics (Michigan Chapter)  
Arab Community Center for Economic and Social Services (ACCESS)  
Association for Children’s Mental Health  
Clean Water Action  
Clean Water Fund  
Clinton County Family Resource Center  
Detroitters Working for Environmental Justice  
East Michigan Environmental Action Council (EMEAC)  
Ecology Center  
Environment Michigan  
Healthy Homes Coalition of West Michigan  
Learning Disabilities Association of Michigan  
Local Motion  
Michigan Coalition for Children and Families  
Michigan Council for Maternal and Child Health  
Michigan Environmental Council  
Michigan Nurses Association  
Science and Environmental Health Network

### National Organizations that support restricting or banning PBDEs (partial list):

American Academy of Pediatrics (Leadership Forum)  
American Public Health Association  
Breast Cancer Fund  
International Association of Fire Fighters

# MICHIGAN LEGISLATORS CAN PROTECT CHILDREN, FIRE FIGHTERS AND OUR GREAT LAKES FROM DECA-BDE!

Support HB 4465 to phase out deca-BDE in mattresses and residential furniture by 2009 and in televisions and computers by 2012.<sup>37</sup>

Emphasis added by the Michigan Network for Children's Environmental Health.

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**Network Members:**

American Academy of Pediatrics (Michigan Chapter) • Arab Community Center for Economic and Social Services (ACCESS) • Association for Children's Mental Health • Autism Society of Michigan • Citizens for Alternatives to Chemical Contamination • Clean Water Fund • Clinton County Family Resource Center • Detroiters Working for Environmental Justice • East Michigan Environmental Action Council • Ecology Center • Healthy Homes Coalition of West Michigan • Learning Disabilities Association (LDA) of Michigan • Local Motion • Michigan Coalition for Children and Families • Michigan Council for Maternal and Child Health • Michigan Environmental Council • Michigan League of Conservation Voters Education Fund • Michigan Nurses Association • Science and Environmental Health Network • Voices for Earth Justice.

The Michigan Network for Children's Environmental Health is a coalition of health professionals, health-affected groups, environmental organizations, and others dedicated to a safe and less toxic world for Michigan's children. Through education, outreach, and advocacy, we seek to protect Michigan's children from adverse impacts caused by exposure to widespread hazardous chemicals.

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