



### **CAS 84852-53-9 - Decabromodiphenyl ethane (DBDPE)**

#### **Toxicity**

Based on the toxicity of a closely related structural analog, the EPA considers DBDPE a high hazard for developmental and neurotoxicity.<sup>1</sup>

Animal studies have shown disruption of the endocrine system and vascular and cardiac toxicity in rodents treated with DBDPE.<sup>2-5</sup> Recent studies reported changes in thyroid hormone levels indicating disrupted thyroid homeostasis, and damage to the thyroid gland in rats fed DBDPE.<sup>2-5</sup> DBDPE treatment in rats caused heart and abdominal aorta morphological and ultrastructural damage as well as endothelial dysfunction.<sup>6</sup>

#### **Exposure**

The EPA has characterized DBDPE to have a very high potential for environmental persistence evidenced by biodegradation study results.<sup>1</sup> DBDPE has been characterized by the EPA to have high potential for bioaccumulation based on monitoring data.<sup>1</sup> DBDPE has been shown to bioaccumulate in liver, kidney, and adipose tissue in rodents.<sup>2</sup>

DBDPE is a high production volume chemical<sup>7</sup> used in electrical and automotive materials, as well as textiles and fabrics as an additive flame retardant.<sup>1</sup>

In 2013, a third of baby formula and a fourth of baby cereal samples collected contained DBDPE in a U.S. study.<sup>8</sup> The Washington Department of Ecology detected DBDPE in consumer products including plastics, padding, stuffing and foam.<sup>9</sup> A study detected DBDPE in rubber, hard and soft plastic, foam, and stuffed children's products for sale in China.<sup>10</sup>

DBDPE has been detected throughout the environment in wildlife, house dust, and indoor and outdoor air.<sup>11-18</sup>

In 2015, the California Biomonitoring program added DBDPE as a priority chemical.<sup>19</sup> In a 2008-2009 Canadian study, DBDPE was detected in maternal blood serum and breast milk.<sup>17</sup> DBDPE has also been detected in hair and umbilical cord blood.<sup>20,21</sup>

## Other

DBDPE is often used as a replacement for the flame retardant decaBDE.<sup>1,2,12</sup>

## References

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