

## lambda-Cyhalothrin

**Hazard to children:**

acute poisoning, impaired learning, endocrine and immune effects: later in life: breast cancer, male reproductive problems



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**Uses:** synthetic pyrethroid insecticide; mixture of lambda- (LC) and gamma-cyhalothrin (GC). LC is most used; in farming, public health, household, bed nets.

**Residues:** in breast milk, house dust,<sup>1</sup> food.

**Acute toxicity:** highly toxic neurotoxin. Symptoms include itching, tingling, burning, prickling sensation of skin especially face; dizziness, headache, nausea, anorexia, fatigue, respiratory irritation;<sup>2</sup> tremors, convulsions,<sup>3</sup> coma,<sup>2</sup> death.<sup>4</sup> Large number of poisonings in US, with dermal, neurological, gastrointestinal and respiratory symptoms of 'low to moderate severity', and at least 2 deaths;<sup>4</sup> common cause of poisoning in Tanzania.<sup>5</sup>

**Chronic toxicity:** damages liver, kidney, lungs, heart, spleen (animals).<sup>6,7,8</sup>

**Neurological:** impaired learning (rats);<sup>9,10</sup> Parkinson's disease-associated changes in brain (rats).<sup>10</sup>

**Cancer:** mammary tumours in rats; associated with malignant mammary tumours in dogs;<sup>11</sup> promotes MCF-7 human breast cancer cell

proliferation;<sup>12</sup> breast cancer risk.

**Genotoxicity:** genotoxic in animal<sup>13-15</sup> and human cells.<sup>16</sup>

**Endocrine disruption:** oestrogenic;<sup>17,18</sup> antiandrogenic;<sup>19</sup> decreases testosterone (rabbits);<sup>20</sup> inhibits thyroid hormones (rats).<sup>21</sup>

**Reproduction:** male reproductive toxin; decreases semen quality, weight of testes and epididymis (rabbits);<sup>20</sup> sperm abnormalities, reduced sperm count and motility (rats);<sup>8,22</sup> blocks spermatogenesis, damages seminiferous tubules.<sup>23</sup>

**Immune:** immunotoxic;<sup>18</sup> suppresses immune system.<sup>24,25</sup>

**Environmental effects:** *Aquatic:* very high acute and chronic toxicity to aquatic organisms;<sup>3</sup> fish and aquatic invertebrate kills;<sup>4</sup> used to poison wildlife in Kenya.<sup>26</sup>

*Terrestrial:* highly toxic to bees and beneficial insects.<sup>3</sup>

**Environmental fate:** Moderately persistent in soil;<sup>3</sup> found in surface water<sup>4,27</sup> and air.<sup>28</sup> Bioaccumulates in fish.<sup>3</sup>

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