**Uses:** organophosphate insecticide

**Bans:** Yemen

**Residues:** widespread contamination of food, environment, and in breast milk, cord blood, newborn infants meconium (first faeces)

**Acute toxicity:** neurotoxic: depressed motor function and respiration; headaches, seizures, coma, death. Poisonings have occurred in many countries, including India, Iran, Nepal, Sri Lanka, Taiwan.

**Chronic toxicity:**
- **Neurological:** potent developmental neurotoxin at low levels of exposure, causing delayed cognitive and motor development, reduced IQ, attention-deficit/hyperactivity disorder (ADHD), pervasive developmental disorder, smaller head circumference, and altered brain structure, long-term consequences for social adjustment and academic achievement.
- **Cancer:** associated with lung, rectal, breast and prostate cancer.
- **Genotoxicity:** mutagenic or genotoxic in human and animal cells.
- **Endocrine disruption:** inhibits testosterone synthesis and metabolism of testosterone and oestradiol; affects thyroid hormones.

**Reproduction:** causes birth defects in animals and humans.

**Immune:** toxic to immune system.

**Metabolic:** early life exposure may predispose a person to obesity, diabetes, and cardiovascular problems.

**Environmental effects:**
- **Aquatic:** very toxic to fish, amphibia, aquatic invertebrates; causes endocrine disruption, behavioural changes, deformities, mutagenicity. Can accumulate in areas of intense biological activity; poses long-term threat to aquatic community structure.
- **Terrestrial:** very toxic to birds. Extremely toxic to bees and beneficial insects; inhibits soil microbial functional diversity and nitrogen mineralisation; incompatible with IPM.

**Resistance:** reported for at least 65 pest species in 47 countries.

**Further information and references:** see PANAP’s Chlorpyrifos Factsheet and Monograph