

# Chemical Factsheet

## Parathion/Ethyl parathion

### General Information

- Fact Sheet: [parathion.pdf](#)
- Product Names:
  - AC 3422**
  - Alkron** (Tronox)
  - Alleron**
  - Aphamite**
  - Corothion**
  - E-605**
  - ENT 15108**
  - Ethyl parathion**
  - Etilon**
  - Fosferno 50**
  - Niran**
  - Orthophos** (Ortho Business Group)
  - Panthion**
  - Paramar**
  - Paraphos**
  - Parathene**
  - Parawet**
  - Phoskil**
  - Rhodiatox**
  - Soprathion**
  - Stathion**
  - Thiophos**
  - Danthion**
  - DNTP**
  - DPP**
  - Sulphos**
  - Kolodust** (FMC), formulated with [Sulfur](#)
  - Prentox Ethyl Parathion** (Prentiss), formulated with Xylene
  - Red Panther Parathion** (Universal Cooperatives)
- Chemical Class: Organophosphate insecticide
- Uses: alfalfa, barley, canola, corn, cotton, sorghum, soybeans, sunflowers, and wheat.
- Alternatives: [Organic agriculture](#)
- Beyond Pesticides rating: [Toxic](#)

### Health and Environmental Effects

*See citations at end of document.*

- Cancer: Possible (1)
- Endocrine Disruption: Probable (2)
- Reproductive Effects: Yes (3)

- Neurotoxicity: Yes (4)
- Kidney/Liver Damage: Not documented
- Sensitizer/ Irritant: Not documented
- Birth/Developmental: Not documented
- Detected in Groundwater: Not documented
- Potential Leacher: Not documented
- Toxic to Birds: Yes (3)
- Toxic to Fish/Aquatic Organisms: Yes (3)
- Toxic to Bees: Yes (5)

## Additional Information

- Regulatory Status:
  - All uses [cancelled](#) (effective 10/2003)
- Supporting information:
  - [Extoxnet Parathion Factsheet](#) (Extension Toxicology Network)
  - [PAN Pesticides Database:Parathion](#) (Pesticide Action Network)
  - [ABC Parathion Factsheet](#) (American Bird Conservancy)
- Studies [compiled from the [Pesticide-Induced Diseases Database](#)]
  - [Children's Exposure to Chlorpyrifos and Parathion in an Agricultural Community in Central Washington State](#). Fenske, R.A., Lu, C, Barr, D, and Needham, L. 2002. Environ Health Perspect. 11(5):: 549-553
  - [Diazinon and parathion diverge in their effects on development of noradrenergic systems](#). Slotkin TA, Skavicus S, Seidler FJ. 2017. Brain Res Bull. 130:268-273.
  - [Does early-life exposure to organophosphate insecticides lead to prediabetes and obesity](#). Slotkin, T.A. 2011. Reproductive Toxicology. 31: 297-301.
  - [Breast carcinogenesis induced by organophosphorous pesticides](#). Calaf, G.M., 2022. Advances in Pharmacology (San Diego, Calif.), 96, pp.71-117.
  - [Pesticide use and inflammatory bowel disease in licensed pesticide applicators and spouses in the Agricultural Health Study](#). Chen, D. et al. (2024) Pesticide use and inflammatory bowel disease in licensed pesticide applicators and spouses in the Agricultural Health Study, Environmental Research. Available at: [https://www.sciencedirect.com/science/article/pii/S0013935124003682?ref=pdf\\_download&fr=RR-2&rr=88272c5c9b94942f](https://www.sciencedirect.com/science/article/pii/S0013935124003682?ref=pdf_download&fr=RR-2&rr=88272c5c9b94942f).
  - [Chronic kidney disease from agricultural communities—association and accumulation of hexachlorobenzene, malathion, and parathion pesticides](#). Verma, J. et al. (2024) Chronic kidney disease from agricultural communities-association and accumulation of hexachlorobenzene, malathion, and parathion pesticides, Toxicology and Environmental Health Sciences. Available at: <https://link.springer.com/article/10.1007/s13530-024-00222-y>.
  - [High Pesticide Exposure Events and Dream-Enacting Behaviors Among US Farmers](#). Yuan, Y., Shrestha, S., Luo, Z., Li, C., Plassman, B.L., Parks, C.G., Hofmann, J.N., Beane Freeman, L.E., Sandler, D.P. and Chen, H. (2022), High Pesticide Exposure Events and Dream-Enacting Behaviors Among US Farmers. Mov Disord, 37: 962-971. <https://doi.org/10.1002/mds.28960>
  - [Association of organophosphate and pyrethroid pesticide metabolites and phenoxyacid herbicides with blood pressure and hypertension among older adults](#). Huang, Qinxin & Song, Shaofang & Deng, Fenfang & He, Jia & Yuan, Jun & Tan, Lei. (2025). Association of organophosphate and pyrethroid pesticide metabolites and phenoxyacid herbicides with blood pressure and hypertension among older adults. Environmental Chemistry and Ecotoxicology. 7. 10.1016/j.enceco.2025.05.017.

- [An assessment of exposure to several classes of pesticides in pet dogs and cats from New York, United States](#). Li, Z. M., Robinson, M., & Kannan, K. (2022). An assessment of exposure to several classes of pesticides in pet dogs and cats from New York, United States. *Environment international*, 169, 107526. <https://doi.org/10.1016/j.envint.2022.107526>
- [Mapping pesticide-induced metabolic alterations in human gut bacteria](#). Chen, L. et al. (2025) Mapping pesticide-induced metabolic alterations in human gut bacteria, *Nature Communications*. Available at: <https://www.nature.com/articles/s41467-025-59747-6>.
- [Pesticides in surface water of the Ondas river watershed, western Bahia, Brazil: Spatial-seasonal distribution and risk assessment](#). do Rego EL, de Souza JR, Nakamura TC, Portela JF, Diniz PHGD, da Silva JDS. Pesticides in surface water of the Ondas river watershed, western Bahia, Brazil: Spatial-seasonal distribution and risk assessment. *Chemosphere*. 2024 Apr;354:141659. doi: 10.1016/j.chemosphere.2024.141659. Epub 2024 Mar 13. PMID: 38490616.
- [Current-use pesticide exposures in remote Inuit communities](#). Aker, A. M. et al. (2024) 'Current-use pesticide exposures in remote Inuit communities', *International Journal of Circumpolar Health*, 83(1). doi: 10.1080/22423982.2024.2421048.
- [Urinary pesticide biomarkers from adolescence to young adulthood in an agricultural setting in Ecuador: Study of secondary exposure to pesticides among children, adolescents, and adults \(ESPINA\) 2016 and 2022 examination data](#). Parajuli, R. et al. (2025) Urinary pesticide biomarkers from adolescence to young adulthood in an agricultural setting in Ecuador: Study of secondary exposure to pesticides among children, adolescents, and adults (ESPINA) 2016 and 2022 examination data, *Data in Brief*. Available at: <https://www.sciencedirect.com/science/article/pii/S2352340925006067>.
- [Pre-conceptional and prenatal exposure to pesticides and pediatric neuroblastoma. A meta-analysis of nine studies](#). Khan, A., Feulefack, J., & Sergi, C. M. (2022). Pre-conceptional and prenatal exposure to pesticides and pediatric neuroblastoma. A meta-analysis of nine studies. *Environmental toxicology and pharmacology*, 90, 103790. <https://doi.org/10.1016/j.etap.2021.103790>
- [Parental Pesticide Exposure and Childhood Brain Cancer: A Systematic Review and Meta-Analysis Confirming the IARC/WHO Monographs on Some Organophosphate Insecticides and Herbicides](#). Feulefack, J., Khan, A., Forastiere, F., & Sergi, C. M. (2021). Parental Pesticide Exposure and Childhood Brain Cancer: A Systematic Review and Meta-Analysis Confirming the IARC/WHO Monographs on Some Organophosphate Insecticides and Herbicides. *Children (Basel, Switzerland)*, 8(12), 1096. <https://doi.org/10.3390/children8121096>

## Gateway Health and Environmental Effects Citations

1. EPA weight-of-evidence category, "possible human carcinogen." US EPA, 2004. Office of Pesticide Programs. List of Chemicals Evaluated for Carcinogenic Potential. July 29, 2004.

<http://www.epa.gov/pesticides/carlist/>

2. Illinois EPA, Endocrine Disruptors Strategy, February 1997.

<https://nepis.epa.gov/Exe/ZyNET.exe/910140ZK.txt>

3. Extension Toxicology Network (EXTOXNET) Pesticide Information Profiles.

<http://extoxnet.orst.edu/pips/ghindex.html>

4. Beyond Pesticides ChemWatch Factsheets. (Cited under factsheets on [Beyond Pesticides Gateway](#);

see top of individual chemical page)

5. Tew, J.E. 1996. Protecting Honeybees from Pesticides. Ohio State University Cooperative Extension.  
<http://web.archive.org/web/20031123075324/http://beelab.osu.edu/factsheets/sheets/2161.html>

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