Chemical Factsheet

Endosulfan

General Information

- Fact Sheet: endosulfan_final.pdf
- Product Names:
  Drexel endosulfan (Drexel Chemical Co.)
  Endalfly insecticide cattle ear tag (Kmg-bernuth Inc)
  Phaser (Bayer Cropsciences)
  Thionex technical insecticide (Makhteshim-agan)
  Thiodan (Makhteshim-agan)
- Chemical Class: Organochlorine
- Uses: Contact insecticide in vegetables, fruits, cereal grains, and cotton, as well as ornamental shrubs, trees, vines, and ornamentals for use in commercial agricultural settings.
- Alternatives: Organic agriculture
- Beyond Pesticides rating: Toxic

Health and Environmental Effects

See citations at end of document.

- Cancer: Not documented
- Endocrine Disruption: Yes (**1**)
- Reproductive Effects: Yes (**2**)
- Neurotoxicity: Yes (**2**)
- Kidney/Liver Damage: Yes (**3**)
- Sensitizer/ Irritant: Yes (**2**)
- Birth/Developmental: Yes (**4**)
- Detected in Groundwater: Yes (**2**)
- Potential Leacher: Not documented
- Toxic to Birds: Yes (**5**)
- Toxic to Fish/Aquatic Organisms: Yes (**5**)
- Toxic to Bees: Yes (**6**)

Residential Uses as Found in the ManageSafe™ Database

- Tree-boring Caterpillars

Additional Information

- Regulatory Status:
  - EPA Reregistration Eligibility Decision (RED) signed (11/2002)
  - Lawsuit filed by Pesticide Action Network, Beyond Pesticides, NRDC, UFW et. al (7/2008)
  - Scientists' call to ban endosulfan (5/2008)
  - EPA Announces Move to Terminate Use of Endosulfan (6/2010)
- Supporting information:
  - Daily News Blog entries (Beyond Pesticides)

    - Extoxnet Endosulfan Factsheet (Extension Toxicology Network)
    - PAN Pesticides Database:Endosulfan (Pesticide Action Network)
    - PAN Endosulfan Program Page (Pesticide Action Network)
- Studies [compiled from the Pesticide-Induced Diseases Database]
    - Developmental exposure to pesticides zineb and/or endosulfan renders the nigrostriatal dopamine system more susceptible to these environmental chemicals later in life.. Jia, Z., et al. 2007. Neurotoxicology 28(4):727-735
    - Developmental exposure to the organochlorine insecticide endosulfan damages the nigrostriatal dopamine system in male offspring.. Wilson WW, Shapiro LP, et al. 2014. Neurotoxicology. 44:279-87
    - Developmental neurotoxic effects of two pesticides: Behavior and neuroprotein studies on endosulfan and cypermethrin.. Lee I, Eriksson P, et al. 2015. Toxicology. 335:1-10.
    - Effect of Endosulfan on Male Reproductive Development. Saiyed, H et al. 2003. Environ Health Perspect 111:1958-1962
    - Effects of a mixture of pesticides on the adult female reproductive system of Sprague-Dawley, Wistar, and Lewis rats. Pascotto VM, Guerra MT, Franci JA, et al. 2015. J Toxicol Environ Health A. 78(9):602-16
    - Human exposure and risk assessment to airborne pesticides in a rural French community.. Coscollà C, López A, Yahyaoui A, Colin P, et al. 2017. Sci Total Environ. 584-585:856-868
    - Incidence of organochlorine pesticides and the health condition of nestling ospreys (Pandion haliaetus) at Laguna San Ignacio, a pristine area of Baja California Sur, Mexico.. Rivera-Rodríguez LB, Rodríguez-Estrella R. 2011. Ecotoxicology.;20(1):29-38
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    - A pesticide and iPSC dopaminergic neuron screen identifies and classifies Parkinson-relevant pesticides. Paul, K.C., Krolewski, R.C., Lucumi Moreno, E., Blank, J., Holton, K.M., Ahfeldt, T., Furlong, M., Yu, Y., Cockburn, M., Thompson, L.K. and Kreymerman, A., 2023. Nature Communications, 14(1), p.2803.
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    - Influence of Pesticides Contamination on Microbial Population of Selected Farmlands. Uneze, D.P., Kugbenu, G.J. and Obire, O. (2024) Influence of pesticides contamination on microbial population of selected farmlands, British Journal of Environmental Sciences. Available at: https://eajournals.org/bjes/vol12-issue-5-2024/influence-of-pesticides-contamination-on-microbial-population-of-selected-farmlands/.
    - Thyroid under Attack: The Adverse Impact of Plasticizers, Pesticides, and PFASs on Thyroid Function. Rodrigues, V.G. et al. (2024) Thyroid under Attack: The Adverse Impact of Plasticizers, Pesticides, and PFASs on Thyroid Function, Endocrines. Available at: https://www.mdpi.com/2673-396X/5/3/32.
    - Perinatal exposure to pesticides alters synaptic plasticity signaling and induces behavioral deficits associated with neurodevelopmental disorders. López-Merino, E., Cuartero, M.I., Esteban, J.A. et al. Perinatal exposure to pesticides alters synaptic plasticity signaling and induces behavioral deficits associated with neurodevelopmental disorders. Cell Biol Toxicol 39, 2089–2111 (2023). https://doi.org/10.1007/s10565-022-09697-2

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