Chemical Factsheet

Permethrin

General Information

- Fact Sheets: permethrin.pdf, Synthetic Pyrethroids.pdf
- Product Names:
  Ambush (Gowan)
  Ambush (Amvac Chemical)
  Dragnet (FMC)
  Pounce (FMC)
  Pramex (Valent Biosciences), formulated with Piperonly butoxide (some formulations)
  Assault II (ABC Compounding)
  Atroban (Schering-Plough Animal Health Corporation), forumulated with Piperonyl butoxide (some formulations)
  Champion (Chase Products), formulated with Piperonyl butoxide, Tetramethrin (some formulations)
  Chemi-cap (Chemical Packaging), formulated with Piperonyl butoxide, and Pyrethrins
  Evercide (McLaughlin Gormley King), formulated with N-octyl bicycloheptene dicarboximide, D-trans Allethrin, Pyrethrins, Tetramethrin, Piperonyl butoxide (some formulations)
  Unicorn (Phaeton Corporation)
  Sergeant's (Sergeant's Pet Care Products), formulated with Pyrethrins, Piperonyl butoxide, Pyriproxyfen, N-octyl bicycloheptene dicarboximide (some formulations)
  Raid (S.C. Johnson & Son), formulated with D-Allethrin, Tetramethrin, Piperonyl butoxide, Pyrethrins, N-octyl bicycloheptene dicarboximide, Fenoxycarb(some formulations)
  Misty (Amrep), formulated with Piperonyl butoxide, Tetramethrin, Pyrethrins, N-octyl bicycloheptene dicarboximide (some formulations)
- Chemical Class: Synthetic pyrethroid insecticide
- Uses: Food/feed crops, livestock and livestock housing, modes of transportation, structures, buildings (including food handling establishments), public health mosquito abatement programs, residential use sites including use in outdoor and indoor spaces, pets, and clothing (impregnated and ready to use formulations).
- Alternatives: Organic agriculture, Least-toxic insect control, Least-toxic mosquito control
- Beyond Pesticides rating: Toxic

Health and Environmental Effects

See citations at end of document.

- Cancer: Yes (**1**, **2**)
- Endocrine Disruption: Yes (**3**, **2**)
- Reproductive Effects: Yes (**4**)
- Neurotoxicity: Yes (**5**)
- Kidney/Liver Damage: Yes (**5**)
- Sensitizer/ Irritant: Yes (**6**)
- Birth/Developmental: Not documented
- Detected in Groundwater: Yes (**7**)
- Potential Leacher: Not documented

- Toxic to Birds: Not documented
- Toxic to Fish/Aquatic Organisms: Yes (**8**)
- Toxic to Bees: Yes (**8**, **2**)

Residential Uses as Found in the ManageSafe™ Database

- Ants
- Bagworms
- Carpenter Bees
- Tree-boring Caterpillars
- Chiggers
- Cockroaches
- Fleas
- Wasps and Yellowjackets
- Ticks
- Termites
- Head Lice
- Bed Bugs
- Chinch Bugs
- Gypsy Moths
- Hemlock Woolly Adelgid
- Mosquitoes
- Spiders
- Carpenter Ants
- Carpet Beetle
- Grubs
- Thrips
- Aphids
- Fire Ants

Additional Information

- Regulatory Status:
  - Beyond Pesticides' Draft Human Health Risk Assesment for Permethrin commments (11/2017)
  - Beyond Pesticides' EPA Human Health and Ecological Risk Assessment Draft for Several Pyrethroid insecticides comments (01/2017)
  - Permethrin Registration Review (2017)
  - EPA Reregistration Eligibility Decision (RED) revised (5/2009)
  - Beyond Pesticides' RED comments (2006)
- Supporting information:
  - NCAP Permethrin Factsheet (Northwest Coalition for Alternatives to Pesticides)
  - PAN Pesticides Database: Permethrin (Pesticide Action Network)
- Studies [compiled from the Pesticide-Induced Diseases Database]
  - Behavioural disorders in 6-year-old children and pyrethroid insecticide exposure: the PELAGIE mother–child cohort. Viel, JF, Rouget,F et al. 2017. Occup Environ Med. 74(4):275-281
  - Association of pyrethroid pesticide exposure with attention-deficit/hyperactivity disorder in a nationally representative sample of U.S. children. Wagner-Schuman M, Richardson JR, Auinger P, et al. 2015. Environ Health.14:44.
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- Evidence for diazinon-mediated inhibition of cis-permethrin metabolism and its effects on reproductive toxicity in adult male mice.. Wang D, Kamijima M, Okamura A, et al. 2012. Reprod Toxicol. 34(4):489-97
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- Occurrence of pesticide residues in indoor dust of farmworker households across Europe and Argentina.. Navarro, I., de la Torre, A., Sanz, P., Baldi, I., Harkes, P., Huerta-Lwanga, E., Nørgaard, T., Glavan, M., Pasković, I., Pasković, M.P. and Abrantes, N., 2023. Science of The Total Environment, p.167797.
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Gateway Health and Environmental Effects Citations

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2. Pesticide Action Network Pesticide Database. http://www.pesticideinfo.org/Search_Chemicals.jsp.

3. Illinois EPA, Endocrine Disruptors Strategy, February 1997. https://nepis.epa.gov/Exe/ZyNET.exe/910140ZK.txt

4. Frazier, L. and M.L. Hage. 2001. Reproductive Hazards of the Workplace. Europe: Wiley. Table 10: Partial List of Reproductive Toxins. https://web.archive.org/web/20100624221623/http://www.biosci.osu.edu/safety/CHP/Tables2001/Table10-11-00.pdf.

5. US EPA, 2000. Table 1: Toxicity Data by Category for Chemicals Listed under EPCRA Section 313. Toxic Release Inventory (TRI) Program.

https://www.epa.gov/sites/production/files/documents/hazard_categories.pdf

6. Extension Toxicology Network (EXTOXNET) Pesticide Information Profiles. http://extoxnet.orst.edu/pips/ghindex.html

7. Beyond Pesticides ChemWatch Factsheets. (Cited under factsheets on Beyond Pesticides Gateway; see top of individual chemical page)

8. US EPA, Office of Prevention, Pesticides and Toxic Substances, Reregistration Eligibility Decisions (REDs), Interim REDS (iREDs) and RED Factsheets. https://archive.epa.gov/pesticides/reregistration/web/html/status.html.

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