

Chemical Factsheet

Bifenthrin

General Information

- Fact Sheet: [Synthetic Pyrethroids.pdf](#)
- Product Names:
 - Dexol Lawn Insecticide** (Value Gardens Supply)
 - Bifen Nursery Insecticide Granules** (Value Gardens Supply)
 - Bifen XTS** (Control Solutions, Inc.)
 - Menace** (Nufarm)
 - Ortho Home Defense Indoor/Outdoor Insect Killer** (The Scotts Co)
 - Rosepride Rose & Flower Insect Killer** (The Scotts Co.)
 - Ortho Fire Ant Killer** (The Scotts Co)
 - Ortho Home Defense Max Wasp & Hornet Killer** (The Scotts Co)
 - Ortho Bug B Gon** (The Scotts Co)
 - Talstar** (FMC Corp)
 - Capture** (FMC Corp)
 - Biflex** (FMC Corp)
 - Double Threat Insecticide** (FMC Corp)
 - Hero Insecticide** (FMC Corp)
 - Triple Crown** (FMC Corp)
 - Brigadier Insecticide** (FMC Corp)
 - Allectus** (Bayer)
 - Whitmire Total release Insecticide** (BASF)
 - Turf Builder with Fire Ant-X** (The Scotts Co)
 - Southernmax** (The Scotts Co)
 - Scotts Turf Fertilizer with Ortho Max Pro** (The Scotts Co)
 - Southern Preen Plus** (Lebanon Seaboard Corp)
 - MGK** (McLaughlin Gormley King Co)
 - Tundra** (Winfield Solutions)
 - Sergeants Bifenthrin Shampoo for Dogs** (Sergeant's Pet Care Products)
 - Discipline** (AMVAC Chemical Corp)
 - Wisdom** (AMVAC Chemical Corp)
 - SmartChoice** (AMVAC Chemical Corp)
 - Empower Granular Insecticide** (Helena Chemical Corp)
 - Pro-Mate Bifenthrin plus Fertilizer** (Helena Chemical Corp)
 - The Andersons Fertilizer Bait Granules** (The Andersons Lawn Fertilizer Division)
 - Chemsico Fire Ant Killer** (Chemsico)
 - Crosscheck Insecticide** (Lesco Inc)
 - Sniper** (Loveland Products Inc)
 - Bisect** (Loveland Products Inc)
 - Swagger** (Loveland Products Inc)
 - Turf Pride Fertilizer** (Howard Fertilizer & Chemical Co)
 - CRC Fire Ant Killer Granules** (CRC Industries Inc)
 - Fanfare** (Makhteshim Agan)
 - Mana** (Makhteshim Agan)

Aloft (Arysta LifeScience)
Up-Star (United Phosphorus Inc)
Firebird Pro (United Phosphorus Inc)
Maxxthor (Ensystem II)
Wet & Forget Bug Killer (Wet & Forget USA Ltd)
Reclaim (Inova Chemicals)
Kylix Lawn Care (Syntelus)

- Chemical Class: Pyrethroid insecticide
- Uses: Agricultural and nonagricultural and residential sites including corn, cotton, soybeans, fruit, vegetables, herbs, nuts, ornamentals, Christmas trees, conifers, golf courses, lawns, rights of ways, wood treatment, food handling sites.
- Alternatives: [Organic agriculture](#), [Organic Christmas trees](#)
- Beyond Pesticides rating: [Toxic](#)

Health and Environmental Effects

See citations at end of document.

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

Residential Uses as Found in the ManageSafe™ Database

- [Bagworms](#)
- [Carpenter Bees](#)
- [Tree-boring Caterpillars](#)
- [Termites](#)
- [Ants](#)
- [Bed Bugs](#)
- [Chiggers](#)
- [Chinch Bugs](#)
- [Fleas](#)
- [Grubs](#)
- [Gypsy Moths](#)
- [Hemlock Woolly Adelgid](#)
- [Carpenter Ants](#)
- [Carpet Beetle](#)
- [Centipedes](#)
- [Spiders](#)
- [Ticks](#)
- [Wasps and Yellowjackets](#)
- [Clover](#)

- [Thrips](#)
- [Fire Ants](#)

Additional Information

- Regulatory Status:
 - [EPA Regulatory Documents](#)
 - [Beyond Pesticides' Comments December 2024](#)
- Supporting information:
 - [Daily News Blog entries](#) (Beyond Pesticides)
 - [Asthma, Children and Pesticides](#) (Beyond Pesticides)
 - [Exttoxnet Bifenthrin Factsheet](#) (Extension Toxicology Network)
 - [PAN Pesticides Database: Bifenthrin](#) (Pesticide Action Network)
 - [Bifenthrin General Factsheet](#) (NPIC)
- Studies [compiled from the [Pesticide-Induced Diseases Database](#)]
 - [Temporal and spatial trends in sediment contaminants associated with toxicity in California watersheds.](#) (Siegler K, Phillips BM, et al. 2015. Environ Pollut 206:1-6.)
 - [Predicted transport of pyrethroid insecticides from an urban landscape to surface water.](#) (Jorgenson B, Fleishman E, et al.2013. Environ Toxicol Chem. 32(11):2469-77.)
 - [Early Life Exposure to Environmentally Relevant Levels of Endocrine Disruptors Drive Multigenerational and Transgenerational Epigenetic Changes in a Fish Model.](#) Major, K.M., DeCourten, B.M., Li, J., Britton, M., Settles, M.L., Mehinto, A.C., Connon, R.E. and Brander, S.M., 2020. Frontiers in Marine Science, 7, p.471.
 - [Bifenthrin-induced neurotoxicity in rats: involvement of oxidative stress.](#) Syed F, Awasthi KK, Chandravanshi LP, et al 2017. Toxicol Res (Camb). 7(1):48-58.
 - [Organic farming reduces pesticide load in a bird of prey.](#) Fuentes, E. et al. (2024) Organic farming reduces pesticide load in a bird of prey, Science of The Total Environment. Available at: <https://www.sciencedirect.com/science/article/pii/S0048969724029255>.
 - [Assessing the ecological impact of pesticides/herbicides on algal communities: A comprehensive review.](#) Narayanan, N. et al. (2024) Assessing the ecological impact of pesticides/herbicides on algal communities: A comprehensive review, Aquatic Toxicology. Available at: <https://www.sciencedirect.com/science/article/abs/pii/S0166445X24000225?via%3Dihub>.
 - [Advances and future prospects of pyrethroids: Toxicity and microbial degradation.](#) Singh, S. et al. (2022) Advances and future prospects of pyrethroids: Toxicity and microbial degradation, Science of The Total Environment. Available at: <https://www.sciencedirect.com/science/article/abs/pii/S0048969722016540>.
 - [Pesticides and prostate cancer incidence and mortality: An environment-wide association study.](#) Soerensen, S. et al. (2024) Pesticides and prostate cancer incidence and mortality: An environment-wide association study, Cancer. Available at: <https://acsjournals.onlinelibrary.wiley.com/doi/10.1002/cncr.35572>.
 - [Effect of subacute poisoning with bifenthrin on locomotor activity, memory retention, haematological, biochemical and histopathological parameters in mice.](#) Nieradko-Iwanicka B, Borzecki A, Jodlowska-Jedrych B. Effect of subacute poisoning with bifenthrin on locomotor activity, memory retention, haematological, biochemical and histopathological parameters in mice. J Physiol Pharmacol. 2015 Feb;66(1):129-37. PMID: 25716972.
 - [Impact of Endocrine Disrupting Pesticide Use on Obesity: A Systematic Review.](#) Pérez-Bermejo, M. et al. (2024) Impact of Endocrine Disrupting Pesticide Use on Obesity: A Systematic Review, Biomedicines. Available at: <https://www.mdpi.com/2227-9059/12/12/2677>.
 - [Assessing the Presence of Current-Use Pesticides in Mid-Elevation Sierra Nevada Streams](#)

- [Using Passive Samplers, California, 2018–19](#). De Parsia, M.D., Orlando, J.L., and Hladik, M.L., 2023, Assessing the presence of current-use pesticides in mid-elevation Sierra Nevada streams using passive samplers, California, 2018–19: U.S. Geological Survey Scientific Investigations Report 2022–5129, 31 p., <https://doi.org/10.3133/sir20225129>.
- [Lethal and sublethal effects of seven insecticides on three beneficial insects in laboratory assays and field trials](#). Fernandes, M. et al. (2016) Lethal and sublethal effects of seven insecticides on three beneficial insects in laboratory assays and field trials, *Chemosphere*. Available at: <https://www.sciencedirect.com/science/article/abs/pii/S0045653516306051>.
 - [Adverse Effects of Pesticides on the Ovary: Evidence from Epidemiological and Toxicological Studies](#). Wang, L., Ma, X. and Liu, J. (2025) Adverse Effects of Pesticides on the Ovary: Evidence from Epidemiological and Toxicological Studies, *Environment & Health*. Available at: <https://pubs.acs.org/doi/full/10.1021/envhealth.4c00243>.
 - [Occurrence of pyrethroids in the atmosphere of urban areas of Southeastern Brazil: Inhalation exposure and health risk assessment](#). Guida, Y., Pozo, K., Carvalho, G. O., Capella, R., Targino, A. C., Torres, J. P. M., & Meire, R. O. (2021). Occurrence of pyrethroids in the atmosphere of urban areas of Southeastern Brazil: Inhalation exposure and health risk assessment. *Environmental pollution (Barking, Essex : 1987)*, 290, 118020. <https://doi.org/10.1016/j.envpol.2021.118020>
 - [Characterizing pyrethroid and fipronil concentrations in biosolids](#). Wheeler, J., Black, G. P., Hladik, M. L., Sanders, C. J., Teerlink, J., Wong, L., Zhang, X., Budd, R., & Young, T. M. (2025). Characterizing pyrethroid and fipronil concentrations in biosolids. *The Science of the total environment*, 969, 178954. <https://doi.org/10.1016/j.scitotenv.2025.178954>
 - [Enantioselective endocrine-disrupting effects of bifenthrin on hormone synthesis in rat ovarian cells](#). Liu, J., Yang, Y., Zhuang, S., Yang, Y., Li, F., & Liu, W. (2011). Enantioselective endocrine-disrupting effects of bifenthrin on hormone synthesis in rat ovarian cells. *Toxicology*, 290(1), 42–49. <https://doi.org/10.1016/j.tox.2011.08.016>
 - [Disrupting effects of bifenthrin on ovulatory gene expression and prostaglandin synthesis in rat ovarian granulosa cells](#). Liu, J., Yang, Y., Yang, Y., Zhang, Y., & Liu, W. (2011). Disrupting effects of bifenthrin on ovulatory gene expression and prostaglandin synthesis in rat ovarian granulosa cells. *Toxicology*, 282(1-2), 47–55. <https://doi.org/10.1016/j.tox.2011.01.007>
 - [Currently used and legacy pesticides in the marine atmosphere from Patagonia to Europe](#). Debler, F., Gandrass, J., Paul Ramacher, M. O., Koenig, A. M., Zimmermann, S., & Joerss, H. (2025). Currently used and legacy pesticides in the marine atmosphere from Patagonia to Europe. *Environmental pollution (Barking, Essex : 1987)*, 373, 126175. Advance online publication. <https://doi.org/10.1016/j.envpol.2025.126175>
 - [Systematic assessments of ecological and health risks of soil pesticide residues](#). Tang, T. et al. (2025) Systematic assessments of ecological and health risks of soil pesticide residues, *Environmental Pollution*. Available at: <https://www.sciencedirect.com/science/article/abs/pii/S0269749125007213>.
 - [Pyrethroid insecticides implicated in mass mortality of monarch butterflies at an overwintering site in California](#). Cibotti, S. et al. (2025) Pyrethroid insecticides implicated in mass mortality of monarch butterflies at an overwintering site in California, *Environmental Toxicology and Chemistry*. Available at: <https://academic.oup.com/etc/advance-article-abstract/doi/10.1093/etjnl/vgaf163/8177160>.
 - [Pyrethroid Exposure Reduces Growth and Development of Monarch Butterfly \(Lepidoptera: Nymphalidae\) Caterpillars](#). Annie J Krueger, Kathryn Hanford, Thomas J Weissling, Ana M Vélez, Troy D Anderson, Pyrethroid Exposure Reduces Growth and Development of Monarch Butterfly (Lepidoptera: Nymphalidae) Caterpillars, *Journal of Insect Science*, Volume 21, Issue 2, March 2021, 2, <https://doi.org/10.1093/jisesa/ieaa149>

- [Global patterns of pesticide residues in seaweeds: A systematic review](#). Azevedo, G. et al. (2025) Global patterns of pesticide residues in seaweeds: A systematic review, Marine Pollution Bulletin. Available at: <https://www.sciencedirect.com/science/article/pii/S0025326X25011841>.
- [Insecticide Mixtures Could Enhance the Toxicity of Insecticides in a Resistant Dairy Population of *Musca domestica* L.](#) Khan HAA, Akram W, Shad SA, Lee JJ (2013) Insecticide Mixtures Could Enhance the Toxicity of Insecticides in a Resistant Dairy Population of *Musca domestica* L. PLOS ONE 8(4): e60929. <https://doi.org/10.1371/journal.pone.0060929>
- [Spatial and Temporal Distribution of Current-Use Pesticides in Atmospheric Particulate Matter in Houston, Texas.](#) Clark, A.E., Yoon, S., Sheesley, R.J. et al. Spatial and Temporal Distribution of Current-Use Pesticides in Atmospheric Particulate Matter in Houston, Texas. Bull Environ Contam Toxicol 97, 786–792 (2016). <https://doi.org/10.1007/s00128-016-1914-4>

Gateway Health and Environmental Effects Citations

1. 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>.
2. 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/>
3. European Commission. Endocrine Disruptors: Study on Gathering Information on 435 Substances with Insufficient Data. Final Report. EU DG Environment: B4-3040/2001/325850/MAR/C2. BKH Consulting Engineers: M0355037. November 2002. http://ec.europa.eu/environment/chemicals/endocrine/pdf/bkh_report.pdf#page=76.
4. Beyond Pesticides ChemWatch Factsheets. (Cited under factsheets on [Beyond Pesticides Gateway](#); see top of individual chemical page)
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. 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>

Factsheet generated on June 22, 2026