

Chemical Factsheet

Thiophanate-methyl

General Information

- Product Names:
 - Four Way Peanut Seed Treatment** (Bayer) formulated with [Captan](#), [Metalaxyl](#), and [Trifloxystrobin](#)
 - 26/36** (Bayer) formulated with [Iprodione](#)
 - Acronis** (BASF) formulated with [Pyraclostrobin](#)
 - Protocol** (Loveland) formulated with [Propiconazole](#)
 - Banrot** (Everris) formulated with [Terrazole](#)
 - Domain FL** (Everris)
 - T-Bird** (United Phosphorus)
 - Dovetail** (United Phosphorus) formulated with [Iprodione](#)
 - Transom** (Prokoz)
 - Topspin** (Nisso)
 - Fanate** (Nisso)
 - Akotop** (Aako)
 - Thiofan8** (Kaizen)
- Chemical Class: Thiophanate systemic fungicide
- Uses: Tree, vine, and root crops, wheat, and canola; residential lawns and ornamentals
- Alternatives: [Organic agriculture](#)
- Beyond Pesticides rating: [Toxic](#)

Health and Environmental Effects

See citations at end of document.

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

Additional Information

- Regulatory Status:
 - [EPA Reregistration Eligibility Decision \(RED\)](#) signed 10/2005
- Supporting information:
 - [PAN Pesticides Database: Thiophanate-methyl](#) (Pesticide Action Network)

- Studies [compiled from the [Pesticide-Induced Diseases Database](#)]
 - [Thiophanate-methyl induces severe hepatotoxicity in zebrafish](#). Jia, K. et al. (2020) Thiophanate-methyl induces severe hepatotoxicity in zebrafish, Chemosphere. Available at: <https://www.sciencedirect.com/science/article/abs/pii/S0045653520301338>.
 - [Thiophanate methyl acute, subacute and chronic toxicity in rats](#). Singh, T., Garg, B. and Verma, P. (1987) Thiophanate methyl acute, subacute and chronic toxicity in rats, Indian Journal of Pharmacology. Available at: https://journals.lww.com/iphr/citation/1987/19020/thiophanate_methyl_acute,_subacute_and_chronic.15.aspx.
 - [Methyl thiophanate-induced toxicity in liver and kidney of adult rats: a biochemical, molecular and histopathological approach](#). Feki, A., Ben Saad, H., Jaballi, I., Magne, C., Boudawara, O., Zeghal, K. M., Hakim, A., Ben Ali, Y., & Ben Amara, I. (2017). Methyl thiophanate-induced toxicity in liver and kidney of adult rats: a biochemical, molecular and histopathological approach. Cellular and Molecular Biology, <https://doi.org/10.14715/cmb/2017.63.2.4>
 - [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>.
 - [A Th2-type immune response and low-grade systemic inflammatory reaction as potential immunotoxic effects in intensive agriculture farmers exposed to pesticides](#). Lozano-Paniagua, D. et al. (2024) 'A th2-type immune response and low-grade systemic inflammatory reaction as potential immunotoxic effects in intensive agriculture farmers exposed to pesticides', Science of The Total Environment, 938, p. 173545. doi:10.1016/j.scitotenv.2024.173545.
 - [Pesticide-Induced Inflammation at a Glance](#). Lopes-Ferreira, M. et al. (2023) 'Pesticide-induced inflammation at a glance', Toxics, 11(11), p. 896. doi:10.3390/toxics11110896.
 - [Metabolic Effects of a Chronic Dietary Exposure to a Low-Dose Pesticide Cocktail in Mice: Sexual Dimorphism and Role of the Constitutive Androstane Receptor](#). Lukowicz, C., Ellero-Simatos, S., Régnier, M., Polizzi, A., Lasserre, F., Montagner, A., Lippi, Y., Jamin, E. L., Martin, J. F., Naylies, C., Canlet, C., Debrauwer, L., Bertrand-Michel, J., Al Saati, T., Théodorou, V., Loiseau, N., Mselli-Lakhal, L., Guillou, H., & Gamet-Payrastre, L. (2018). Metabolic Effects of a Chronic Dietary Exposure to a Low-Dose Pesticide Cocktail in Mice: Sexual Dimorphism and Role of the Constitutive Androstane Receptor. Environmental health perspectives, 126(6), 067007. <https://doi.org/10.1289/EHP2877>

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>.

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