Chemical Factsheet

DEET

General Information

- Fact Sheet: deet.pdf
- Product Names:
  Ben's 100 Tick & Insect Repellent (Tender)
  Cutter Insect Repellent (Spectrum Brands)
  OFF Skintastic Insect Repellent Spray with Aloe Vera (SC Johnson)
  Deep Woods OFF(SC Johnson)
  Repel Insect Repellent Family Formula (Spectrum Brands)
  PreStrike Mosquito Repellent (Zodiac Pet Care Products)
- Chemical Class: Aromatic amide insecticide
- Uses: Households/Domestic Dwellings, Human body/clothing while being worn (insect repellent), Cats
  (adults/kittens), Dogs/canines (adults/puppies), Horses, Pet living/sleeping quarters; targets Biting flies, biting midges, black flies, chiggers (redbugs), deer flies, fleas, gnats, horse flies, mosquitoes, no-see-ums, sand flies, small flying insects, stable flies and ticks
- Alternatives: Least-Toxic Insect Repellent
- Beyond Pesticides rating: Toxic

Health and Environmental Effects

See citations at end of document.

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

Residential Uses as Found in the ManageSafe™ Database

- Ticks
- Chiggers
- Mosquitoes

Additional Information

- Regulatory Status:

    - EPA Reregistration Eligibility Decision (RED) signed (9/1998)
- Supporting information:
    - Daily News Blog entries (Beyond Pesticides)
    - NCAP DEET Factsheet (Northwest Coalition for Alternatives to Pesticides)
    - Extoxnet DEET Factsheet (Extension Toxicology Network)
    - PAN Pesticides Database: DEET (Pesticide Action Network
    - Synergy: the Big Unknowns of Pesticide Exposure (Beyond Pesticides 2004)
    - The Truth About West Nile Virus (Beyond Pesticides 2003)
    - West Nile Virus/Mosquito Management (Beyond Pesticides program page)
- Studies [compiled from the Pesticide-Induced Diseases Database]
    - DEET and Permithrin Syntax Study *Experimental Neurology* (2001)
    - Prenatal exposure to pesticides and risk for holoprosencephaly: a case-control study. Addissie, Y.A., Kruszka, P., Troia, A., Wong, Z.C., Everson, J.L., Kozel, B.A., Lipinski, R.J., Malecki, K.M. and Muenke, M., 2020. Environmental Health, 19(1), pp.1-13.
    - Genotoxicity studies on permethrin, DEET and diazinon in primary human nasal mucosal cells. Tisch, M., et al. 2002. Eur Arch Otorhinolaryngol 259:150-153.
    - Epigenome-wide association study for pesticide (Permethrin and DEET) induced DNA methylation epimutation biomarkers for specific transgenerational disease. Thorson, J.L.M., Beck, D., Ben Maamar, M. et al. Epigenome-wide association study for pesticide (Permethrin and DEET) induced DNA methylation epimutation biomarkers for specific transgenerational disease. Environ Health 19, 109 (2020). https://doi.org/10.1186/s12940-020-00666-y
    - 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.
    - Reduced birth weight in relation to pesticide mixtures detected in cord blood of full-term infants. Wickerham, Erin L et al. “Reduced birth weight in relation to pesticide mixtures detected in cord blood of full-term infants.” Environment international vol. 47 (2012): 80-5. doi:10.1016/j.envint.2012.06.007
    - Occurrence of per- and polyfluoroalkyl substances, pesticides, pharmaceuticals, and heavy metals in Greek backyard chicken eggs and estimation of the consumption risk. Arvaniti, Olga S et al. “Occurrence of per- and polyfluoroalkyl substances, pesticides, pharmaceuticals, and heavy metals in Greek backyard chicken eggs and estimation of the consumption risk.” The Science of the total environment, vol. 998 180253. 19 Aug. 2025, doi:10.1016/j.scitotenv.2025.180253

Gateway Health and Environmental Effects Citations

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

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

3. Northwest Coalition for Alternatives to Pesticides (NCAP), Pesticide Factsheets. http://www.pesticide.org/pesticide-factsheets.

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