Chemical Factsheet

1,3-Dichloropropene (Telone)

1,3-D

1,3-D is often formulated with chloropicrin both as a warning agent and to enhance plant pathogen and weed control.

General Information

- Product Names:
  Telone (Dow AgroSciences)
  Inline (Dow AgroSciences)
  Cordon (Dow AgroSciences)
  Pic-Clor 6 (Soil Chemicals Corp)
  Tri-Cal Trilone II (Trical Inc)
  Tri-Form (Trical Inc)
- Chemical Class: Soil fumigant
- Uses: Broad spectrum soil fumigant to control various soil-borne diseases, nematodes, and/or garden symphylans on a range of agricultural (fruiting, leafy, and root vegetable crops; legumes; corn and tobacco) and non-agricultural crops (ornamentals, non-bearing fruit/nut trees, forestry crops, lawns and turf, golf course). It also has drip irrigation uses on established vineyards.
- Alternatives: Organic Agriculture
- Beyond Pesticides rating: Toxic

Health and Environmental Effects

See citations at end of document.

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

Additional Information

- Regulatory Status:
  - **EPA Registration Documents**
  - **BP Comments to CDPR (November 2025)**

    - **EPA OIG Report (May 2024)**
    - **Soil Fumigant Risk Assessments**
    - **EPA Air Toxic Pollutants Website**
    - **BP Comments to CDPR (May 2023)**
- Supporting information:
    - NIOSH Pocket Guide to Chemical Hazards
    - Agency for Toxic Substances and Disease Registry (ATSDR). 2008. Toxicological Profile for 1,3-Dichloropropene. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.
    - Strawberry Drip Fumigation. UC Pest Management Guidelines.
    - The Center for Investigative Reporting. Dark Side of the Strawberry. RevealNews.org
- Studies [compiled from the Pesticide-Induced Diseases Database]
    - National Toxicology Program (NTP). 2011. Report on Carcinogens, 13th Edition
    - Case report: Death caused by 1, 3-dichloropropene, a novel fumigant used in China. Zhou, Z., Guo, L., Wen, Z., Dai, P., Zhang, T., Wang, W. and Jian, X., 2023. Frontiers in Public Health, 11.
    - Increasing confidence in new approach methodologies for inhalation risk assessment with multiple end point assays using 5-day repeated exposure to 1,3-dichloropropene. Paudel, I. et al. (2023) Increasing confidence in new approach methodologies for inhalation risk assessment with multiple end point assays using 5-day repeated exposure to 1,3-Dichloropropene, Toxicology. Available at: https://www.sciencedirect.com/science/article/abs/pii/S0300483X23002299.
    - Identification of volatile biomarkers for lung cancer from different histological sources: A comprehensive study. Lv, W. et al. (2024) Identification of volatile biomarkers for lung cancer from different histological sources: A comprehensive study, Analytical Biochemistry. Available at: https://www.sciencedirect.com/science/article/abs/pii/S000326972400071X.
    - Impact of repeated fumigant applications on soil properties, crop yield, and microbial communities in a plastic-mulched tomato production system. Castellano-Hinojosa, A. et al. (2024) Impact of repeated fumigant applications on soil properties, crop yield, and microbial communities in a plastic-mulched tomato production system, Science of The Total Environment. Available at: https://www.sciencedirect.com/science/article/abs/pii/S0048969724007988.
    - Identifying Toxic Consumer Products: A Novel Data Set Reveals Air Emissions of Potent Carcinogens, Reproductive Toxicants, and Developmental Toxicants. Knox, K. et al. (2023) Identifying Toxic Consumer Products: A Novel Data Set Reveals Air Emissions of Potent Carcinogens, Reproductive Toxicants, and Developmental Toxicants, Environmental Science & Technology. Available at: https://pubs.acs.org/doi/full/10.1021/acs.est.2c07247.
    - The association between 1,3-dichloropropene and asthma emergency department visits in California, USA from 2005 to 2011: a bidirectional-symmetric case crossover study. Gharibi, H. et al. (2019) The association between 1,3-dichloropropene and asthma emergency department visits in California, USA from 2005 to 2011: a bidirectional-symmetric case crossover study, Journal of Asthma. Available at: https://www.tandfonline.com/doi/abs/10.1080/02770903.2019.1590596.
    - Soil chemical fumigation alters soil phosphorus cycling: effects and potential mechanisms. Wang, Y. and Tang, D.W.S. (2024) Soil chemical fumigation alters soil phosphorus cycling: effects and potential mechanisms, Frontiers in Plant Science. Available at: https://www.frontiersin.org/journals/plant-science/articles/10.3389/fpls.2024.1289270/full.

Gateway Health and Environmental Effects Citations

1. International Agency for Research on Cancer, World Health Organization (IARC) category, the agent (mixture) is possibly carcinogenic to humans. November 2, 2018. http://monographs.iarc.fr/ENG/Classification/index.php

2. 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.

3. California Environmental Protection Agency. Proposition 65: Chemicals Known to the State to Cause Cancer or Reproductive Toxicity. Office of Environmental Health Hazard Assessment. February 25, 2022.https://oehha.ca.gov/media/downloads/proposition-65//p65chemicalslistsinglelisttable2021p.pdf

4. U.S. Environmental Protection Agency Office of Inspector General Report: The EPA Needs to Improve the Transparency of Its Cancer-Assessment Process for Pesticides (July 20, 2022). Available at: https://bp-dc.org/oigreport2022.

5. National Library of Medicine. PubChem Hazardous Substances Database. PubChem (nih.gov)

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