



Environmental Fate and Modeling

Regulatory Specialists and Ecotoxicology Experts

Study Placement, Monitoring and Report Review

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Compliance Services International (CSI) has expertise in conducting and evaluating all aspects of pesticide environmental fate data requirements. This includes overseeing evaluating and responding to environmental fate data requirements from regulatory agencies, conducting laboratory and field environmental fate testing, evaluating environmental fate data, environmental fate and behavior modeling, and drafting waivers requests depending on a product's properties and use pattern.

This work includes both EPA and OECD guidelines, as well as special (non-guideline) studies that may be required by a regulatory agency.

Specifically, types of environmental fate projects include:

- Reviewing and responding to, when necessary, an environmental fate characterization by a regulatory agency (e.g., a registration review).
- Responding to a DCI including environmental fate data requirements (laboratory and field testing).
- Drafting waivers when appropriate for environmental fate testing requirements.
- Finding a GLP laboratory to conduct environmental fate testing.
- Protocol review and development for environmental fate testing.
- Overseeing synthesis of radio-labeled test material.
- Designing field testing programs.
- Overseeing and monitoring environmental fate testing (laboratory and field testing).
- Evaluating environmental fate data.
- Conducting environmental fate modeling.
- Reviewing draft reports of environmental fate studies.
- Auditing study results.
- Drafting summaries of a product's environmental fate profile.

Studies monitored and overseen include the EPA series 835 guideline studies and corresponding OECD studies (generally series 300 studies but also some series 100 studies), as well as relevant, related product chemistry studies such as octanol-water partition coefficient and water solubility testing.

Representative studies for EPA and OECD pesticide registration and TSCA testing include the following:

- Soil Adsorption-Desorption/Batch Equilibrium (EPA Guideline 835.1220; EPA Guideline 835.1230; OECD Guideline 106; OECD Guideline 121).
- Soil Leaching (EPA Guideline 835.1240; OECD Guideline 312).
- Laboratory Volatility (EPA Guideline 835.1410).
- Hydrolysis (EPA Guideline 835.2120; EPA Guideline 835.2130; OECD Guideline 111).
- Photolysis in Water (EPA Guideline 835.2210; EPA Guideline 835.2240; OECD Guideline 316).
- Photolysis Rate in Air from UV/Visible Spectroscopy (EPA Guideline 835.2310).
- Photodegradation on Soil (EPA Guideline 835.2410).



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E-Fate Testing, Evaluation, Modeling and Waiver Requests

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- Ready Biodegradability (EPA Guideline 835.3110, EPA Guideline 835.3140).
- Shake Flask Die-Away (EPA Guideline 835.3170).
- Porous Pot Test (EPA Guideline 835.3220).
- Simulation Test - Aerobic Sewage Treatment A. Activated Sludge Units (EPA Guideline 835.3240; OECD Guideline 314).
- Aerobic Soil Metabolism (EPA Guideline 835.4100; OECD Guideline 307).
- Anaerobic Soil Metabolism (EPA Guideline 835.4200; OECD Guideline 307).
- Aerobic Aquatic Metabolism/Water-Sediment (EPA Guideline 835.4300; OECD Guideline 308).
- Anaerobic Aquatic Metabolism (EPA Guideline 835.4400; OECD Guideline 308).
- Terrestrial Field Dissipation (EPA Guideline 835.6100).
- Aquatic (Sediment) Field Dissipation (EPA Guideline 835.6200).
- Prospective Ground Water Monitoring (EPA Guideline 835.7100).
- Environmental Chemistry Methods and Associated Independent Laboratory Validation (EPA Guideline 850.6100).
- Bioaccumulation in Fish (EPA Guideline 850.1730; OECD Guideline 305).
- Bioaccumulation in Sediment-Dwelling Benthic Oligochaetes (OECD Guideline 315).

Compliance Services International (CSI) work in environmental fate field also includes conducting EPA environmental fate and transport modeling to determine estimated environmental concentrations for use in ecological exposure and risk assessments and human exposure and risk assessments.

Modeling conducted by CSI includes:

- PWC surface water modeling.
- PRZM-GM groundwater modeling.
- AgDrift spray drift modeling.
- AgDISP spray drift modeling.
- RegDisp spray drift modeling.
- E-FAST down the drain modeling.
- iStream aquatic modeling.
- DEEM dietary exposure modeling.
- EpiSuite modeling.

In addition to the modeling listed above, CSI also routinely evaluates potential exposure and risks to birds, mammals, and bees using EPA models that combine EEC and RQ calculations.

- T-REX avian and mammalian EEC and RQ modeling.
- TerrPlant non-target terrestrial plant EEC and RQ modeling.
- BeeRex pollinator EEC and RQ modeling.