

Focus on: Treatment by Aldehyde Deactivation

If your site treats dangerous waste, the regulations require you to [obtain a permit](#).¹ However, Ecology allows generators to conduct certain types of waste treatment in accumulation tanks and containers instead.

This focus sheet explains how to treat your waste through on-site deactivation of spent aldehyde wastes in accumulation tanks or containers. Follow this focus sheet's guidance, along with our [Focus on: Treatment by Generator publication](#),² to treat your dangerous waste.

You must also notify us using the [Site Identification form](#).⁴ Ecology may require your site to stop treatment activities if the process poses a threat to public health or the environment.

If you're a small quantity generator, refer to [Small Quantity Generators Treating Dangerous Waste](#)⁵ for more information.

What is treatment by aldehyde deactivation?

In this publication, **deactivation** is the process of chemically treating spent aldehyde solutions to decrease or remove the toxicity so the waste no longer designates as a state-only toxic criteria.

Aldehydes include formaldehyde (such as formalin), glutaraldehyde, and ortho-phthalaldehyde (OPA).

- Laboratories use **formalin** as a tissue preservative.
- **OPA** and **glutaraldehyde** are used as high-level disinfectants.

Once spent, these chemicals usually designate as state-only dangerous wastes due to their toxicity. You can mix treatment chemicals with spent aldehydes to reduce toxicity so it no longer meets the definition of a dangerous waste.

If you generate spent aldehyde waste at your site, refer to the product fact sheet or contact the manufacturer to explore options for treatment and disposal. Learn more about managing aldehyde wastes in [King County's Laboratory Waste Management Guide](#).⁶ Local sewer discharge requirements will differ from those in King County. Keep this in mind when using this resource.

Related information

- [Dangerous waste treatment by generator webpage](#)³
- [Focus on: Treatment by Generator](#)²

¹ <https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Dangerous-waste-permits>

² <https://apps.ecology.wa.gov/publications/summarypages/2004017.html>

³ <https://ecology.wa.gov/DW-treatment-by-generator>

⁴ <https://apps.ecology.wa.gov/publications/SummaryPages/ECY070133.html>

⁵ <https://apps.ecology.wa.gov/publications/SummaryPages/1404004.html>

⁶ https://kingcounty.gov/~media/services/environment/wastewater/industrial-waste/docs/TechAssistance/SQG_LABS_1.ashx?la=en

What are the requirements?

- Contact your local sewer authority before you discharge treated aldehyde waste to the sewer. You may need to obtain a written authorization or permit from them.
- You cannot dispose of treated chemicals to septic systems or storm drains.
- You cannot treat unused formalin under this guidance.
 - Unused formalin is a listed dangerous waste⁷ and must be disposed of as a dangerous waste.
 - Sewer disposal isn't allowed.
- Accurately designate spent aldehydes at the point of generation, prior to treatment.
 - Ensure the treatment was effective. This may include laboratory analysis of the treated aldehyde waste.
 - Keep test records to document the method's effectiveness.
- Accumulate spent aldehydes in closed containers that are compatible with the waste and in good condition.
- Follow all [labeling requirements](#)⁸ for dangerous waste containers.
- Notify Ecology of treatment by generator activities and comply with reporting requirements.
- Maintain a treatment log and count the treated dangerous waste towards your monthly generator category.
- If you treat wastes in a permitted wastewater treatment unit, you must comply with the [permit by rule requirements](#).⁹
- If your wastes are intended for land disposal (not the sewer), you must comply with the [land disposal requirement standards](#).¹⁰
- You must comply with all relevant sections of the [Dangerous Waste Regulations](#)¹¹ and federal, state, and local requirements related to on-site waste management.

What's an aldehyde deactivation example?

A histology lab generates spent formalin. After accumulating 1 gallon, they add a deactivating chemical, which reduces the formaldehyde concentration to under 0.1 parts per million. They check the pH to ensure the reaction is complete.

The treated formalin is no longer a Washington State toxic waste. They can dispose of it into the sewer with approval from the local sewer authority. The lab notes "1 gallon" and the date on their treatment log. They also include the waste in their [Dangerous Waste Annual Report](#)¹² as on-site treatment.

⁷ Waste code U122

⁸ <https://ecology.wa.gov/LabelDW>

⁹ WAC 173-303-802(5): <http://apps.leg.wa.gov/WAC/default.aspx?cite=173-303-802>

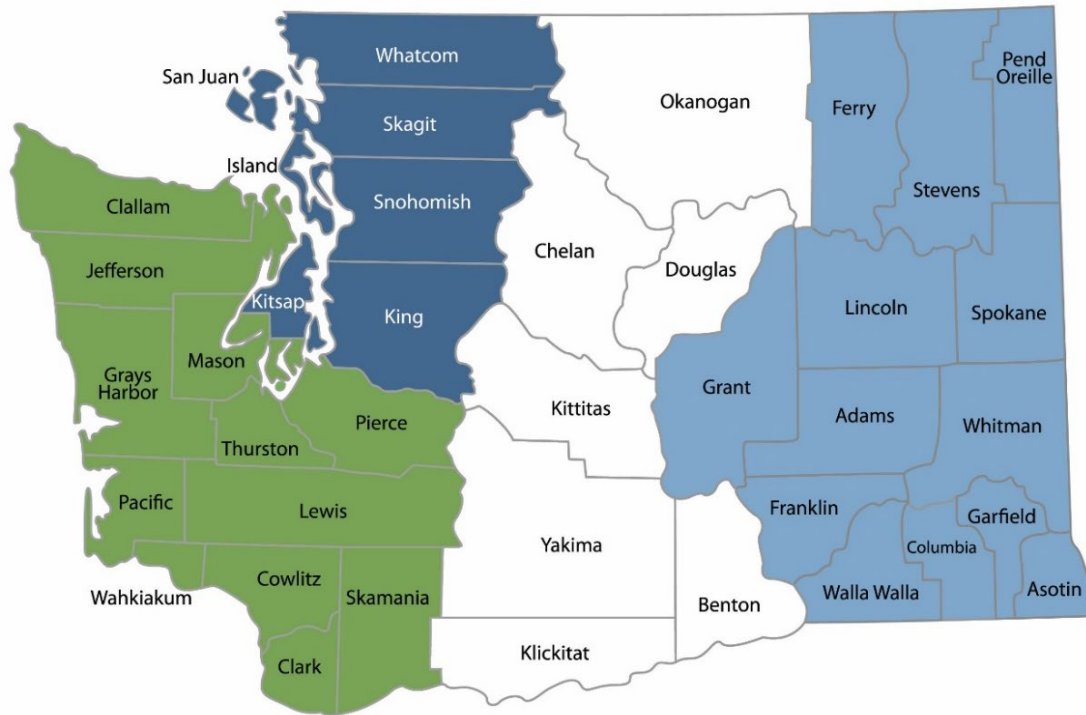
¹⁰ WAC 173-303-140: <http://apps.leg.wa.gov/WAC/default.aspx?cite=173-303-140>

¹¹ WAC 173-303: <https://apps.leg.wa.gov/wac/default.aspx?cite=173-303>

¹² <https://ecology.wa.gov/DWReport>

Where can I learn more?

For more information, please contact a dangerous waste specialist in your region's office.



Southwest Region 360-407-6300	Northwest Region 206-594-0000	Central Region 509-575-2490	Eastern Region 509-329-3400
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Southwest Regional Office: 360-407-6300
Counties: Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, Wahkiakum

Northwest Regional Office: 206-594-0000
Counties: Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom

Industrial Section: 360-407-6916

Central Regional Office: 509-575-2490
Counties: Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima

Eastern Regional Office: 509-329-3400
Counties: Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman

Nuclear Waste Program: 509-372-7950

ADA Accessibility

To request an ADA accommodation, contact Ecology by phone at 360-407-6700 or email at hwtrpubs@ecy.wa.gov, or visit ecology.wa.gov/accessibility. For Relay Service or TTY call 711 or 877-833-6341.