



TREATMENT BY GENERATOR

Treatment Specific Guidance

Aldehyde Deactivation

Fact Sheet 14-04-003

February 2014

This document is for generators who chemically treat their waste formalin, glutaraldehyde, and ortho-phthalaldehyde (OPA) by on-site deactivation, in accumulation tanks or containers. These chemicals are called aldehydes in this document. Dangerous waste generators who comply with these standards and the standards in the Technical Information Memorandum (TIM) #96-412, [Treatment by Generator](#), will also meet the requirements of the *Dangerous Waste Regulations*, [Chapter 173-303 WAC](#)¹. This document is intended only as guidance for the treatment requirements of the *Dangerous Waste Regulations*, Chapter 173-303 WAC. Ecology can require a permit or different management requirements if it determines the treatment process poses a threat to public health or the environment. Small quantity generators should refer to Ecology's fact sheet #14-04-004 [Small Quantity Generators Treating Dangerous Waste](#) for information applicable to their operations.

Description and Definition

In this document, deactivation only includes chemical treatment of spent aldehyde solutions for purposes of removing the state-only toxicity characteristic.

Formalin is used by laboratories as a tissue preservative. OPA and glutaraldehyde are used as cold sterilants. Once spent, these chemicals usually designate as state-only toxic dangerous wastes. Treatment chemicals can be mixed with spent aldehydes to reduce toxicity so they no longer designate as a dangerous waste. The process of treating spent aldehydes with treatment chemicals is a treatment by generator method. Refer to guidance documents listed in the [Additional Resources](#) section for information about aldehyde treatment methods and products.

Rules for Deactivating Aldehyde

1. Disposal of treated chemicals to septic systems or to storm drains is not allowed.
2. Obtain approval from the local sewer authority prior to discharge to the sewer.
3. Unused formalin cannot be treated using this guidance. This is a listed dangerous waste (waste code U122) and must be disposed of as a dangerous waste. Sewer disposal is not allowed.

¹ Washington Administrative Code

Other Requirements

Dangerous waste requirements such as waste designation, accumulation, labeling, and reporting may also apply. This may include laboratory analysis of the treated aldehyde waste to ensure effective treatment has occurred. Retain test records to document effectiveness of the treatment method.

Wastes treated in a permitted wastewater treatment unit must comply with the permit-by-rule requirements (PBR), [WAC 173-303-802](#), instead of this guidance.

Wastes intended for land disposal (not the sewer) must also comply with the Land Disposal Requirement (LDR) standards, [WAC 173-303-140](#).

In addition to following this guidance, generators must still comply with all applicable sections of the *Dangerous Waste Regulations* and all applicable federal, state, and local requirements relating to on-site waste management.

Case 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 state toxic waste and can be disposed into the sewer with approval from the local sewer authority. The lab notes “1 gallon” and the date on their treatment log. This waste will be included in their *Dangerous Waste Annual Report*.

Additional Resources

- *Treatment-by-Generator* Technical Information Memorandum, Department of Ecology: <https://fortress.wa.gov/ecy/publications/SummaryPages/96412.html>
- Treatment by Generator Disinfection/Sterilization fact sheet, Pollution Prevention Resource Center: http://pprc.org/smallHC/TBG_Sterilization/index.cfm
- List of water and sewer districts in the state of Washington: www.mrsc.org/subjects/governance/spd/spd-watsew.aspx
- *Laboratory Waste Management Guide*, King County: www.lhwmp.org/home/publications/eDownload.aspx?DocID=o5fpDUrc%2f%2bc%3d
Local sewer discharge requirements will differ from those in King County. Keep this in mind when using this resource.

Ecology Assistance

For assistance, please contact a hazardous waste specialist at one of the following Ecology offices:

Southwest Regional Office, 360-407-6300

300 Desmond Drive, Lacey, WA 98503-1274

Northwest Regional Office, 425-649-7000

3190 - 160th Ave. SE, Bellevue, WA 98008-5452

Central Regional Office, 509-575-2490

15 West Yakima Ave, Suite 200, Yakima, WA 98902-3452

Eastern Regional Office, 509-329-3400

4601 N Monroe, Spokane, WA 99205-1295

Or visit Ecology's website at

www.ecy.wa.gov/programs/hwtr/manage_waste/treatment_by_generator.html

To request this document in a format for the visually impaired, call the Hazardous Waste and Toxics Reduction Program at 360-407-6700. Persons with hearing loss, call 711 for Washington Relay Service. Persons with a speech disability, call 877-833-6341.