DEPARTMENT OF ECOLOGY
State of Washington

Focus on: Treatment by Elementary Neutralization

This focus sheet is for generators who want to treat their own corrosive dangerous waste using elementary neutralization on site in accumulation tanks or containers.

If you follow this guidance, along with Focus on: Treatment by Generator[1] to treat your dangerous waste, you do not need a permit or other written approval; however, if Ecology determines the treatment process poses a threat to public health or the environment, you may be required to obtain a treatment permit.

Related information

- Dangerous waste treatment by generator webpage[2]
- Focus on: Treatment by Generator[1]

What terms do I need to know?

Corrosive dangerous waste

Corrosive dangerous waste[3] is:

- An aqueous waste with a pH that's either:
  - Less than or equal to 2.
  - Greater than or equal to 12.5.
- A liquid that corrodes steel at rates and under conditions specified in the Dangerous Waste Regulations.[4]
- A solid waste that, when mixed with an equal weight of water, the solution's liquid portion has a pH that's either:
  - Less than or equal to 2.
  - Greater than or equal to 12.5.

Elementary neutralization

Elementary neutralization reduces a material's corrosivity (acidic or caustic properties) by raising or lowering the material's pH[5] to a more neutral pH range, typically between 6 and 9.

The process neutralizes wastes that only designate as dangerous wastes because they exhibit the characteristic of corrosivity.[3]

Treatment residuals

Treatment residuals are wastes derived from dangerous waste treatment.[6] You must dispose of the treatment residuals following all applicable state, federal, and local requirements including the Washington State Dangerous Waste Regulations.[7]

[1] https://apps.ecology.wa.gov/publications/summarypages/2004017.html
[2] https://ecology.wa.gov/DW-treatment-by-generator
[3] See the full definition in WAC 173-303-090(6).
[4] See WAC 173-303-090(6)(ii).
[5] pH is a measure of a material's acidity or alkalinity.
[6] "Treatment" is defined in WAC 173-303-040.
[7] https://apps.leg.wa.gov/wac/default.aspx?cite=173-303

What criteria do I need to follow?

You must meet the following criteria to treat your waste using elementary neutralization.

- Your treatment process must not pose a risk to human health and the environment.
- You must conduct elementary neutralization in accumulation tanks or containers by properly trained personnel.
- Your treatment residuals must either:
  - Exhibit a pH of greater than 2 and less than 12.5 before on-site management or disposal.
  - Meet a delegated municipality or local solid waste authority's requirements.

You must comply with state and local regulations while accumulating and disposing of the treatment residuals, such as obtaining an industrial wastewater discharge permit or authorization for disposal to sewer.

If you neutralize corrosive waste that's also listed (F, P, K, and U codes), the remaining treatment residuals are still listed dangerous waste, even after neutralization. Ship the treated dangerous waste off-site to a permitted facility.

Elementary neutralization example

A generator's process includes neutralizing a container of hydrochloric acid containing etching solution. They slowly and carefully add small amounts of sodium hydroxide until the waste tests as neutral with litmus paper. The generator designates and manages any precipitated solids in accordance with the Washington State Dangerous Waste Regulations, if applicable.

Permit by rule

Instead of the treatment by generator regulations, you may treat corrosive dangerous waste under permit by rule[8] in an onsite elementary neutralization unit: a tank, tank system, container, transport vehicle, or vessel.

This form of treatment is exempt from permitting requirements under the Dangerous Waste Regulations and is regulated under the Clean Water Act. You must obtain and comply with one of the following water quality permits:

- National Pollutant Discharge Elimination System (NPDES) permit.[9]
- State waste discharge permit.[10]
- Pretreatment permit or authorization.

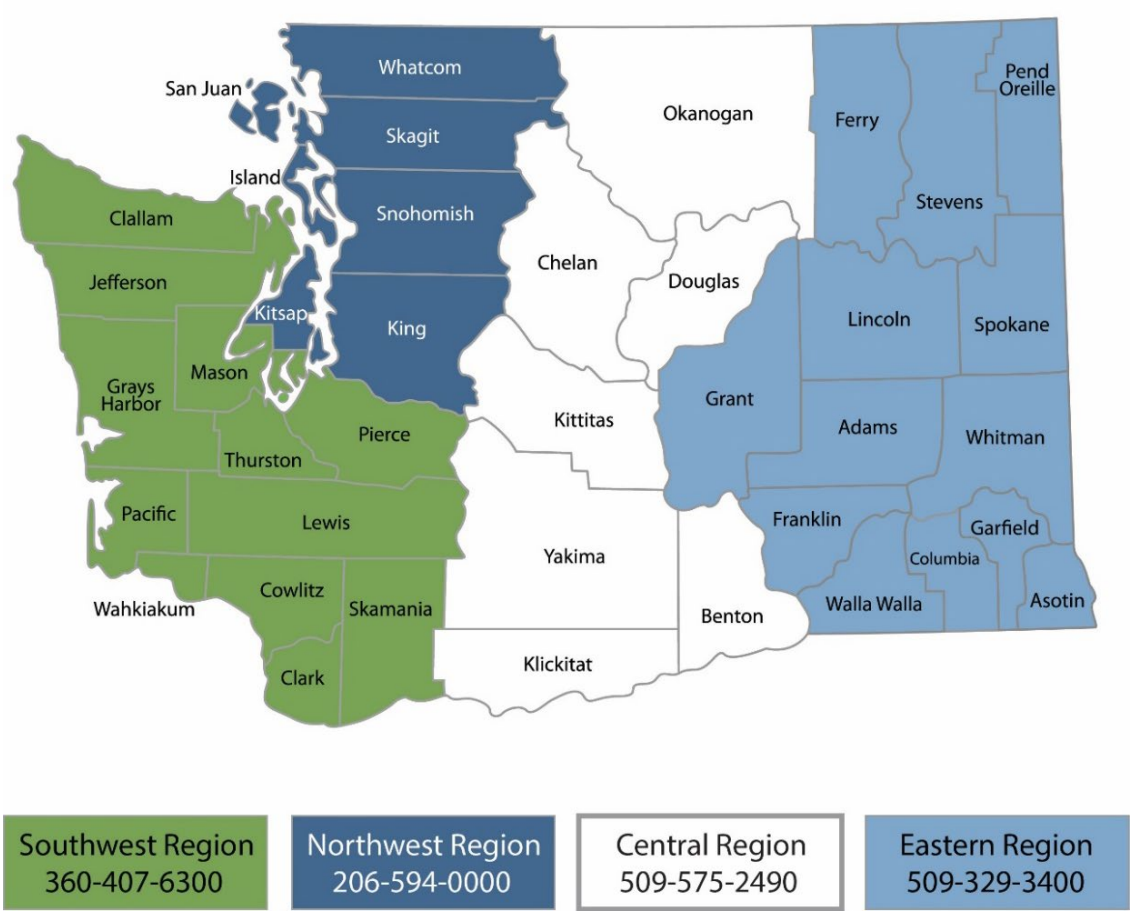
You must notify[11] Ecology that you treat dangerous waste under permit by rule on your Site Identification form; however you're **not** required to count the waste towards your monthly generator category or report the waste on a Generation and Management (GM) Form.

For more information, see Ecology's Focus on: Treating Dangerous Waste Under Permit by Rule[12] publication.

[8] WAC 173-303-802(5)
[9] https://apps.leg.wa.gov/wac/default.aspx?cite=173-220
[10] https://apps.leg.wa.gov/wac/default.aspx?cite=173-216
[11] https://ecology.wa.gov/DWNotification
[12] https://apps.ecology.wa.gov/publications/SummaryPages/2104014.html

Where can I learn more?

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



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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.