



Hazardous Waste Recycling

Last updated: September 2023

All hazardous waste generators must ensure their hazardous waste is managed for proper disposal or is safely and legitimately recycled. This fact sheet provides an overview of hazardous waste recycling regulations. Hazardous waste does not cease to be dangerous simply because it is reused, recycled, or reclaimed. These methods are alternatives to managing hazardous wastes for disposal. Promoting reuse and recovery is one of the goals of the federal Resource Conservation and Recovery Act, also known as RCRA, but not at the expense of ensuring the proper management of hazardous waste. When conducted properly, recycling, reuse, and reclamation activities avoid environmental hazards, protect scarce natural resources, and reduce reliance on raw materials and energy. However, hazardous waste management alternatives may pose serious health and environmental hazards, and all must be conducted with caution.

Consult both federal and state regulatory citations for more specific information on individual requirements, as this summary is an overview and not intended to encompass all aspects of hazardous waste regulation or solid waste laws, including, but not limited to, Oregon Revised Statutes Chapter 459 and Oregon Administrative Rules Chapter 340 Division 93.

Legitimate recycling versus sham recycling

The U.S. Environmental Protection Agency defines legitimate recycling of hazardous secondary material, or HSM, in Title 40 of the Code of Federal Regulations section 260.43. There are four things that need to be true for HSM recycling to be considered legitimate. These four things constitute the legitimacy criteria:

1. When recycling HSM, it should help with the recycling process or make something useful during the recycling process.
2. The recycling process must create something valuable.
3. Both the HSM generator and the recycler must treat HSM like it's valuable while it's in their possession.
4. The final result of the recycling process should be similar to something that's considered a legitimate product or a part of a legitimate product.

Hazardous secondary material, also called HSM, means a secondary material, such as spent material, by-product, or sludge, that, when discarded, would characterize as hazardous waste under 40 CFR Part 261.

Hazardous secondary material generator means any person whose act or process produces HSM at the generating facility.

Translation or other formats

[Español](#) | [한국어](#) | [繁體中文](#) | [Русский](#) | [Tiếng Việt](#) | [العربية](#)

800-452-4011 | TTY: 711 | deqinfo@deq.oregon.gov

Anyone recycling HSM or hazardous waste must conduct a legitimacy determination by comparing their recycling activities against the legitimacy criteria for each waste and for each recycling process.

Sham recycling is recycling that doesn't meet the legitimacy criteria. Sham recycling can include use of a material that is ineffective or only marginally effective for the claimed use, used more than the amount necessary, or is not similar to how a raw material or commercial product is used, for instance, if the material contains unneeded toxic chemicals. HSM that is sham recycled is a solid waste and, therefore, a hazardous waste and would be subject to all pertinent hazardous waste regulations and requirements. Sham recycling is defined at 40 CFR 261.2(g).

Documentation requirements

Persons recycling, reclaiming, or reusing HSM or hazardous waste must maintain documentation of their legitimacy determination on-site and make it readily available to DEQ upon request. Compliance Inspectors may request to review this documentation during an inspection. Documentation must include a written description of how the recycling meets the first three factors of the legitimacy criteria in 40 CFR 260.43(a) as modified by OAR 340-100-0043, and how factor 4 in 40 CFR 260.43(b) was considered in determining the overall legitimacy of a specific recycling activity. Persons managing HSM must maintain documentation for three years after the recycling activity has ceased. The rule does not require a specific format for this documentation. HSM generators may use the form provided by DEQ entitled "[Documentation of Legitimate Recycling](#)" to meet the requirements of 40 CFR section 261.4(a)(23)(ii)(E). This form can also be used to document a claim of legitimate recycling under any other recycling exclusion or exemption. DEQ does not issue approvals for recycling activities but does regulate failure to observe the requirements.

40 CFR 261.1(c)(4): A material is reclaimed if it is processed to recover a usable product, or if it is regenerated. Common hazardous waste reclamation activities involve recovery of spent solvents or metals.

Recycled materials specifically excluded from the RCRA definition of solid waste

When legitimately recycled, the following materials are excluded from the definition of solid waste and are therefore not subject to RCRA hazardous waste regulations.

EXCLUDED MATERIAL	EXPLANATION AND CITATIONS
Hazardous secondary material excluded under a variance or non-waste determination	Case-by-case determinations that recycled materials are not solid wastes. Refer to Title 40 of the Code of Federal Regulations (CFR) sections 260.30, 260.31, 260.33, 260.34, 260.42(a), and Oregon Administrative Rule (OAR) 340-100-0042.
Pulping liquors	Pulping liquors, i.e., black liquors, that are reclaimed in a pulping liquor recovery furnace and then reused in the pulping process, unless accumulated speculatively. Refer to 40 CFR 261.4(a)(6).

Shredded circuit boards	Shredded circuit boards being recycled provided that they are stored in containers sufficient to prevent a release to the environment prior to recovery and are free of mercury switches, mercury relays and nickel-cadmium batteries and lithium batteries. Refer to 40 CFR 261.4(a)(14).
Condensates from kraft mill steam strippers	Condensates derived from the overhead gases from kraft mill steam strippers that are used to comply with 40 CFR 63.446(e). The exemption applies only to combustion at the mill generating the condensates. Refer to 40 CFR 261.4(a)(15)
Mineral processing spent materials	Spent materials generated within the primary mineral processing industry from which minerals, acids, cyanide, water, or other values are recovered by mineral processing or by beneficiation, provided that the materials are stored in certain types of units and are not accumulated speculatively. Refer to 40 CFR 261.4(a)(17).
Petrochemical recovered oil	Petrochemical recovered oil from an associated organic chemical manufacturing facility, where the oil is to be inserted into the petroleum refining process along with normal petroleum refinery process streams, provided that the oil is hazardous only because it exhibits the characteristic of ignitability and/or toxicity for benzene, and the oil is not placed on the land, or speculatively accumulated before being recycled into the petroleum refining process. Definitions of "associated organic chemical manufacturing facility" and "petrochemical recovered oil" are provided in 40 CFR 261.4(a)(18).
Spent caustic solutions from petroleum refining	Spent caustic solutions from petroleum refining liquid treating processes used as a feedstock to produce cresylic or naphthenic acid unless the material is placed on the land or accumulated speculatively. Refer to 40 CFR 261.4(a)(19).
HSM used to make zinc fertilizers and zinc fertilizers made from recycled HSM	HSM that are recycled to make zinc fertilizers are excluded under 40 CFR section 261.4(a)(20) and the zinc fertilizers made from HSM are excluded under 40 CFR 261.4(a)(21).
Used cathode ray tubes	Used, intact, or broken cathode ray tubes and glass removed from CRTs are excluded, provided the conditions listed in 40 CFR 261.4(a)(22) are satisfied.
Solvent-contaminated wipes	Solvent-contaminated wipes that are sent for cleaning and reuse are excluded under 40 CFR 261.4(a)(26), provided certain conditions are met.

Recycled materials that are RCRA solid wastes but not hazardous wastes

When legitimately recycled, the following materials are excluded from the definition of hazardous waste and are therefore not subject to regulation as RCRA hazardous waste.

EXCLUDED MATERIAL	EXPLANATION AND CITATIONS
Spent chlorofluorocarbon refrigerants	Used chlorofluorocarbon refrigerants from totally enclosed heat transfer equipment, including mobile air conditioning systems, mobile refrigeration, and commercial and industrial air conditioning and refrigeration systems that use chlorofluorocarbons as the heat transfer fluid in a refrigeration cycle, are not hazardous wastes provided that the refrigerant is reclaimed for further use. Refer to 40 CFR 261.4(b)(12).
Used oil filters	Non-terne plated used oil filters that are not mixed with listed hazardous wastes are not hazardous wastes if these oil filters have been gravity hot-drained using one of the methods listed in 40 CFR 261.4(b)(13).
Used oil distillation bottoms	Used oil re-refining distillation bottoms that are used as feedstock to manufacture asphalt products are not hazardous wastes. Refer to 40 CFR 261.4(b)(14).

Hazardous wastes that are not subject to management when legitimately recycled

Even if the material is a listed hazardous waste or meets the characteristics of a hazardous waste, there are exemptions from full hazardous waste regulation when these hazardous wastes are legitimately recycled.

EXEMPTED MATERIAL	EXPLANATION AND CITATIONS
Industrial ethyl alcohol	Industrial ethyl alcohol that is reclaimed is not subject to RCRA hazardous waste regulation when recycled, provided that the conditions at 40 CFR 261.6(a)(3)(i), if applicable, are satisfied.
Scrap metal	Scrap metal that is not excluded under 40 CFR section 261.4(a)(13) is not subject to RCRA hazardous waste regulation when recycled. Refer to 40 CFR 261.6(a)(3)(ii).
Waste-derived fuels from refining processes	Fuels produced from the refining of oil-bearing hazardous waste along with normal process streams at a petroleum refining facility are not subject to RCRA hazardous waste regulation when recycled if such wastes result from normal petroleum refining, production, and transportation practices. This would typically mean insertion prior to distillation. Refer to 40 CFR 261.6(a)(3)(iii).
Unrefined waste-derived fuels and oils from petroleum refineries	Hazardous waste fuel produced at a petroleum refinery from oil-bearing hazardous wastes that are introduced into the refining process after the distillation step or that are reintroduced in a process that does not include distillation are exempt if the resulting fuel meets the specifications under the federal recycled used oil standards in 40 CFR 279.11. Oil that is recovered from hazardous waste at a petroleum refinery and burned as a fuel is also exempt provided it meets the used oil specifications. Refer to 40 CFR 261.6(a)(3)(iv).

Materials subject to alternative regulatory standards when legitimately recycled

Several types of materials are subject to alternative management standards for collection and/or recycling.

MATERIAL	EXPLANATION AND CITATIONS
Universal waste	The universal waste program promotes the collection and recycling of certain widely generated hazardous wastes. At present, the universal waste regulations include batteries, pesticides, lamps (e.g., fluorescent bulbs), mercury-containing equipment (e.g., thermostats), and aerosol cans. The universal waste rule is designed to reduce hazardous waste in the municipal solid waste stream by making it easier for universal waste handlers to collect these items and send them for recycling or proper disposal. In addition, the regulations also ensure that the wastes subject to this system will go to appropriate treatment or recycling facilities pursuant to the full hazardous waste regulatory controls. Refer to 40 CFR 273.
Used oil	Used oil includes petroleum-based or synthetic oil that has been used. Because used oil has certain unique properties that make it distinct from most hazardous waste streams and is an easily recyclable material, EPA developed special recycling regulations for used oil that are completely separate from hazardous waste recycling standards. Refer to 40 CFR 279 and OAR Chapter 340 Division 111.
Recyclable materials used in a manner constituting disposal	<p>These materials must:</p> <ol style="list-style-type: none"> 1. Be made for the general public's use; 2. Have undergone a chemical reaction so as to be inseparable by physical means; and 3. Meet applicable land disposal restrictions (LDR) treatment standards. Refer to 40 CFR 266 subpart C. 4. Once these waste-derived products meet these standards, they are no longer restricted from placement on the land. Materials that do not meet these criteria remain regulated. <p>There are also special standards for hazardous wastes used to make zinc micronutrient fertilizers.</p> <p>NOTE: This is a simplified summary of a complex regulatory process. Refer to the regulations and reach out to your Compliance Inspector and/or Technical Assistance Specialist.</p>
Materials utilized for precious metal recovery	Precious metals reclamation is the recycling and recovery of precious metals (i.e., gold, silver, platinum, palladium, iridium, osmium, rhodium, and ruthenium) from hazardous waste. Because these materials will be handled protectively as valuable commodities with significant economic value, generators, transporters, and storers of such recyclable materials are subject to reduced requirements. Refer to 40 CFR 266 subpart F.
Spent lead-acid batteries being reclaimed	Persons who generate, transport, regenerate, collect, and store spent lead-acid batteries prior to reclamation, but do not perform the

	<p>actual reclamation, are not subject to hazardous waste regulation. However, owners and operators of facilities that store spent batteries before reclamation, other than spent batteries that are regenerated, that is, processed to remove contaminants and restore the product to a useable condition, are subject to regulation in a manner similar to hazardous waste treatment, storage, and disposal facilities (TSDFs). Refer to 40 CFR 266 subpart G. Note: Lead-acid batteries may also be managed as a Universal Waste.</p>
<p>Hazardous waste burned in boilers and industrial furnaces</p>	<p>The process of recycling hazardous waste by burning it for energy recovery may pose significant air emission hazards. Therefore, EPA established specific operating standards for units burning hazardous wastes for energy recovery in 40 CFR 266 subpart H. These units are known as boilers or industrial furnaces (BIFs).</p>

Materials subject to full RCRA hazardous waste regulation when recycled

All other recycled hazardous wastes are subject to full hazardous waste regulation. This means that handlers of these recyclable materials, persons who generate, transport, or store them prior to recycling, are subject to the same regulations as handlers who are managing hazardous wastes prior to disposal. The requirements for facilities that store and/or recycle hazardous wastes are outlined in 40 CFR 261.6(b)-(c).

Have questions?

DEQ has made it easy for you to get your questions answered. To learn more and request free, non-regulatory technical assistance, please visit [DEQ's Hazards and Cleanup page](#) and click on "Technical Assistance".

Non-discrimination statement

DEQ does not discriminate on the basis of race, color, national origin, disability, age or sex in administration of its programs or activities. Visit DEQ's [Civil Rights and Environmental Justice page](#).