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|  | 4.02 Processing Wastes**General Guidance for HHW Programs** |

*This standard operating procedure outlines precautions for classifying, packaging, storage and shipment of Household Hazardous Waste (HHW). Proper protocol in HHW processing decreases staff exposure and safety risks.*

# Safety

Waste processing areas shall have flooring that is impermeable to the chemicals being processed and located away from public drop off areas. Minimize staff safety and chemical exposures, including:

* Train staff assisting with HHW processing within six months of hire or be supervised at all times by trained, experienced personnel.
* Use [engineered solutions](https://www.osha.gov/otm/section-3-health-hazards/chapter-2#rfte) to minimize environmental exposure risks.
* Use proper ergonomics and don appropriate [Personal Protective Equipment](https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910SubpartIAppB) (PPE) relative to each job task e.g., [respirators](https://www.osha.gov/otm/section-8-ppe/chapter-2#useresp) and/or chemically resistant gloves if bulking flammable wastes.
* No smoking, eating or drinking is allowed in HHW processing areas.
* Clean up incidental spills which may pose safety or health hazards.

# Classifying HHW

Prescreen and sort incoming HHW within one week of acceptance, (ideally by the end of each workday). Place into [labeled](https://www.pca.state.mn.us/sites/default/files/w-hw1-05.pdf), secondary containment.

2.1 Lab packing

The state-contracted HW disposal company provides packaging and [container](https://www.ecfr.gov/current/title-49/subtitle-B/chapter-I/subchapter-C/part-172/subpart-B/section-172.101) specifications and waste stream identification assistance. To prepare a lab pack container for packaging:

* Choose lab pack/containers and absorbent materials that are compatible with that specific waste stream, i.e. do not place corrosive acids into metal containers. Include a 6 ml. poly liner in fiber drums.
* Use a facility [drum log](https://dec.vermont.gov/sites/dec/files/wmp/HazWaste/Documents/Forms/invlog.pdf) to assign a unique number as each container is placed into service.
* If required, document each waste item on the state-contracted disposal company lab pack inventory sheet.
* [Label](https://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/2022-10/Chart17-10-06-2022-508-REM.pdf) each container with applicable [hazard class](https://www.pca.state.mn.us/sites/default/files/w-hw2-04.pdf) and/or required markings and attach within six inches of one another. Ensure labels are clearly visible and not obscured by other markings.
* Determine the appropriate [waste class](https://www.epa.gov/hw/defining-hazardous-waste-listed-characteristic-and-mixed-radiological-wastes) and segregate into individual categories based on the HHW items chemical constituents; for guidance use the state-contracted HHW Packing Guidance Manual.
* Separate and ensure [incompatible](https://ehs.cornell.edu/research-safety/chemical-safety/laboratory-safety-manual/appendix-k-incompatible-chemicals) chemicals are not co-comingled.
* Add vermiculite (or equivalent absorbent material) into the container base and along sides. Ensure each waste container does not exceed the maximum size limit allowed (no larger than a five-gallon pail or greater than 50 pounds). Ensure glass containers have at least one‑half inch of space between containers to provide room for additional absorbent.
* Alternate placing HHW containers with vermiculite in fiber drum until full, top off with 2 to 3 inches of absorbent material; close and seal by taping and securely fasten container lid.
* Store containers in designated facility areas and >ten feet distance between incompatible waste types.

2.2 Bulking

Latex and oil-based paints, used oil, antifreeze and fuel/solvents are HHW waste types commonly bulked (the process of removing contents from the original container and transferring into a 55-gallon drum). Use the following guidelines when selecting appropriate bulking protocol and containers:

* Enter a unique container number onto the drum and into the facility drum log. Mark or label drum according to the state-contracted hazardous waste disposal company shipping requirements and ensure any paint drippings on the exterior are spray painted the same color as the original drum.
* Use a 55-gallon UN-approved metal closed-top drum to bulk flammable liquids, antifreeze, and used oil. Oil-based paint products bulked together in accordance with a [Product Stewardship](https://www.paintcare.org/wp-content/uploads/docs/xx-factsheet-transfer-station.pdf) (PS).
* Use a non-sparking funnel specifically designed for bulking flammable liquids), spark-proof tools (e.g., screwdrivers, channel locks, spatulas, pry bars, utility knifes, picks) and [ground](https://simplesolvents.com/simple-solvents-blog/how-to-ground-drums/) all Class 1, flammable liquid drums.
* Filled bulk drums require at least 3 inches of head space for safe storage and transportation. Keep a record of the [torque](https://www.containerdistributors.com/wp-content/uploads/2016/07/TorqueClosureInst.pdf) required to properly close each 55 gallon drum ring/nut.
* Use a 55-gallon UN-approved metal open-top drum for bulking paints.
* Use an approved Gaylord box to store non-empty waste aerosol cans; do not bulk aerosol container contents.
* Bulk latex wastes in accordance with a PS Program; do not store in temperatures below freezing.
* Bulk in areas close to the outdoors or near an exhaust fan; if bulking indoors, ensure minimum air ventilation of one cubic foot per minute per one square foot of floor space.
* Staff shall maintain a high awareness of the wastes being processed to ensure incompatible chemicals are not bulked together.
* If container is bulging, do not attempt to open it; evacuate the area and contact the state-contracted waste disposal company for further direction.

# Storage

* Store containers in such a manner that would impede access or exit from the Facility.
* Ensure the quantity of HHW stored on site does not exceed the permitted maximum amounts as stated in the State issued ‘Approval to Operate’.
* Facility flooring must be impermeable to the type of waste stored (chemical compatible epoxy paint).
* Facility storage areas must not contain a floor drain that may discharge to the environment.
* Place closed out HHW drums in rows with at least 24” of aisle space to facilitate inspection. Adequate aisle space ensures unobstructed movement of personnel and emergency equipment if a spill occurs.
* Ensure ignitable wastes are located at least 50 feet from the property line (this provision may be waived with the receipt of approval from the local fire marshal and local building officials).
* Ensure secured Facility access.
* Provide overhead roofing to protect HHW containers from direct sunlight.
* Mark each facility areas with the specific waste type stored at that location.
* HHW storage areas must include secondary containment (e.g., dike, berm, wall, curb, other device) large enough to contain 110% of the largest storage container (generally applicable to a 55-gallon drum).
* To prevent the comingling, store incompatible chemicals separated a distance of at least

10 feet apart, including:

Flammables or Pesticides: Store away from oxidizers.

Bases: Store away from acids.

Acids: Store away from bases.

Oxidizers: Store separately, including organic peroxides.

Cyanides: Store away from acids

Dangerous When Wet: Keep away from water sources and latex paint.

# Staging for Shipment

* Contact the state-contracted HW disposal company at least 15 business days before desired shipment date with an inventory of waste containers to be shipped (container quantity, weight, size and waste type). For any changes in the shipment, contact the disposal company at least two days prior to the scheduled pickup date.
* Use a licensed transporter and/or the state’s contracted HW disposal company for HHW shipments; recycle antifreeze using a reputable vendor.
* The state-contracted disposal company prepares all legal shipping paperwork (manifests), although this Program is responsible for accuracy. Review manifest, bill of lading and land disposal restriction (LDR) documented information prior to signing.
* Only Program staff who have received written authorization to sign manifests on the State’s behalf can sign for outgoing HHW shipments.
* Use only approved DOT containers and ensure complete/applicable [markings or labels](https://www.pca.state.mn.us/sites/default/files/w-hw1-05.pdf) are attached to each waste container.
* Segregate the shipping containers from the materials destined to remain at the Facility. To decrease the loading process time, use a drum dolly or other equipment to segregate and place containers in staging area in advance of the state-contracted waste disposal company scheduled arrival time.