

SOLVENT DISTILLATION

(For assistance, please contact EHS at (402) 472-4925, or visit our web site at <http://ehs.unl.edu/>)

After use, many solvents can be re-distilled to remove contaminants and reused. However, certain procedures must be followed when distilling used solvents in the interest of safety and to ensure compliance with hazardous waste regulations.

- Never accumulate more than 55 gallons cumulative total of all wastes (including those tagged for collection by EHS as well as used solvents intended for distillation). Hazardous waste regulations prohibit exceeding this quantity. Distill the solvents as soon as possible after generation. Keep the volume of solvents awaiting reclamation to a minimum (far less than the regulatory threshold of 55 gallons). If solvents cannot be recovered in a reasonable amount of time, tag them for collection by EHS.
- Ensure that solvents to be reclaimed are stored in compatible containers. The containers must be in good condition and equipped with tight-fitting lids. Apply the same labeling and collection requirements applicable to other hazardous materials collection containers to solvents that are to be reclaimed. The only exception is that you don't need to tag these materials for collection by EHS.
- Store solvents that are to be recycled or reclaimed safely (e.g., in a flammable liquids cabinet).
- Collect all still bottoms and tag them for collection by EHS. Still bottoms are regulated as hazardous waste.
- Avoid distilling solvents that are prone to formation of peroxides (i.e., ether, tetrahydrofuran, dioxane, etc.).
- Prior to conducting this type of operation, receive training from an experienced individual and obtain permission from your supervisor.
- Use equipment that is designed with safety features (i.e., pressure relief valves, automatic shut-off, sensors or interlocks, etc.). Follow the manufacturer's recommendations and applicable protocols/procedures for equipment installation, set-up, and operation. Verify that hose clamps are securely fastened before each use and that glassware is in good condition.
- Set up stills in a chemical fume hood. Remove unnecessary supplies and chemical containers from the hood. Attend the operation.
- Observe good chemical hygiene practices (e.g., engineering, administrative, and personal protective equipment controls).