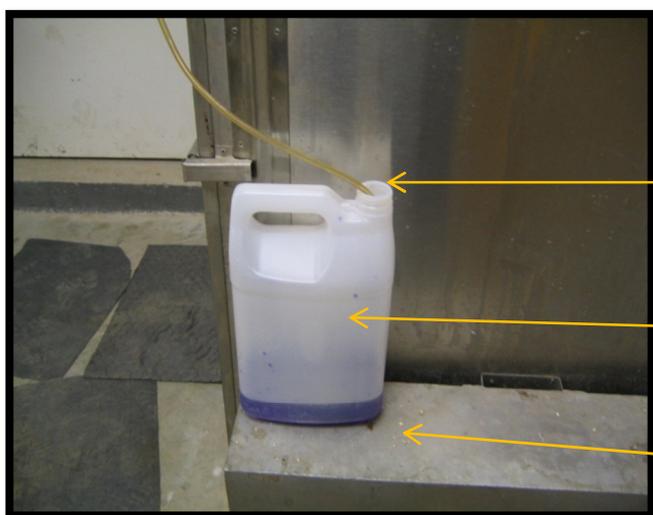


HPLC and Other Analytical Instruments: Hazardous Waste Container Management

Analytical instruments, such as high performance liquid chromatography (HPLC), inductively coupled plasma (ICP) or other spectrophotometers, flow analyzers, and related equipment, present a problem for accumulating used solvents/extracts since they must be vented and yet comply with regulations for hazardous waste. HPLC and other such wastes are generated slowly and over an extended period of time when the equipment is used as intended. The regulations state that hazardous waste containers must be closed AT ALL TIMES except when adding or removing waste from the container. So, while it is allowed to leave the waste collection container open during use of the instrument, the container must be closed at all other times.



Improper Waste Accumulation

Container is not closed. Solvent vapors may be released to the environment.

No label on the container. Nothing indicates the material is hazardous waste.

No secondary containment. A spill could occur easily.

In response to regulatory concerns, Environmental Health & Safety (EH&S) developed the following performance guidelines:

1. The container must be labeled with a hazardous waste label and/or the contents must indicate the type of material being placed in it. For example: “HAZARDOUS WASTE: Acetonitrile, Methanol.”
2. The container should be in secondary containment since it is a liquid hazardous waste.
3. To meet the closed container requirements, there must be a cover or cap on the container. Containers need to be vented using one of the following approaches. A special cap or manifold may be purchased from various sources. One option is marketed as the [Omnifit® T Solvent Safety Bottle Cap \(Diba Industries\)](#)². The cap fits typical one gallon jugs and is equipped with a series of entrance ports and an exit hole for venting. It is fitted with a hose attachment device to secure the waste hose from the HPLC or similar equipment. Omnifit bottle



cap accessories are available that include snug fitting adaptors for various hose sizes.

[Vaplock™ Closed Systems²](#) offer similar types of solvent containment devices.

Another approved approach is to take a container cap and drill an appropriate number of holes in it, one or more for the instrument waste hoses and one to vent the container. The holes should be of such a diameter that the hoses fit snugly into the cap and the vent hole is only large enough to prevent pressure build-up while the container is being filled. These caps can be transferred to the container being filled and the full container can be capped with an unmodified cover.



4. Less expensive options are available, such as [Nalgene® Filling/Venting Closures²](#).
5. Venting: In all cases, the vent must be closed or capped as soon as it is practical after completing a batch run.
6. Practices that ARE NOT acceptable include wrapping hoses with tin foil, tissue, rubber gloves, tape, wax, or other loosely fitted materials. These methods do not meet the regulatory requirements and are considered open containers by the regulatory authorities.

Any questions about this policy should be directed to Environmental Health and Safety at 208-885-6524 or thicks@uidaho.edu.

Resources

1. For an example installation, see this [video](#) describing the **Kinesis KX VaporSafe Closed System HPLC Waste Container Kit Installation**.
2. EH&S does not endorse any specific company, product, or supplier.