

# Chemistry Safety Notes

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## Yolo County – CUPA Inspections

Starting Wednesday, April 29<sup>th</sup> and continuing on Wednesday mornings until done, Yolo County Environmental Health (CUPA) will be inspecting the Chemistry Department. Here are the items they'll be looking at:

- **Hazardous Waste:** Properly labelled with the entire label filled out and properly managed in secondary containment. Be very cautious about using the word "waste." Unless it has a hazardous waste label on it, use a different word. "Spent" is a lovely word.
- **Hazardous Materials:** Properly labelled with the chemical name and hazard warning. Have a critical look at containers. Not crusty or rusty or have evidence of drips or spills on the outside. Ask the question: Should this material be disposed?
- **Training Records:** Spill response, evacuation and notifications are up to date. SafetyNet 13 is posted. Records for initial training and annual refreshers need to be available.

## Fire Code Inspections

Fire Code compliance inspections have been completed and corrective actions are being accomplished. Surge protectors inside fume hoods were a focus of this inspection. In 2013, we had 150 violations. In 2014, we had 75 violations. In 2015 (drum roll please!), we had 40 violations! Thanks for your hard work to help the Department stay in compliance.



## Fume Hood Sashes & Stops

Recently, Facilities Management/HVAC has been working in the Department to repair and replace fume hood sash stops. It's important (and a regulatory requirement) that fume hood sashes be equipped with functioning mechanical stops at the working height of 18". This was a topic of conversation with Cal/OSHA.

- Please don't remove, override, bend, tweak, or otherwise defeat the sash stop. If the sash stop, or the sash itself, needs repair, please let me know.
- Please close the sash when you're not actively working in the fume hood. This protects everyone in the lab if an unexpected event occurs in the hood.

***The fume hood is a critical engineering control for your safety and protection. Use it wisely.***

## No Recharge Haz Waste

From now until **June 30, 2016**, there is no recharge for hazardous waste disposal. Take a critical look at the containers in inventory and dispose those crusty, rusty, drippy, gooey materials.

***Don't let these types of situations become an issue for you!***

***PLEASE TAKE ADVANTAGE OF THIS OPPORTUNITY!***



Image courtesy of Fed. EPA.



Image courtesy of UNC.

## Incident/Injury Reporting

Recently, we had a discussion about incident/injury reporting and there was some confusion about how and when to report incidents/injuries.

From the [Department IIPP](#), *Supervisors will investigate all accidents, injuries, occupational illnesses, and near-miss incidents to identify the causal factors or attendant hazards. Appropriate repairs or procedural changes will be implemented promptly to mitigate the hazards implicated in these events.*

*The Chemistry Department Accident Report ([below](#)) shall be completed to record pertinent information and a copy retained to serve as documentation. It can be completed by either the supervisor or the Department Safety Coordinator, Debbie Decker.*

An incident reporting form is included in the IIPP. Reviewing this process has revealed some issues I'll be working to fix. Please continue to report incidents/injuries as required and I'll ask you to "stay tuned" for updates to the reporting structure.

## Empty Containers

Every container of hazardous materials must be completely [empty as defined by California](#) before the container itself is no longer hazardous waste. Haz Mat containers which are **not** empty must be sent to EH&S as hazardous waste. A container of pourable liquids is defined as "empty" when nothing can be poured or drained out no matter what orientation the container is held (e.g. tilted, inverted, etc.). If the material is not pourable, the container is empty if no material is encrusted on, or adhered to the inside that can be feasibly removed by physical methods (excluding rinsing). ***Do not rinse a container unless you are able to collect all the rinseate and complete a waste determination on that rinseate.*** You might have to manage the rinseate as hazardous waste!

Once a container is empty, deface the label, remove the cap, and dispose in regular trash or recycle through glass recycling. For larger containers (5 gallons or larger), mark the container "Empty" and the date. These containers must either be recycled or properly disposed through EH&S within one year of the "Empty" date. See [SafetyNet #124](#) or contact Debbie for any questions.

Excerpted from Pete French's [minusbat blog](#) on LiveJournal.

## Under pressure

So, Sunday morning, a time for relaxing after going out the night before right ? Márcia and I had indeed gone out last night - some very kind friends volunteered to babysit Tiago for the evening so we could go and see The Birthday Massacre play, as we won't be out in a while. They entertained him with some science demos using dry-ice, which he loved, and even left some of it behind, so we could do some more this morning for fun. Indeed, he was very keen, and as soon as he had finished breakfast he said "Daddy, can we do some more experiments please?"

"Sure" I said, and went to get the dry-ice. At which point I started to realise that I may have done something a little foolish!

Dry-ice is solid carbon dioxide. At minus seventy nine degrees celsius it is a little on the chilly side, so to stop it vanishing overnight I had put the remaining crystals into a small thermos flask. I went to get this, and because some might have turned to gas overnight I went onto the balcony to release the pressure before opening it entirely. But the little valve was jammed. "Odd" I thought, and tried to loosen the whole top. again, no luck. At which point I realised that either the extreme cold, or the pressure inside the flask had jammed the top.

OK, so the top is jammed. Is this a problem ? Quick calculation in my head – dry ice expands by about 850 times when it turns to gas. Based on the amount I put in, and the size of the flask, that's going to be roughly a hundred atmospheres when it all sublimes. Which is inevitable as the flask isn't going to keep it at minus seventy nine forever. The chances of a small domestic thermos flask being able to resist a hundred atmospheres of pressure without rupturing? Well, that's pretty much zero.

I looked at the flask with that awful sinking feeling you get when you realise you have created something which is inevitably going to explode at some point in the future, and there's nothing you can do about it.

Click on the [live link](#) for the rest of the tale, which is too long to post here.

