



## Memo

To: Harvard Environmental and Safety Compliance Officers  
From: Joseph Griffin, Director of Environmental Health & Safety  
CC:  
Date: December 20, 2007  
Re: Department of Homeland Security - Chemical Facilities Antiterrorism Standards (CFATS)

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I am writing to update my prior communications to you regarding the Chemical Facility Anti-terrorism Standards (CFATS) compliance effort at Harvard. As you know, on November 20 the Department of Homeland Security (DHS) completed its rule making process for CFATS by publishing the final version of Appendix A to the standard. The purpose of CFATS is to prevent the intentional misuse of any of about 320 chemicals of interest (COI) listed in Appendix. The standard addresses three areas of misuse, including intentional release, theft and sabotage and provides screening threshold quantities for each. Although the regulation is directed towards industrial and commercial facilities, the rule does apply to universities and most other facilities that possess any COI in excess of the screening threshold quantities. Teaching, research and conservation laboratories are also covered by the standard, but are exempt from requirements regarding risks associated with intentional release. The regulation requires facilities to estimate the types and quantities of the COIs on hand. If the screening threshold quantity for any COI is exceeded, the facility must submit a Top-Screen analysis to the DHS within 60 days of the November 20 publication date. Based on the complexity of this task Harvard University will request a short, one-time extension from DHS.

In order to comply with this new regulation, the University needs to inventory the locations and quantities of COIs throughout the university community. Since laboratories contain a wide variety of chemicals and are more difficult to inventory, EH&S is deciding to address them separately, making a web based inventory system available to lab personnel to aid them with their inventories. This work is already in progress in lab areas of FAS, HMS, SEAS and HSPH. EH&S believes that COIs associated with general building systems will be limited, and the process of identification and inventorying them will be much simpler. As the Environmental Safety Compliance Officer (ESCO), you are responsible for reporting on the building and facilities in your Faculty or Department and should ensure that each of your non-laboratory facilities and general building systems within laboratory buildings are screened for the use and storage of any COIs and inventoried where necessary. If you are responsible for teaching and/or research labs, data collection for these areas will be conducted separately. If a facility contains only one or two small laboratories, they should be reviewed as part of the general building evaluation, with EH&S support if necessary.

In order to aid you in this process, a copy of Appendix A of the standard is attached, providing a comprehensive list of COIs. A spreadsheet is also provided for you to record your locations and amounts of any COIs you identify at your facility. **Please record the information in the spread sheet, sign it, and send it to EH&S, 46 Blackstone Street Attn: Holly Sweet, no later than February 1, 2008.** If you do not have any chemicals on the list, please date, sign and return the blank form.

While conducting your review, please keep in mind that the following materials are exempted by section 27.203 of the standard:

1. Any product used as a structural component
2. Any product used for routine janitorial maintenance
3. Any food, drug or cosmetic
4. Any manufactured item that does not release or otherwise result in exposure to a regulated substance under normal of use.
5. Any solid waste including most hazardous waste except high hazard wastes listed in section 40 CFR 261.33.

To assist you, EH&S has identified a few common building systems that may contain COIs and should be carefully reviewed. These include the following: (COIs are bolded)

Pools, Hot Tubs etc.: Pools, hot tubs etc. sometimes use **chlorine gas** as a disinfectant. **Chlorine gas** is a COI and must be counted if used. **Bromine** is sometimes used as a chlorine substitute and is also a COI. Sodium hypochlorite is NOT covered by the standard. Pools, hot tubs etc. often use **hydrochloric acid (Muriatic Acid)** to lower pH. If the hydrochloric acid has a concentration greater than 37% it should be counted as a COI.

pH Waste Neutralization Systems: Sulfuric acid, the most commonly used acid in waste neutralization is NOT covered by the standard. However, **hydrochloric acid** and **nitric acid** are sometimes used. Sodium hydroxide is the most common base used and is NOT covered by the standard. **Ammonium hydroxide** is sometimes used and must be counted if the solution contains 20% or more ammonia.

Refrigerants: An EH&S review of the Facilities Equipment Inventory Management System (FIEMS) revealed that most facilities are using R22, R134a, R11, and/ or R123, which are NOT covered by the standard. However, at least one facility is using R 500 which contains 26% difluoroethane, a COI. The refrigerants used should be reviewed and any COIs should be identified and inventoried, if present. COIs are used as common refrigerants including **ammonia (R717)**, **n-butane (R600)**, **Chloroform (R20)**, **difluoroethane (R 152a, R 500)**, **ethane (R170)**, **Ethyl chloride (R-160)**, **Ethylene (R1150)**, **Hydrogen (R 702)**, **Isobutane (R600a)**, **methane (R50)**, **methyl chloride (R 40)**, **methyl formate (R611)**, **propylene (R1270)**, and **sulfur dioxide (R704)**.

Fertilizer: Any fertilizer containing at least **23% nitrogen** AND at least **33% ammonium nitrate** are considered COI and must be counted. If your facility stores products meeting these criteria, it should be listed on your submittal.

Animal Cage Wash: Animal cage wash areas will often use acid solutions to remove certain organic matter from metal cages prior to washing. Review acids used to ensure that they are not COIs.

Fuels: **Propane** is a COI, but is only counted if stored in tanks with a capacity greater than 10,000 pounds. Gasoline and fuel oils do not need to be considered for flammable release. **Methane** is a COI, but natural gas need not be counted unless stored. **Methane** or **hydrogen** stored in cylinders would need to be counted, but are not likely to be found in non-laboratory facilities.

If you have other processes or storage areas with significant amounts of hazardous materials, you should review contents to ensure that any COIs are identified and inventoried.

EH&S is available to assist you in understanding these requirements. Additional information can be found at the EH&S web site at [http://www.uos.harvard.edu/ehs/ih\\_cfats.shtml](http://www.uos.harvard.edu/ehs/ih_cfats.shtml). If you have any questions please contact either Howard Herman-Haase at 5-2186 or [howard\\_herman-haase@harvard.edu](mailto:howard_herman-haase@harvard.edu) (Cambridge/Allston Campus), or Chiu-Oan Ngooi at 2-4724 or [chiuoan\\_ngooi@harvard.edu](mailto:chiuoan_ngooi@harvard.edu) (Longwood Campus).

Thank you in advance for your cooperation.