



University of
New Hampshire



Evolution of a Chemical Inventory System

Lessons Learned and Keys to
Success

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Universities, Colleges Not Receiving Top Marks for Environmental Compliance

EPA Holding Educational Institutions to Same Standards as Industry

Colleges and universities are required to comply with all applicable environmental requirements

like their counterparts in the regulated industry to create a safe haven for human health and the environment.

Violating these requirements can be costly. For example, the University of Hawaii recently paid \$1.8 million in civil penalties for violating federal law by poorly managing laboratory waste.



Graphic courtesy of EPA Region 1

This issue of *Enforcement Alert* highlights the results of recent inspections by the U.S. Environmental Protection Agency (EPA), and identifies a host of resources, such as EPA's "Audit Policy," which can help universities and colleges stay in compliance with federal environmental requirements. EPA encourages academic institutions to take advantage of the Audit Policy, which establishes a framework for the voluntary disclosure and correction of violations in return for greatly reduced penalties.

Areas of Noncompliance Highlighted

Most academic institutions are similar to small cities and encompass many analogous activities within their campus borders such as operating research laboratories, auto repair facilities, power plants and wastewater treatment plants; disposing of hazardous waste and trash; managing asbestos; supplying drinking water; maintaining grounds; and incinerating wastes. Many universities also operate medical and

research facilities that create their own set of environmental challenges.

During past inspections of university and college campuses across the nation, EPA Regions have found significant compliance problems with the Resource Conservation and Recovery Act (RCRA); the Spill Prevention, Control and Countermeasure (SPCC) requirements of the Clean Water Act (CWA); Underground Storage Tank management; and the Clean Air Act (CAA).

Specific examples of noncompliance include improperly handling and disposing of hazardous waste materials; boilers and furnaces that do not meet clean air regulations; inadequate monitoring of underground storage tanks; sewage treatment facilities that are not operating properly; and improper abatement of lead-based paint and asbestos.

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About Enforcement Alert

"Enforcement Alert" is published periodically by the Office of Regulatory Enforcement to inform and educate the public and regulated community of important environmental enforcement issues, recent trends and significant enforcement actions.

This information should help the regulated community anticipate and prevent violations of federal environmental law that could otherwise lead to enforcement action. Reproduction and wide dissemination of this publication are encouraged.

For information on obtaining additional copies of this publication, contact the editor listed below.

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requests for this newsletter.)


Overview

- EPA Region 1 enforcement led to UNHCEMS
- UNHCEMS has evolved meet University needs.
- Core concepts provided solid foundation for success.
- Lessons learned informed development and guides future enhancement.



UNH's First Chemical Inventory





SAFETY DATA SHEET
according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date: 07/31/2016 Version: 2.0

SECTION 1. Identification
Product identifier
Product number: 104003
Product name: Formaldehyde solution min. 37% GR for analysis stabilized with about 10% methanol ACS, Reag. Ph. Eur.





Relevant identified uses of the substance or mixture and uses advised against
Identified uses: Reagent for analysis

Details of the supplier of the safety data sheet
Company: EMD Millipore Corporation | 290 Concord Road, Billerica, MA 01821, United States of America | General Inquiries: +1-978-716-4321 | Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)

Emergency telephone: 800-424-9300 CHEMTREC (USA) | +1-703-527-3887 CHEMTREC (International) | 24 Hours/day, 7 Days/week

SECTION 2. Hazards identification
GHS Classification
Flammable liquid, Category 4, H227
Acute toxicity, Category 3, Oral, H301
Acute toxicity, Category 3, Inhalation, H331
Acute toxicity, Category 3, Dermal, H311
Skin corrosion, Category 1B, H314
Skin sensitization, Category 1, H317
Germ cell mutagenicity, Category 2, H341
Carcinogenicity, Category 1B, H350
Specific target organ systemic toxicity - single exposure, Category 1, Eyes, H370
Specific target organ systemic toxicity - single exposure, Category 3, Respiratory system, H336
For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labeling
Hazard pictograms



Program Requirements



Customizable



No per-seat
Licensing



Accessible but
Secure

Process Improvements



Centralized Chemical
Receipt and Delivery



Inventory Data Entry



Periodic Inventory
Verification

Process Improvements Cont'd

Emergency Response Module



Emergency Response Module
Building: Rudman Hall

(* exact total could not be calculated because there is a unit conversion error)

room <small>(click for summary)</small>	# containers	nfpa _(GHS)	oxidizers (lbs)	class 3-4 flammable (gal)	water reactants (gal)	corrosives (gal)	sign
112	0						
120	11						sign
121	0						sign
121A	0						sign
122	321		7.000	26.230*	1.888		sign
123	234		0.132	8.890	0.001		sign
124	343		0.474*	12.851			sign

CAUTION

ADMITTANCE TO AUTHORIZED PERSONNEL ONLY

	RESTRICTED AREA NO UNAUTHORIZED PERSONNEL <hr/> BEYOND THIS POINT	 TOXIC GAS
NO EATING OR DRINKING	HYDROGEN GAS	COMPRESSED GAS

FOR FIRE OR FIRST AID DIAL 911

Location: Morse Hall 345	Last Updated On: 2016-02-29
Additional Information: This sign can be updated at https://cems.unh.edu . Gases in room include sulfur dioxide, carbon monoxide, oxygen, hydrogen, nitrogen, and helium.	
Special Instructions: Exterior audible and visible alarms indicate dangerous gas release in room; when alarming, do not enter without SCBA and protective clothing.	
MS Location: https://cems.unh.edu	
First Aid Kit Location:	
Emergency Contact	Department
Andrew Ouimette	Earth Systems Research Center
Lucie Lepine	Earth Systems Research Center
Office	Office Phone
Morse 475	603-862-0847
Morse 475	603-862-3979
Home Phone	Home Phone
603-953-...	603-721-6...

2001 UNHCEMS

Chemical Receipt



Web Access



Search Inventory

Barcode

Chemical Name exact match

Product Number

Owner v ..

Location v ..

Molecular Formula

CAS

Manufacturer

Inventory Search

Hazardous Waste Pickup Request

Principal Investigator (request on behalf of) v ..
other:

Department v ..
other:

Pick-up Location v ..
other:

item #	chemical substance (identify all constituents and concentrations)
1	<input type="text"/>
2	<input type="text"/>
3	<input type="text"/>
4	<input type="text"/>
5	<input type="text"/>

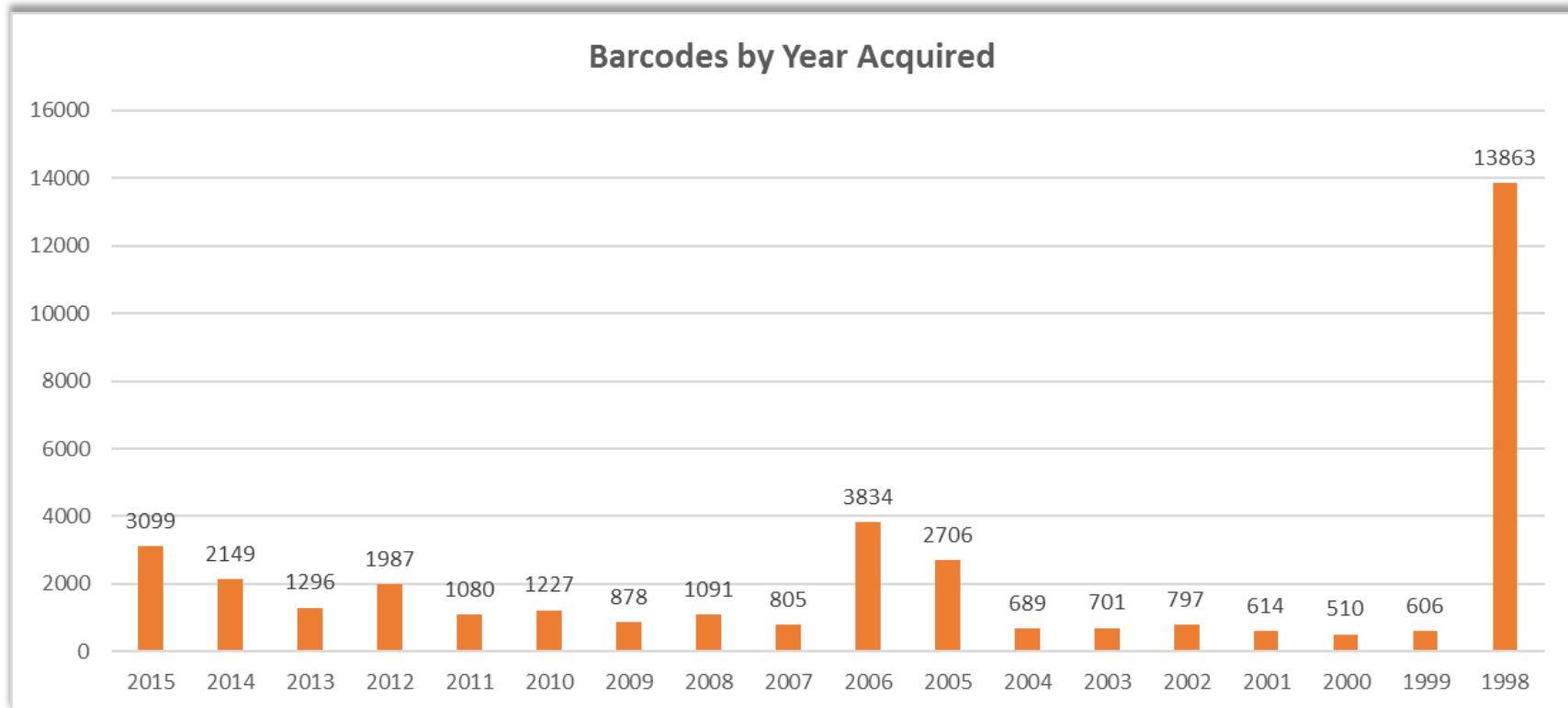
Hazardous Waste Pick up Requests

UNHCEMS Modern Developments

- ✓ Inventory Tracking for all materials
- ✓ Tools to enhance compliance
- ✓ Custom Forms
- ✓ Online Training
- ✓ GHS Hazard Communication Integration



Lessons Learned



Keys to Success

- Ongoing Engagement
- Minimized Burden
 - Inventory maintenance
 - Central chemical receipt
 - System easy to use
- Inventory Verification
- Reliable Chemical Information
- Collaborative Relationships
 - Including non-UNH UNHCEMS subscribers

Resources

UNHCEMS:

<http://www.unh.edu/research/unhcems>

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