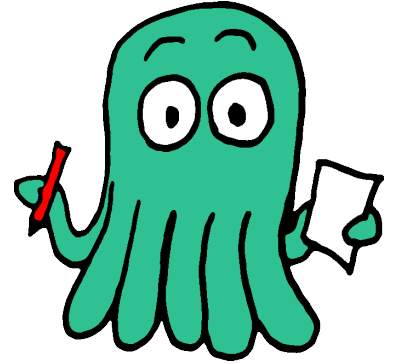


# **STRATEGIES FOR SCIENCE SAFETY #12: ADMINISTRATORS' ROLES & RESPONSIBILITIES**

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[VERSION: Dec. 2024]

## HAZARD COMMUNICATION (HAZCOM) PROGRAM: Required Features



### 1. **Safety Data Sheets (SDS):**

Electronic or paper SDS required for all commercial chemical products (not household), identifying risks & other info.

### 2. **Labeled Containers:**

All chemical containers require standard labels with:

1. pictograms
2. signal word
3. hazard & precautionary statements
4. product identifier
5. supplier identification

### 3. **Pictograms:**

Staff recognizes & understands the **nine symbols** for immediate risk.

### 4. **Training:**

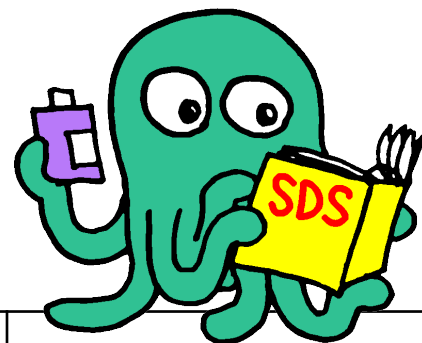
All employees have training in HazCom standards.

### 5. **Written Safety Program** (Required in VT):

...

6. (In NH:) All public sector employers are **“required to maintain a safe work environment and to provide training and tools necessary.”**

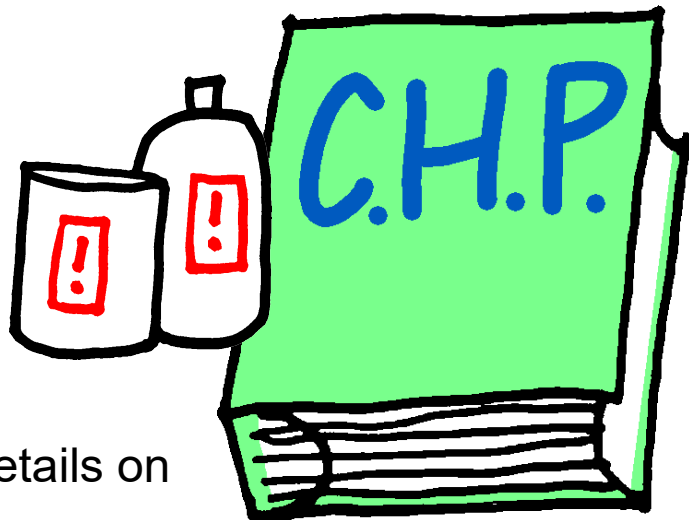
# HAZCOM PROGRAM: Questions for Teachers



1. Is there an <b>accurate chemical inventory</b> of your classroom supplies?	YES / NO / ??
2. <b>Who</b> keeps the inventory updated?	
3. Are <b>Safety Data Sheets (SDS)</b> available to teachers?	YES / NO / ??
4. Do staff/teachers <b>know how to use/read SDS</b> ?	YES / NO / ??
5. Is there <b>chemical safety training</b> for new teachers?	YES / NO / ??
6. Are all containers <b>labeled correctly</b> ?	YES / NO / ??
7. Does your school have a <b>written program for Hazard Communication</b> ?	YES / NO / ??
8. Is the <b>Hazard Communication program</b> part of the school's <b>Chemical Hygiene Plan</b> ?	YES / NO / ??

**NOTES / QUESTIONS / TASKS:**

## CHEMICAL HYGIENE PLAN: Overview



### 1. OSHA Laboratory Standard:

See [29 CFR 1910.1450](#) for full details on the **Chemical Hygiene Plan**.

- (VT) OSHA specifically requires CHP for labs
- (NH) State law requires CHP for chemicals in “science labs, automotive shops, and all other places where hazardous liquids or open flames are frequently used.”

### 2. School-Wide CHP:

Writing the CHP should be completed as **one comprehensive document for the entire school** (labs, automotive, art, maintenance, etc.).

### 3. Chemical Hygiene Officer (CHO)

The CHP requires the identification of a **Chemical Hygiene Officer** to coordinate the process of writing & facilitating the CHP.

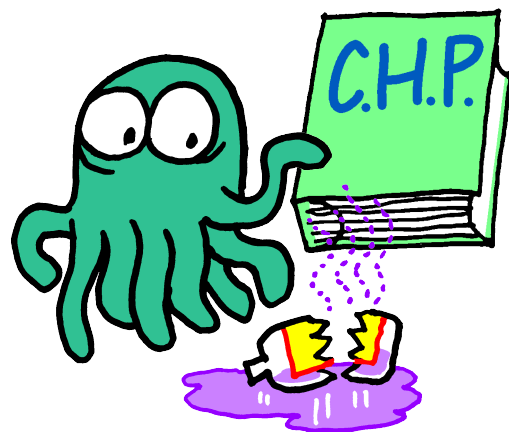
### 4. CHP = Comprehensive & Accessible.

The CHP is the instruction manual for all chemical safety information. Staff should have access to it & be familiar with their responsibilities.

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NOTES / QUESTIONS / TASKS:

## CHEMICAL HYGIENE PLAN: Required Features



### 1. **Scope & Responsibilities:**

- ✓ Best option is to address **ALL chemical management policies for the entire school**, and NOT focus exclusively on laboratory safety.
- ✓ Some states (e.g. NH) requires CHP for “science labs, automotive shops, and all other places where hazardous liquids or open flames are frequently used.”

### 2. **Information & Training:**

Required training with the CHP to help staff understand exposures and prevent them from occurring.

### 3. **Safety Data Sheets & Labels:**

Duplicates the requirements of Hazard Communication program.

### 4. **Standard Operating Procedures (SOPs) & Personal Protective Equipment (PPE):**

SOPs and other requirements to keep teachers, staff, and students safe

### 5. **Housekeeping, Maintenance, Inspections:**

Addresses cleaning, maintenance, and inspection schedules for safety equipment such as:

- safety shower
- eye wash station
- mechanical fume hood
- shelving etc.

CONTINUED →

## CHEMICAL HYGIENE PLAN: Required Features (CONTINUED)

### 6. Required approvals:

This can be one of the strongest sections of the CHP and one of the most protective to prevent dangerous chemicals and activities. (Safety Committee)

### 7. Additional Protection:

If “Particularly Hazardous Substances” are used on site, this section is critical to identify requirements for safety, PPE, and security measures. (Example: aflatoxin)

### 8. Emergency Response & Chemical Spills:

Defines steps to take, equipment on site, and training.

### 9. Records, Signs, & Labels:

This is a duplication of the Hazard Communication program

### 10. Waste Disposal, Air Monitoring, Medical Program:

This section addresses ongoing procedures to properly dispose of waste, and conditions where air monitoring and medical monitoring are warranted.

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## NOTES / QUESTIONS / TASKS:

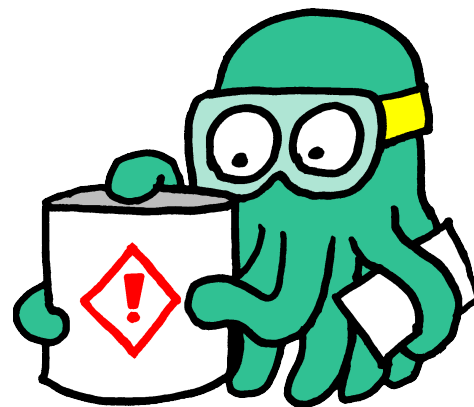


## CHEMICAL HYGIENE PLAN: Questions for Teachers

1. Is there a trained & designated <b>Chemical Hygiene Officer</b> ? (Who?)	YES / NO / ??
2. Is there a <b>safety committee</b> that represents all areas of the school with chemical risk?	YES / NO / ??
3. Is there process that is used to determine if a chemical or process is <b>too dangerous</b> ?	YES / NO / ??
4. If <b>Particularly Hazardous Substances (PHS)</b> are allowed for use, are teachers and students provided with additional Personal Protective Equipment?	YES / NO / ??
5. If PHS are in use, is there <b>respiratory protection</b> available? Is there <b>medical monitoring</b> ?	YES / NO / ??
6. Are there <b>response procedures</b> identified for spills & other emergencies?	YES / NO / ??

### NOTES / QUESTIONS / TASKS:

## HAZARDOUS WASTE DISPOSAL: Overview

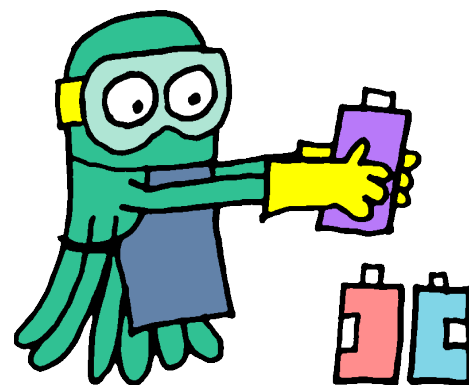


1. **Regulations for Hazardous Waste Management** are complicated, and messing them up can result in substantial financial penalty.
2. **EPA regulations:** See [40 CFR 260 – 273](#) (not all inclusive!)
3. **Almost all states** have their own hazardous waste regulations that are frequently **MORE STRINGENT** than federal regulations
4. There are **many resources** available to help you understand – Please reach out if there are questions!
5. **Simple practices** can be put into place to help with compliance.
6. Not only are disposal mistakes costly – They can also **negatively impact many parts of your community**, including plumbing, well water quality, septic & sewer function, and local community safety.

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NOTES / QUESTIONS / TASKS:

## HAZARDOUS WASTE DISPOSAL: Required Features



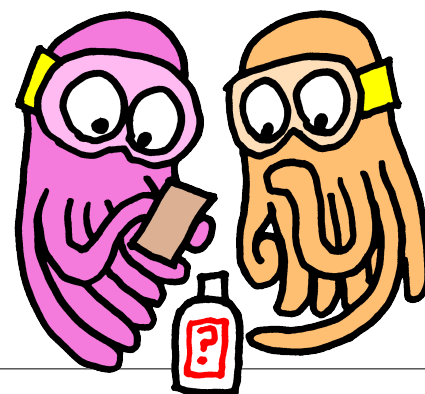
1. Waste must be managed from “cradle to grave” from a contiguous site;  
Categories include:

<p><b>“Don’t want it”</b> Dangerous legacy chemicals</p>	<p><i>(EXAMPLE: Peroxidized ether)</i></p>
<p><b>“Can’t use it”</b> Risk exceeds utility.</p>	<p><i>(Mercury thermometers)</i></p>
<p><b>“Unknown”</b> Unidentified chemical supplies?</p>	<p><i>(Solutions from retired teachers)</i></p>
<p><b>“Orphaned or Abandoned”</b> Esp. outdated technology.</p>	<p><i>(Old CRT monitors)</i></p>
<p><b>“Spilled”</b> Accidents &amp; unplanned releases.</p>	<p><i>(Dropped 4L bottle of Acetone)</i></p>

2. Regulated chemical waste must be collected in **standard containers** that are:
  - ✓ chemical-compatible
  - ✓ labeled correctly
  - ✓ kept closed
  - ✓ stored safely and away from reactive chemicals
3. Regulated chemical waste has **time limits** on how long it can be stored.
4. Just because you can **buy a chemical at a box store**, doesn’t mean it's not HAZARDOUS... (Check that SDS!)

# REGULATORY REQUIREMENTS FOR CHEMICAL SAFETY

## HAZARDOUS WASTE DISPOSAL: Regulated Waste that's EASY TO MISS



This is not an all-inclusive list! Regulations vary by state.

- **Aerosol cans** (clogged, unable to use)
- **Rechargeable batteries** (particularly Lithium present risk!)
- **Fluorescent light bulbs AND some LED light bulbs** (may contain toxic metals)

<b>SCIENCE:</b> <ul style="list-style-type: none"><li>• solvents</li><li>• chemicals containing regulated (toxic) metals</li><li>• acids</li><li>• bases</li></ul>	<b>ART:</b> <ul style="list-style-type: none"><li>• ceramic glazes w/ regulated (toxic) metals</li><li>• corrosive etchants</li><li>• paint thinner</li><li>• photography chemicals</li></ul>
<b>INDUSTRIAL TECH:</b> <ul style="list-style-type: none"><li>• spray paint</li><li>• solvents &amp; solvent-contaminated rags</li><li>• used oil</li></ul>	<b>MAINTENANCE:</b> <ul style="list-style-type: none"><li>• corrosive cleaners</li><li>• pesticides</li><li>• oil-based paint</li><li>• solvents</li><li>• batteries</li><li>• boiler chemicals</li><li>• used oil</li></ul>

NOTES / QUESTIONS / TASKS:

## HAZARDOUS WASTE DISPOSAL: Simple practices to help you stay in compliance



### 1. “Use it up”:

Use chemicals for their intended purpose and use them up! Just because you don't like the way the cleaner works, doesn't mean you can't use it for its intended purpose!

### 2. Training:

Educate teachers, staff, and students so that no hazardous chemicals go in the trash or down the drain, or get evaporated up the hood.

### 3. Who's in charge?

Establish one key contact at the school (Chemical Hygiene Officer?) that understands waste regulations and can coordinate disposal.

### 4. Prioritize high-risk materials:

Pay particular attention to waste that are exceptionally dangerous: peroxidized old science chemicals, lithium batteries (computers, tools, bikes/hoverboards, etc)

### 5. Have a Plan:

Prepare for chemical emergencies: spills, fires, illegal activities, etc. Have your CHP, Spill & Emergency Plan, etc. **READY TO GO!**

# REGULATORY REQUIREMENTS FOR CHEMICAL SAFETY

## HAZARDOUS WASTE DISPOSAL: Questions for Teachers

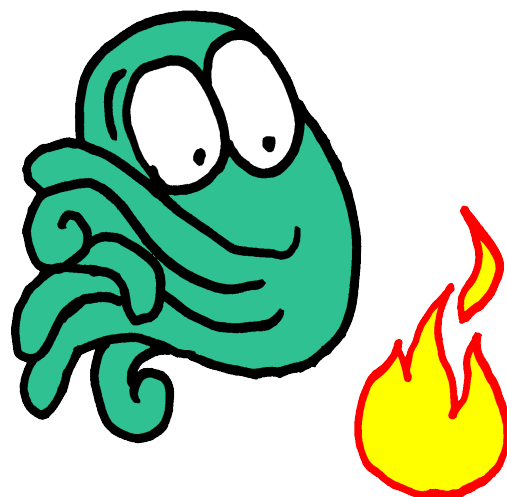


1. Are you collecting chemical waste?	YES / NO / ??
2. Where and how is waste collected?	
3. Is there a written process to manage chemical waste?	YES / NO / ??
4. Are the containers compatible with the waste being collected?	YES / NO / ??
5. Do you know how to label waste containers?	YES / NO / ??
6. Do you know what the process is to dispose of chemical waste?	YES / NO / ??
7. Who is the key contact at the school you can reach out to with questions?	
8. Are there chemicals being disposed down the drain or in the trash?	YES / NO / ??
9. Are there legacy chemicals that need to be disposed?	YES / NO / ??
10. Are there excess chemicals (inherently waste-like) that have been inherited and need disposal?	YES / NO / ??

### NOTES / QUESTIONS / TASKS:

## FIRE PREVENTION & LIFE SAFETY: Overview

Fire Codes (NFPA or IFC) and inspectors typically focus on:



1. **Industrial settings**  
(esp. chemical quantities are larger than those found in classrooms)
2. **Combustibles**  
(paper products, wall decorations, etc)
3. **Fire prevention**  
(through evaluation of chemical storage strategies, sprinkler systems, and evacuation routes)
4. Fire risk from **rechargeable batteries**
5. Strategies to **minimize risk** and procedures to respond to emergencies (e.g. options to extinguish fires)

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NOTES / QUESTIONS / TASKS:

## FIRE PREVENTION & LIFE

**SAFETY: Simple practices to help you stay in compliance**



1. If you have **rechargeable batteries** on site, prepare for thermal runaway reaction fires (w/ CellBlock fire suppressant).
2. Identify and follow a **maintenance schedule** for life safety devices throughout the school (safety showers, eye wash stations, fire blankets, spill kits, etc.).
3. Identify and document **emergency responses** to chemical-related accidents (spills, incompatible chemical reactions, solvent contaminated rag fires, chemical burns or exposure accidents, illegal activities, etc.)
4. Train teachers and staff to **test & maintain life safety equipment** in their areas of responsibility (safety glasses, chemical resistant gloves, safety showers).

# REGULATORY REQUIREMENTS FOR CHEMICAL SAFETY

## FIRE PREVENTION & LIFE SAFETY: Questions for Teachers



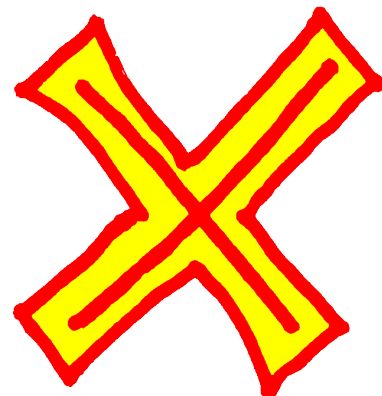
1. Is the <b>safety shower</b> flushed <u>weekly</u> ?	YES / NO / ??
2. Is there <b>clear access</b> to the safety showers and eye wash?	YES / NO / ??
3. Are <b>safety glasses</b> being worn?	YES / NO / ??
4. (If shared, are they <b>sanitized</b> ?)	YES / NO / ??
5. Is there a <b>spill kit</b> ?	YES / NO / ??
6. Are teachers <b>trained</b> in how to use it?	YES / NO / ??
7. Are there <b>rechargeable batteries</b> ?	YES / NO / ??
8. Is there a way to <b>extinguish fires</b> ?	YES / NO / ??
9. Are chemicals stored by <b>compatibility</b> ?	YES / NO / ??
10. Are there <b>large stockpiles</b> of unused or unwanted chemicals?	YES / NO / ??
11. Are dangerous or “particularly hazardous chemicals” <b>locked up</b> so that students cannot access them?	YES / NO / ??
12. Are there <b>clear classroom rules</b> for safe chemical use?	YES / NO / ??
13. Are students and parents required to sign a <b>safety contract</b> before chemicals are used?	YES / NO / ??

### NOTES / QUESTIONS / TASKS:

## DANGEROUS BEHAVIORS:

This does not happen often; however you need to have a plan for:

1. **Teachers** that incorrectly assess risk (etching, experiments/demonstrations)
2. **Teachers** that intentionally conduct experiments that are dangerous or illegal
3. **Students** that put others at risk



### STRATEGIES FOR ADDRESSING DANGEROUS BEHAVIORS:

- Chemical Hygiene Plan defines what is **acceptable behavior**.
- CHP committee evaluates **high risk chemicals or procedures**.
- Students and Parents sign **safety contracts**, which clearly state **consequences**.

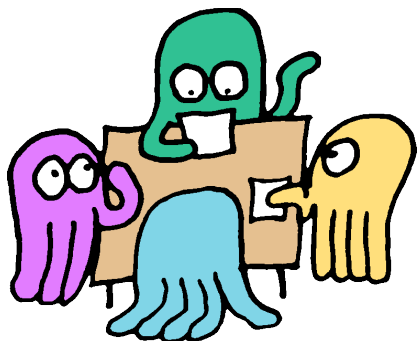
#### **STUDENT CONSEQUENCES:**

1. suspension from class
2. suspension from labs
3. permanent removal from labs (paper participation only)
4. permanent removal from class
5. expulsion
6. law enforcement intervention

#### **TEACHER DISCIPLINE:**

1. Access to chemicals revoked
2. implementation of HR protocols
3. law enforcement intervention

## 5 KEY STEPS to Improve Chemical Safety:



1. Identify a **Chemical Safety Committee.**

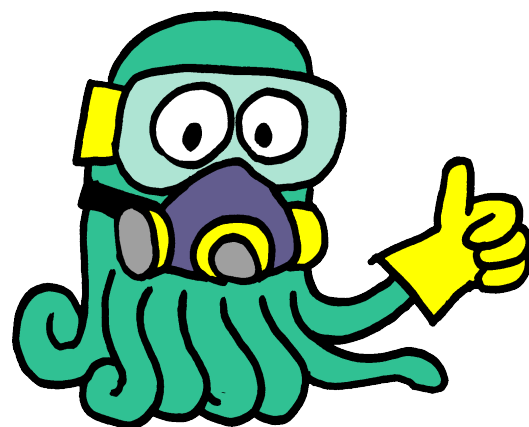
2. Check **chemical inventory lists** for chemicals where risk exceeds utility.



3. Implement the use of **Student Safety Contracts** in all areas where chemicals are used.

4. Write & implement the **Chemical Hygiene Plan** (or **Site Chemical Safety Plan**)

5. Build your list of **resources** and **prepare for chemical emergencies.**



## FOR ADDITIONAL ASSISTANCE:

- Many more resources are available at:  
[www.uvlsrpc.org](http://www.uvlsrpc.org)
- Additional resources are available from Becky @ Hazardous Materials Consulting:  
[www.hazardousmaterialsconsulting.com](http://www.hazardousmaterialsconsulting.com)
- HMC can assist remotely with inventory evaluations, Q&A sessions, & additional training. Please feel free to reach out with any questions.



## Have a safe school year!

