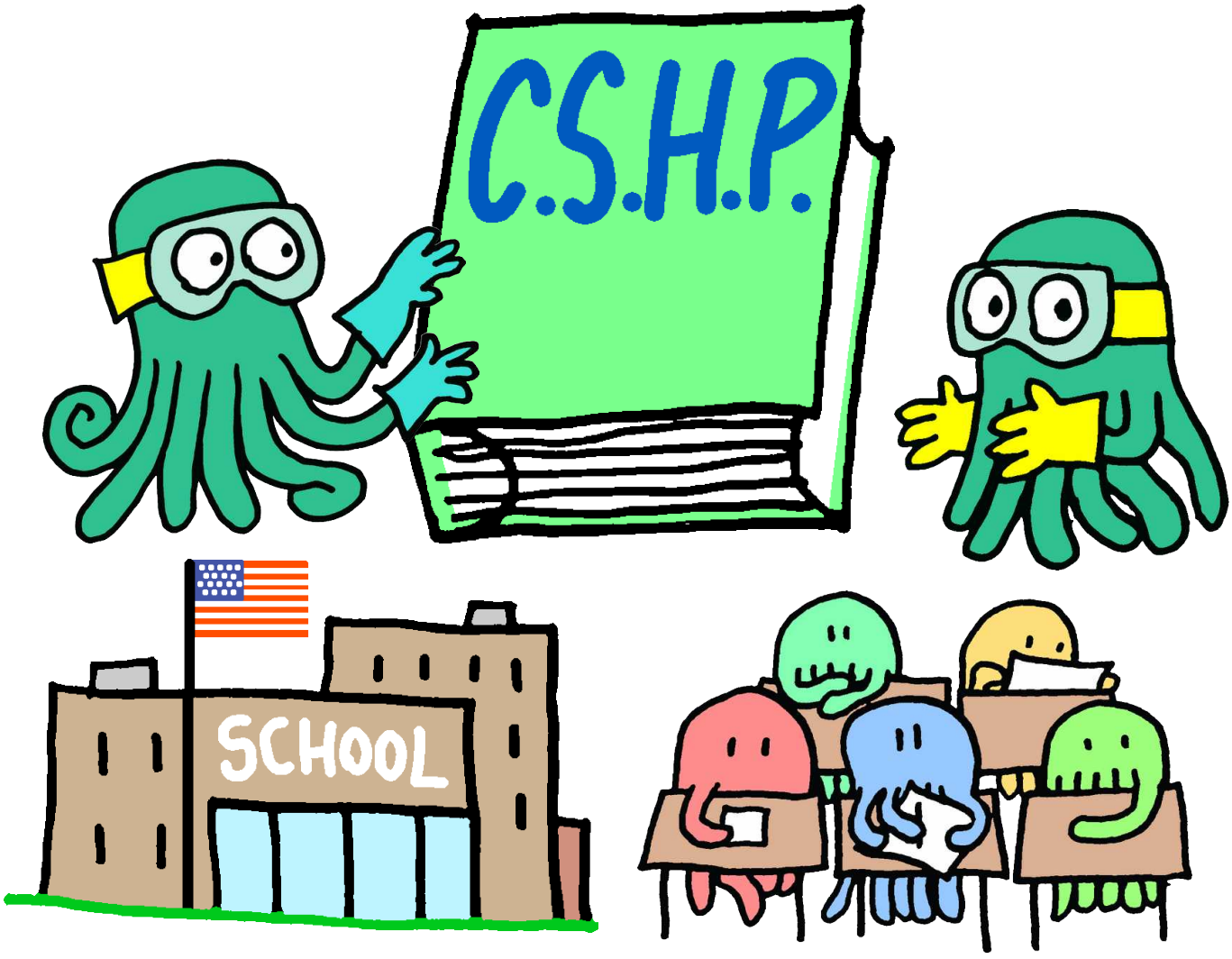
Hazardous Materials Consulting presents:

How to Set Up a Chemical Safety & Hygiene Plan (CSHP)

By Becky Andersen & Marek Bennett



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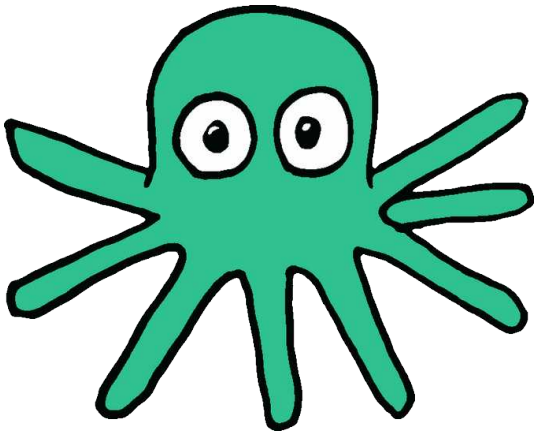


YES – We have A LOT to do! So many tasks, so many responsibilities... (That's why our artist, Marek, draws teachers as an octopus...)

Teachers & administrators have been overwhelmed with safety requirements for decades. We want to help.

In this book, we've gathered a series of **chemical safety resources** to simplify your risk management process...

Our goals are simple:

1. Keep Students Safe.
2. Keep Employees Safe.
3. Support excellent teaching.

Our program translates the overwhelming regulatory jargon of chemical safety into simple instructions that help you achieve a safe classroom (& better compliance with those regulations).

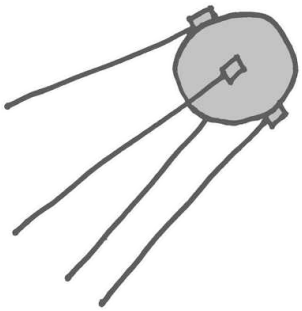
Together, we can make our schools safer!

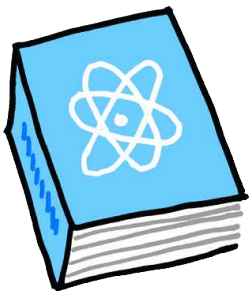
~ Becky Andersen, HMC Inc.

Preventing EMERGENCIES = SUCCESS!

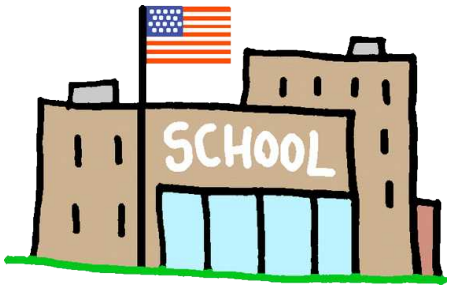
Legacy Chemicals in Schools: A Quick Story

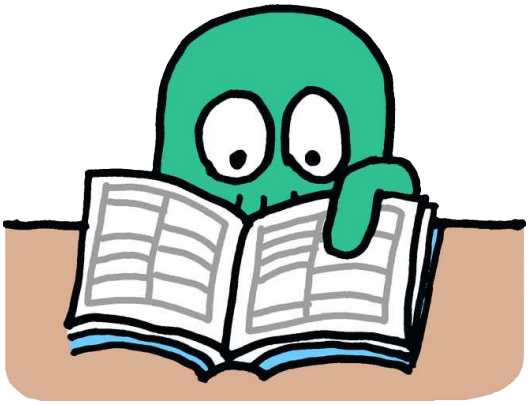
- In the late **1940s & 1950s**, the US & USSR were in a heated **"space race"**...
- The USSR launched **Sputnik**... The US was falling behind!





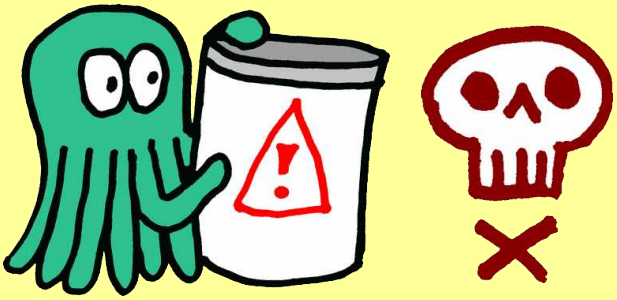
To encourage US science education programs, catalogs reportedly went out to **all US K-12 public schools & universities**...





By some accounts, teachers could order any lab chemicals they needed...

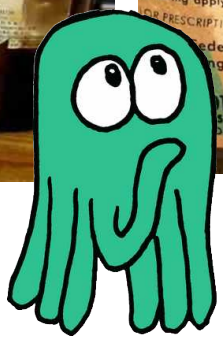
...and so they "stocked up" – sometimes on **hazardous chemicals**!



Decades later, many of these chemicals may STILL be stored in schools nationwide...

How old is old?

Paper lids & corks?
→ 1920s-1950s!

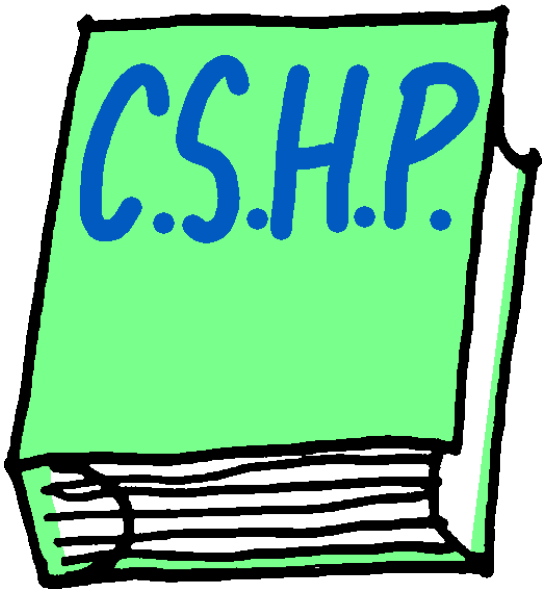


Old labels & logos
→ 1950s-1960s

Consequences in Schools:

- Unstable chemicals (such as peroxide formers) cannot be safely shipped for disposal.
- Brittle plastic & glass due to chemical reactivity (ex: hydrofluoric acid!)
- Broken bottles & leaking chemicals.
- Teachers inherit dangerous, unpredictable situations...

What Is a Chemical Safety & Hygiene Plan (CSHP)?



In broad terms: **The CSHP is a comprehensive document that governs chemical usage policy institution-wide.**

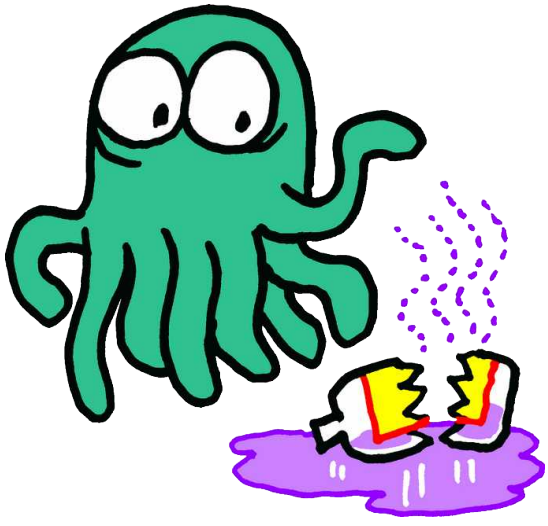
The CSHP identifies steps necessary to:

☑ **Minimize Risk**

☑ **Decrease Accidents**

The Science of Safety:

Small incidents lead to large incidents lead to major accidents.



LEGAL BACKGROUND:

- Schools often have **chemical safety requirements**.
- **Different states have different requirements,** which makes compliance difficult to summarize. School personnel should learn their specific state requirements.
- Most states have regulations that require **chemical safety measures** to protect teachers and school employees.

Chemical safety requirement details may vary, but in general:

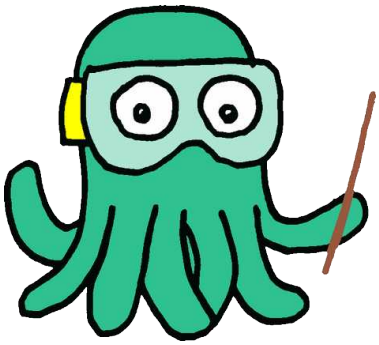
1. Schools using chemicals must have a **Chemical Safety Hygiene Plan (CSHP)** with a designated **Chemical Hygiene Officer (CHO)**.
2. Schools must keep **Safety Data Sheets (SDS)** for all non-household chemicals on site.
3. Schools must keep a **current inventory of chemicals** and all chemicals must be **labeled**.
4. School personnel must be **trained** in understanding Safety Data Sheets, labeling, OSHA pictograms, and chemical risk management.

- Many schools are subject to OSHA programs, such as the **OSHA Lab Standard** (29 CFR 1910.1450) and the **OSHA Hazard Communication Program** (29 CFR 1910.1200).
- Schools subject to OSHA are subject to both **Lab Standards** and the **HazCom Prorgam**.
- Schools may also be subject to chemical safety requirements from **Department of Labor** or **Department of Education**.

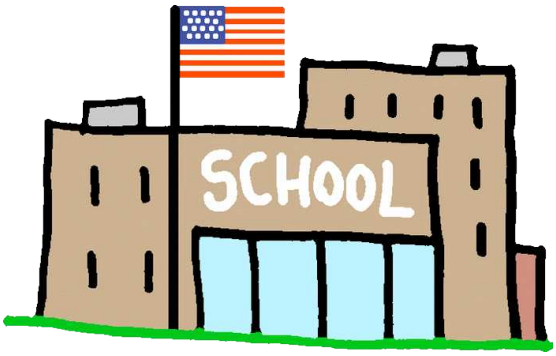
Why Do You Need a CSHP?

IT'S NOT JUST FOR SCIENCE LABS!
In many states, a CSHP is required
anywhere chemicals are in use.

Sure, a **CSHP** meets the requirements for the law –
But more importantly, it...:



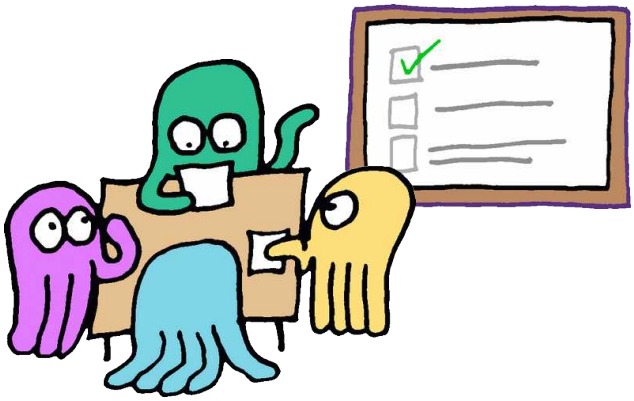
- Sets the **expectation for safety** at the forefront of all chemical operations.
- Enables **chemicals in use to be evaluated** by the team, to help determine where risk exceeds utility.
- Allows for **minimized risk** and a **safer learning environment** in all classroom activities.
- It likely provides YOU with some **protection** if there is an accident. (But DON'T take legal advice from a cartoon octopus!)



REMEMBER:

- **Good teaching** requires **safe use of chemicals**.
- **Learning safety skills** prepares students for **science careers**.

Getting Started:



The CSHP is not an easy document to write. It takes time and investment.

- Make sure you have a strong **Chemical Safety & Hygiene Team** (or Safety Team).
- Successful districts develop policies and write the CSHP **at a district level**, and then create individual, site specific plans as chapters or appendices for each school.
- Many Universities have posted their CSHPs online. **Find a format or template** that works for your district – You don't need to "reinvent the wheel"!
- If you do use a template, make SURE it has all the elements required; Then make it **facility-specific**.

PRO TIP: Divide the required elements among team members; Have one member serve as **Chemical Hygiene Officer**, overseeing the process...

OSHA's Hierarchy of Control Measures

= The basic types of actions a CSHP can prescribe to **minimize risk** & **prepare for emergencies:**
(Listed from **MOST EFFECTIVE** to **LEAST EFFECTIVE**)

ELIMINATION = Disposing of (or not purchasing) a chemical that's just too hazardous. **(MOST EFFECTIVE)**

SUBSTITUTION = Finding a suitable replacement chemical that's safer...

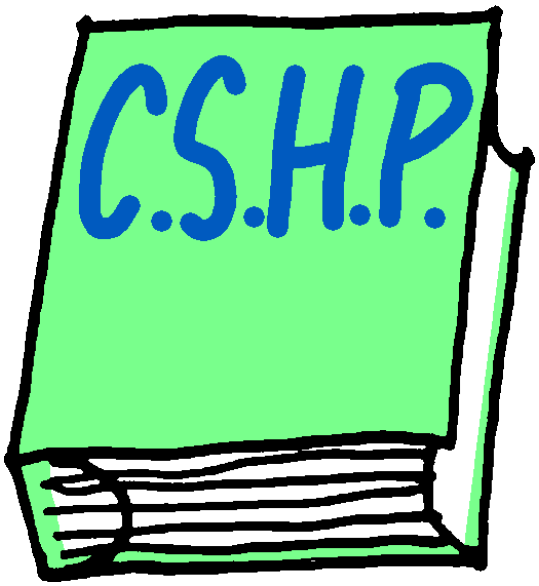
ENGINEERING CONTROLS
ADMINISTRATIVE CONTROLS
= Rules & systems to protect against exposures & prepare for emergencies.

PERSONAL PROTECTIVE EQUIPMENT (PPE) = Goggles, gloves, etc. – The gear & equipment that keeps you safe. **(LEAST EFFECTIVE)**

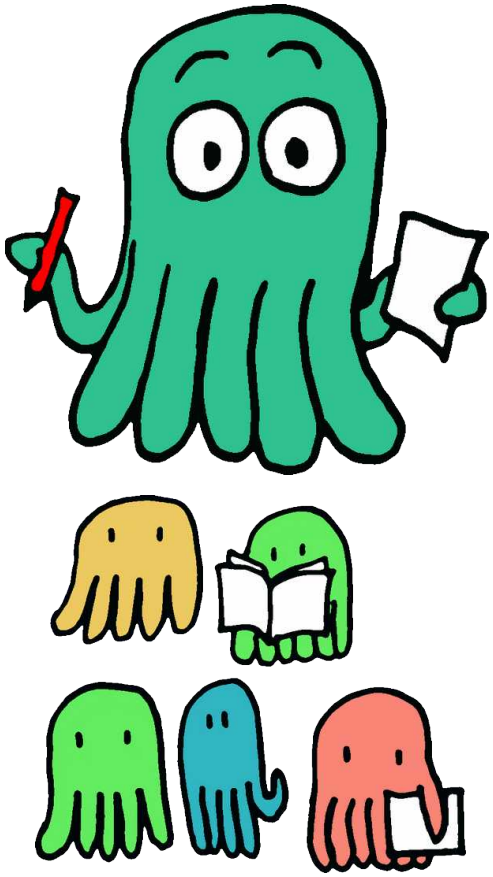
A Tour of Your CSHP:

A CSHP that meets OSHA's requirements contains **specific types of information**, in certain **formats**.

Let's take a tour through these required features, section by section...



SECTION 1: Scope & Application

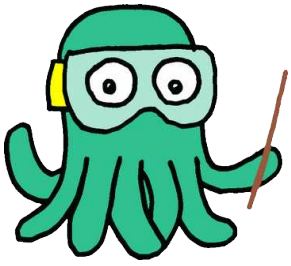


- **Who is covered** by the CSHP?
- Is it just going to be for **"laboratory use of hazardous chemicals?"** (This may not meet your state's requirements…)
- BEST OPTION: Make it **broadly scoped** to address ALL chemical management policies for your entire District.
- **Specific requirements** for each building can be detailed in appendices or chapters in the CSHP.

SECTION 2: Responsibilities

Employer/School District:

- Provides facilities that are in compliance with all applicable **Chemical Safety and Hygiene Standards.**
- **In NH**, DOL requires employers to provide a safe work environment, proper training, and proper safety tools and equipment.
- **OSHA** requires identifying members of a **safety and hygiene committe** and a **Chemical Safety Officer** to implement and maintain the CSHP – All must be qualified by "training or experience."



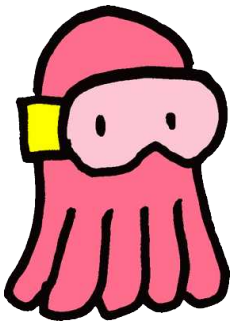
Teachers & Staff:

- **Supervise** all chemical use activities.
- **Report** incidents and safety concerns to CHO
- **Document** all safety training for students
- **Coordinate** procurement with CHO
- **Write lesson plans** to include safety and chemical disposal measures
- **Maintain chemical inventory** of all chemicals used and stored within department

SECTION 2: Responsibilities (Con't)

Chemical Hygiene Officer:

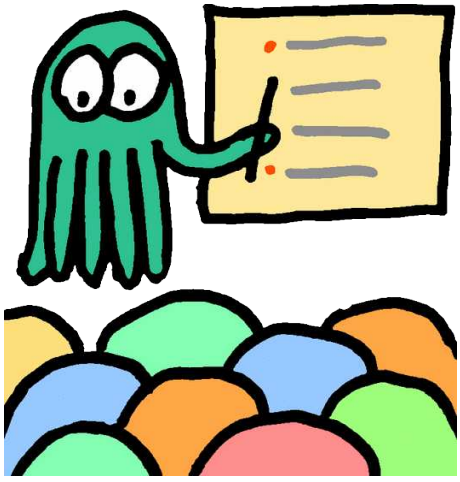
- **Oversees** development & implementation of CSHP,
- **Ensures** SDS are collected/reviewed.
- **Coordinates** with administration and the Chemical Hygiene Committee (Safety Committee, etc.)
- **Develops** Safety Policies and Procedures
- **Reviews** Lesson Plans and Student Safety Contracts
- **Oversees** training, maintenance of safety equipment, inspections, and safety training
- **Maintains** chemical inventory and coordinates review of new chemicals/processes for risk



Students:

- **Read, understand, & follow** Student Safety Agreement
- Ask parents to **sign Student Safety Contract**
- **Follow** classroom instructions.

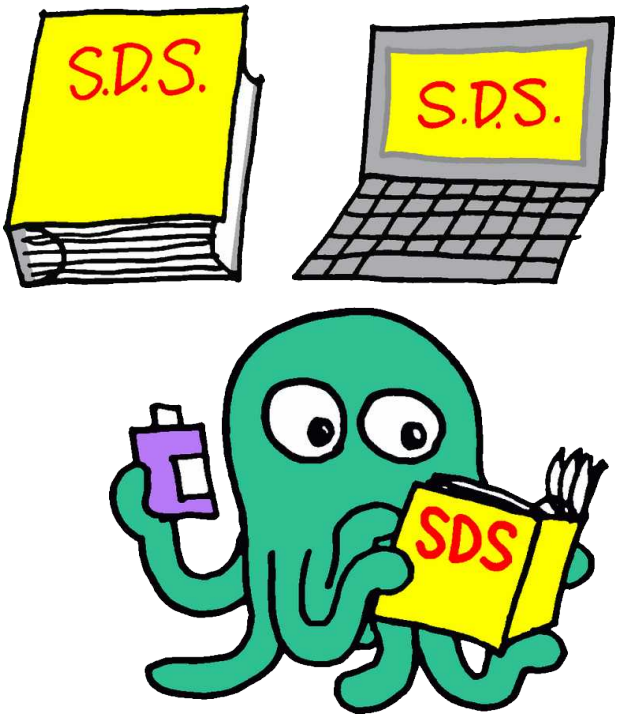
SECTION 3: Information & Training



- Define **where CSHP is located** & how it's accessible.
- **Employee Training** – Topics addressed (not all inclusive):
  - Defining how training will take place, training frequency, and how will understanding be measured.
  - Addressing understanding Safety Data Sheets, safe working requirements, and associated toxicity data.
  - Using Engineering Controls (fume hoods etc.)
  - Defining how to use and maintain **safety equipment** (such as fume hoods and safety showers), what **personal protective equipment** is available, and how to use it.

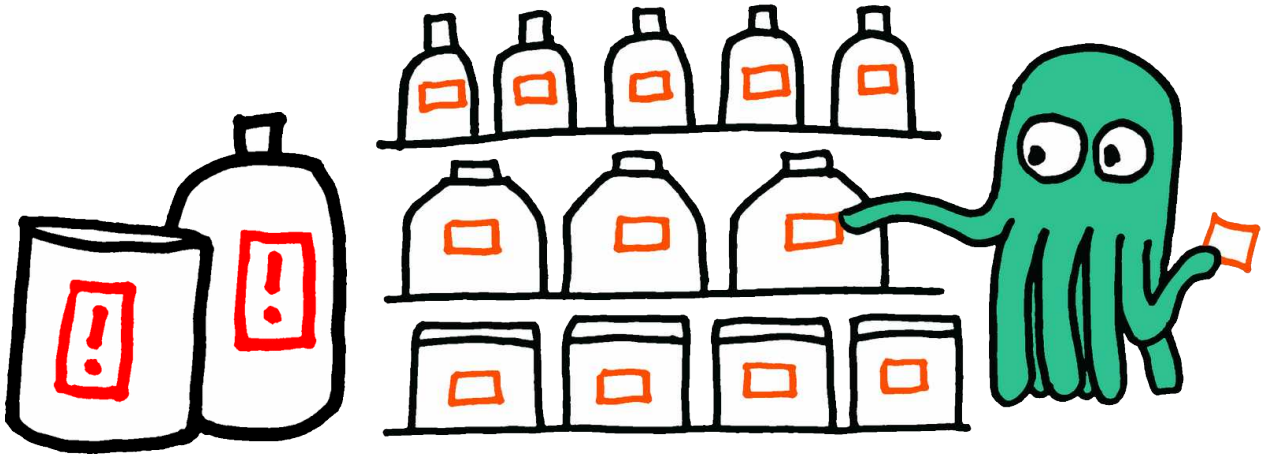
- Establish a procedure for employees to **recognize the signs and symptoms of exposure to hazardous chemicals**, and the steps to take after an exposure.
- Identify instructions on **waste disposal** for all chemical waste.

SECTION 4: Safety Data Sheets (SDS)



- Define where **Safety Data Sheets & Chemical Inventories** will be kept. (Electronic format is fine as long as they are readily accessible)
- Define what the process is if a SDS is **not available** from the manufacturer.

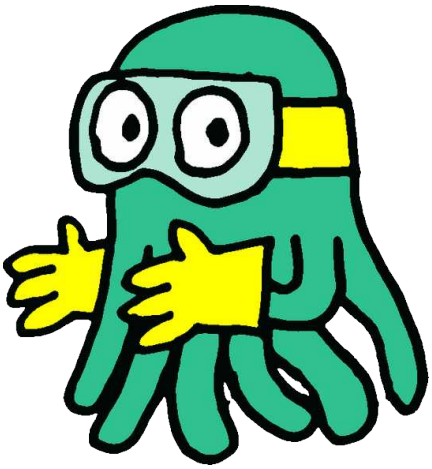
SECTION 5: Chemical Labeling

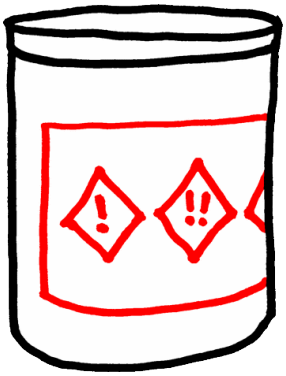


- ALL labels must meet **HazCom Requirements**:
  - ✔ Name of chemical/product
  - ✔ Appropriate pictograms
  - ✔ Manufacturer name/address.

SECTION 6: Standard Operating Procedures

- **Procedures** for anyone using chemicals: procurement, storage, chemical handling, safety requirements during use, and disposal requirements.
- **Lab-specific items:** lab equipment maintenance, spill kit contents and location, handling and disposal of broken glassware.
- **PPE expectations:** eye protection, gloves/hand protection, protective clothing, & work practices (long hair tied back, close-toed shoes).





SECTION 7: Criteria for using Control Measures & PPE:

- This section defines when **safety controls** and **PPE** are required to be used. (For example, what chemicals or experiments must be used under the fume hood.)

SECTION 8: Safety Equipment

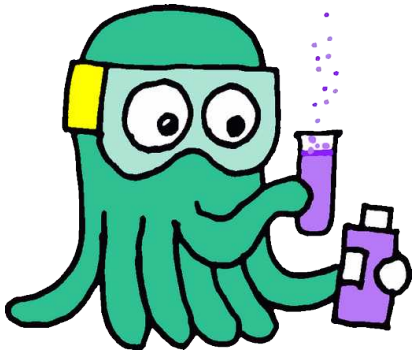
- **Maintenance, upkeep, and training** associated with all safety equipment – Including **maps** of each room's resources, detailed information about the **service schedules** for safety equipment, and **contact information** for the companies that service them.

SECTION 9: Housekeeping, Maintenance, & Inspections

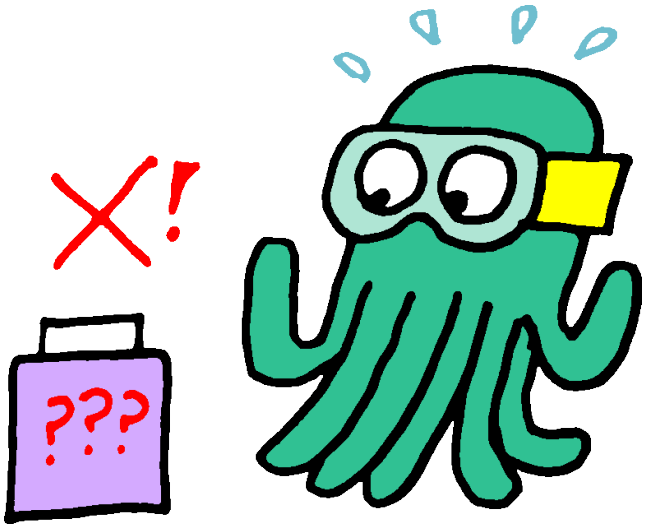
- **Defines requirements** for these areas.
- Helpful to make sure that **manufacturers' requirements** are being met & that expectations are clear.

SECTION 10: Required Approvals

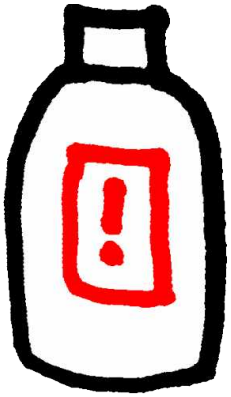
- Defines when the **Safety Committee or Administration** must approve high-risk procedures & uses of chemicals or equipment.



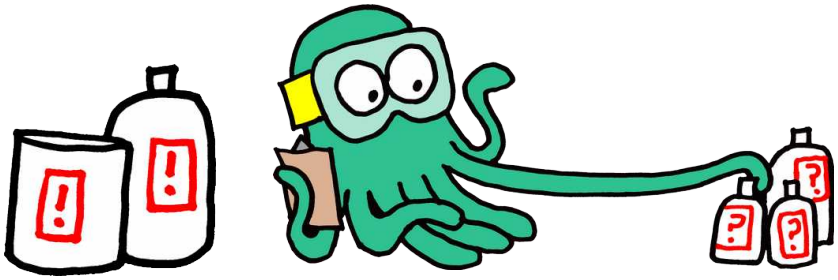
SECTION 11: Additional Protections (for work with Particularly Hazardous Substances)



- **Defines** what "Particularly Hazardous Substances" are.
- Specifies **additional safety measures** required to have them on site.



- This is fairly specific to the **most dangerous chemicals** used in the science lab, including:
  - concentrated acids
  - reactive chemicals (e.g. oxidizers, etc.)

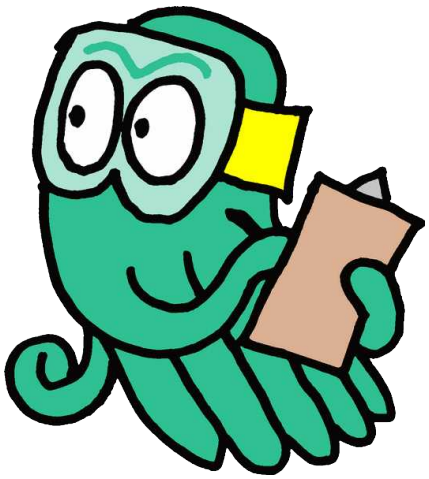


SECTION 12: Emergency Response & Chemical Spills

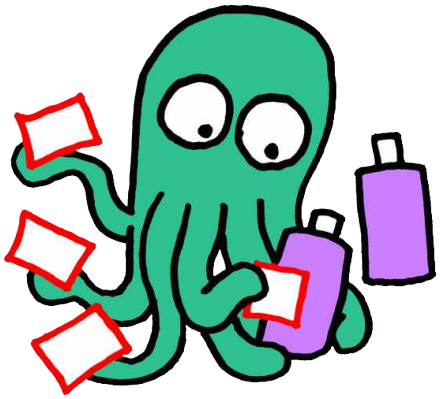
- Defines:
  - ✔ What **equipment** will be used
  - ✔ When **evacuation** should occur
  - ✔ When **medical care** should occur
- **Defines all steps to respond to a chemical spill**, including identifying when it is beyond the capabilities of the employees.
- Much of this can refer to a **district-wide crisis plan** (if the district has identified emergency response in an alternate plan).

SECTION 13: Records

- Defines what **records** must be kept, and where. *(EXAMPLE:If there is an accident, what documentation must be completed, and where is it stored?)*



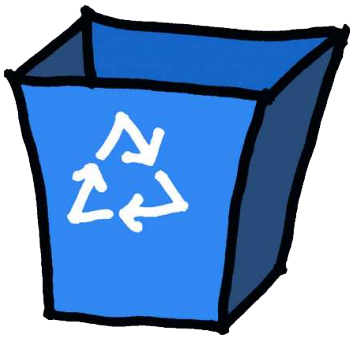
SECTION 14: Signs & Labels



- This can be an overview of the **requirements for signage** identifying hazards. Many of the signage and labeling requirements can be included in **SECTION 6 (Standard Operating Procedures)**.

SECTION 15: Waste Disposal Program

- Defines how all **solid, universal and hazardous waste** will be managed by the facility, including recycling.
- REMEMBER: Due to hazardous waste regulations, procedures must address **the facility as a whole.** *(More waste = more regulation)*
- Consider adding a short goal or section about **waste reduction strategies** here as well.

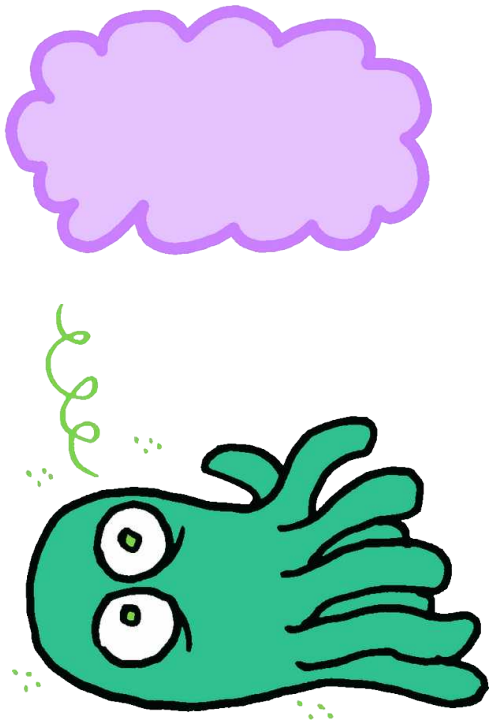


SECTION 16: Air Monitoring

- This is required when there are **airborne concentrations** of toxic substances used on a regular basis.
- This is expensive & confusing – The best strategy to use is to **avoid exposure to airborne toxic substances** by thoroughly evaluating Safety Data Sheets!

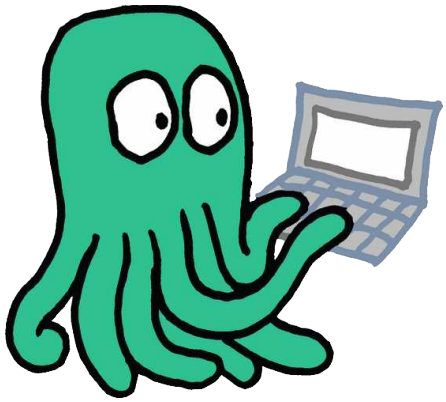
SECTION 17: Medical Program

- **If an exposure occurs** or an employee suspects chemical exposure, OSHA, DOL & DOE require that the employee has a **right to be medically evaluated**.
- This requires evaluation according to **specific state requirements**. (Ask a local expert for help on this one!)



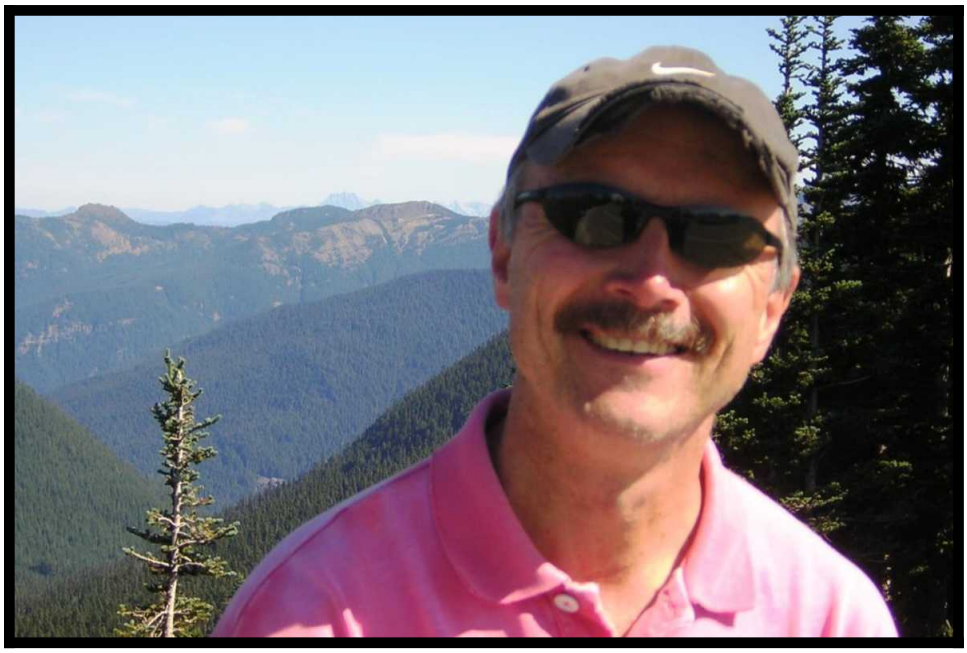
Strategies for Completing your CSHP:

- Use **existing resources** as a model.
- Make sure if you use a template/model, you edit it to be **specific to your facility**.
- Identify an **engaged team** that believes in the effort
- **Work with administrators** to help them understand the process.
- Once you identify a **Chemical Hygiene Officer**, work closely with that person to minimize risk.



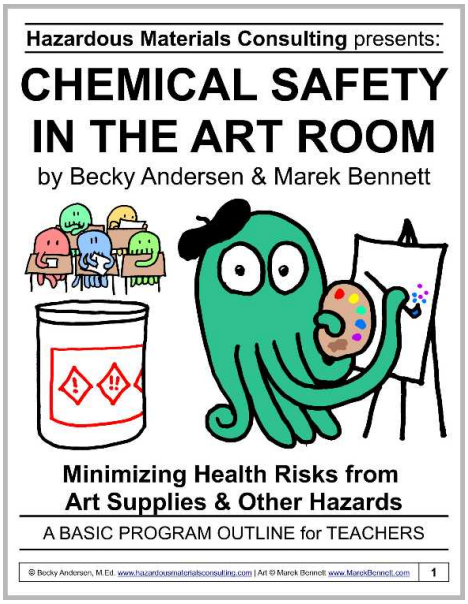
PRO TIPS of SUCCESSFUL DISTRICTS:

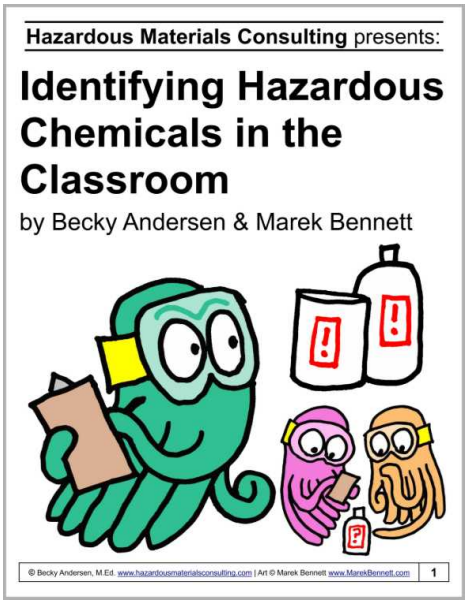
- First, write a CSHP addressing **at the district level** general safety requirements, rules governing risk minimization, waste disposal procedures, and required training.
- Then create separate chapters or appendices that get into the **specific requirements at each school**. High schools, tech schools, bus barns and facilities shops will have more requirements and site specific topics than middle or elementary schools, but ALL schools and facilities that have any chemicals on site need to be included.

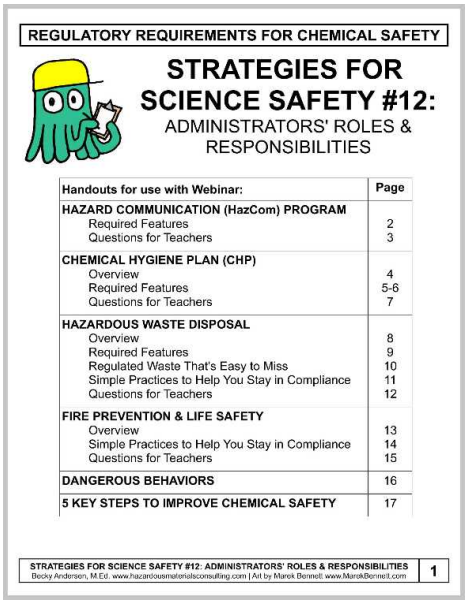


This book is dedicated to the memory of Dave Waddell, a devoted teacher, school chemical safety expert, & friend.

More in this series:

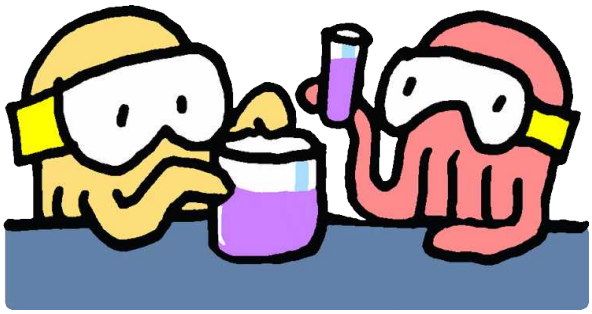






How to Set Up a CHEMICAL SAFETY & HYGIENE PLAN (CSHP)

REMEMBER: While OSHA requires the CSHP only for **lab chemicals**, other state agencies may specify that **ANYONE using chemicals in the facility** must follow a CSHP.



We all have the same goals:

- Keep students safe.
- Keep employees safe.
- Support excellent teaching.

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PROJECT HOST:
Upper Valley Lake Sunapee Regional Planning Commission *www.uvlsrpc.org*
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