



County of Henrico
Office of Emergency Management
And Workplace Safety

Verification	Originator	Revised	Issued
Initials	EMWS	EMWS	EMWS
Date	05/01/2015	11/08/2017	08/01/2019

Safety Manual
Chapter 26 Chemical Hygiene Plan

Area of Application:	County of Henrico General Government & Schools	
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001	11/08/17	Chemical Hygiene Plan template added.
002		

Purpose:

This chapter provides an overview of the Laboratory Safety Standard, 29 CFR 1910.1450, for the protection of employees exposed to hazardous materials and chemicals in County laboratories.

Scope:

All Henrico County laboratory employees who may be exposed to hazardous chemicals and materials are required to follow the provisions of the County of Henrico Chemical Hygiene Plan (CHP) on the County's Safety Manual webpage. Work areas defined as laboratories are exempt from the Hazard Communication Standard (29 CFR 1910.1200) and must comply with the Laboratory Safety Standard instead (29 CFR 1910.1450).

Program Administration:

With guidance from the Office of Emergency Management and Workplace Safety (EMWS), affected departments will establish a written CHP that will address the site-specific conditions so that the requirements of the VOSH Laboratory Standard are met.

General Principles:

The CHP helps to ensure that employee exposure to laboratory hazards is minimized.

A. Chemical exposures:

Exposure to any chemicals should be kept to a minimum. Few laboratory chemicals are without hazards. General precautions for handling all chemicals should be adopted so that accidental inhalation, ingestion, and skin contact is minimized or avoided.

B. Minimize risk of exposure:

Exposure should also be minimized for chemicals and substances with no known hazards. Employees should assume that unknown substances are toxic.

C. Ensure Adequate Ventilation:

Adequate ventilation must be provided. Building ventilation supplies breathing air to the general work area. Room air also provides makeup air for the laboratory exhaust system, i.e., the chemical fume hood. Chemical fume hoods shall be certified annually by a qualified contractor. Hoods shall be maintained in good working order at all times or taken out of service until repairs are made.



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D. Use the Chemical Hygiene Plan

Implementation and maintenance of the Chemical Hygiene Plan shall be continuous. The CHP shall be reviewed annually, whenever work procedures change, and updated as needed.

E. Permissible Exposure Limits and Threshold Limit Values

The Permissible Exposure Limits (PEL) promulgated by OSHA and the Threshold Limit Values (TLV) published by the American Conference of Governmental Industrial Hygienists (ACGIH) shall not be exceeded during any Laboratory activities. If the PEL or TLV of any substance

F. Hazardous Waste Disposal

Hazardous waste will be transported off-site by a qualified hazardous waste contractor according to Department of Environmental Quality policies. Affected departments will maintain records of the waste pick-ups for one calendar year.

Responsibility:

Department Heads, or their designees, will:

- Ensure that all employees know, understand, and follow the CHP.
- Ensure an annual laboratory safety assessment is performed by the Office of EMWS.

Assigned Personnel:

- Each laboratory employee will be trained to perform his/her assigned duties according to the procedures of his/her site-specific Chemical Hygiene Plan.
- Will adhere to the Chemical Hygiene Plan as his/her job requirements.

General Chemical Classifications:

- Flammable** – Any solid, liquid, vapor or gas that ignites easily and burns rapidly.
- Corrosive** – A chemical that causes visible destruction of or irreversible alterations in living tissue by chemical action at the site of contact, or that causes a severe corrosion rate in steel or aluminum.
- Explosive** – A material that produces a sudden, almost instantaneous release of pressure, gas and heat when subjected to abrupt shock, pressure or high temperature.
- Reactive** - A substance that has the tendency to undergo a chemical reaction either by itself or with other material with the release of energy.
- Oxidizer** – A substance that yields oxygen readily to stimulate combustion of organic matter.
- Compressed Gases** - Any material which is a gas at normal temperature and pressure, and which is contained under pressure as a dissolved gas or liquefied by compression or refrigeration.
- Poison** - A substance that through its chemical action usually causes injury, illness, impairment and even death of an organism.
- Radioactive** – A substance that gives off radiant energy in the form of particles or rays by the disintegration of atomic nuclei.

Storage Precautions:

- All chemicals will be stored according to Safety Data Sheet guidelines and substance compatibility.
- Store only as much chemical inventory as will be used in a reasonable amount of time. Store chemicals in protected areas to avoid inadvertent spills or breakage. Storage conditions will limit



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or eliminate exposure to heat or direct sunlight whenever possible.

Labels:

- A. Containers used to store chemicals and/or solutions in laboratory work areas must be labeled. All labels shall contain the following information:
 1. Name of the chemical and manufacturer.
 2. Strength of the solution, if applicable.
 3. Date solution was prepared, if applicable.
 4. Date chemical or solution was poured into container.
 5. Initials of the person who mixed the solution, if applicable.
- B. Other precautionary terms such as; DANGER, WARNING, FLAMMABLE, TOXIC, etc. will be used when applicable.
- C. A Hazardous Materials Identification System (HMIS) label may be used by copying the information from the manufacturer's original container. **NOTE:** Newer containers are not required to display this label (under the Globally Harmonized System). Check the most current Safety Data Sheet (SDS) for hazard warnings.

Example of the HMIS label:

HEALTH	<input type="checkbox"/>
FLAMMABILITY	<input type="checkbox"/>
REACTIVITY	<input type="checkbox"/>
PERSONAL PROTECTION	<input type="checkbox"/>

Spill Response:

Refer to requirements outlined in the Henrico County Environmental Standard Operating Procedure 003 - Spill Response and Notification.

Waste Disposal:



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Refer to requirements outlined in the Henrico County Environmental Standard Operating Procedure 004 - Hazardous Waste Management

Personnel Requiring Medical Treatment:

If an employee requires medical treatment as the result of an injury, exposure or illness, do the following:

- A. Call Emergency Response – 9-1-1
- B. Call Poison Control -1-800-222-1222
- C. Obtain a hard copy of the Safety Data Sheet of the chemical and provide it to EMTs or other medical authorities.

Exposure Reduction Actions:

The following measures, as previously stated, will be used to reduce the probability of employee exposure to hazardous chemicals and or vapors:

- A. Perform procedures under a properly functioning fume hood.
- B. Wear protective eyewear and face shields when appropriate.
- C. Maintain good personal hygiene (no eating, drinking, applying lip balm, etc.,) in laboratory work areas.
- D. Wear appropriate protective clothing such a hazard-specific gloves and laboratory coats.

Protective and Safety Equipment:

- A. All personal protective equipment, such as laboratory coats, hearing protection, eyewear, gloves, safety-toe shoes, respirators and goggles will be provided at no cost to the employee. (Note: No County of Henrico employee shall wear a tight-fitting respirator without participating in the County's Respiratory Protection Program. For guidance, contact EMWS at 501-5661.
- B. The safety equipment shall be appropriate for the hazards in the laboratory. Refer to the SDS to ensure the PPE complies with the hazards as specified in the SDS.
- C. Other protective equipment such as safety shower, eyewash stations, fire extinguishers, fire alarms, and fire blankets shall be provided as needed. All safety equipment shall be maintained according to VOSH and ANSI standards and/or recommendations.

Disclaimer:

Although every effort has been made to ensure this Chapter addresses all applicable regulations, it is the responsibility of each department to maintain compliance.