

	Environmental Health and Safety Manual	
	Policy Number: <b>EH&amp;S 4-3</b>	
Title: <b>Chemical Carcinogen Usage</b>		
Effective Date: 10/80	Revision: 2/97	Number of Pages: 6

**PURPOSE:** To establish guidelines for the handling and disposal of carcinogenic materials outside the laboratory. All departments should develop internal policies for their specific usage.

**SCOPE:** All nonlaboratory users of chemical carcinogens. Laboratory use of chemical carcinogens is covered in the Chemical Hygiene Plan.

**DEFINITIONS:**

**Carcinogens:** A chemical that is regulated by OSHA as a carcinogen; listed under the category "known to be carcinogens" or "reasonably anticipated to be carcinogens" in the Annual Report on Carcinogens published by the National Toxicology Program (NTP); or listed under Group 1 "carcinogenic to humans", Group 2A or 2B by the International Agency for Research on Cancer Monographs (IARC).

**POLICY:**

1. All departments must maintain a current hazardous materials inventory, chemical labels, and material safety data sheets (MSDSs) for hazardous chemicals.
2. Department using chemicals which appear on the OSHA regulated carcinogen list (29 CFR 1910.1000 Subpart Z) must be handled as outlined below. See Appendix A for a list of these carcinogens.

**PROCEDURES:****I. Handling of the Material**

1. Use of an alternate noncarcinogenic material is the best method in controlling the exposure of employees to carcinogenic material.
2. If this cannot be accomplished, the following methods can be utilized:
  - a. Containment or isolation of the process is the best method chosen to be used when handling a particular carcinogen.
    1. Use a closed system (glove box or similar) to handle the carcinogen in all its phases.
    2. All materials coming in contact with the carcinogen must remain under the enclosure.
    3. The system should remain under negative pressure to prevent leakage to the environment.
  - b. An alternate method is to isolate the employee using automatic equipment operated by that employee from a control room or booth.
  - c. The least preferable method is personal protective equipment such as goggles, gloves, barrier creams, respirators and protective clothing. This equipment should not be used as the only means of preventing exposure during routine operations. The use of this equipment, however, is required:
    1. Where a leak or spill develops.
    2. While control systems are being repaired, installed, tested, or not yet available.
    3. Where local exhaust is insufficient to completely control the carcinogen.
    4. When decontamination cannot be accomplished in enclosed

-Rev. 2/97-

containment.

5. When safety equipment fails.

3. Regulated Areas

- a. A Regulated Area must be established wherever the occupational exposure to airborne concentrations of the carcinogen may exceed the Time Weighted Average (TWA) or wherever the carcinogen concentration exceeds or can reasonably be expected to exceed the Short Term Exposure Limit (STEL) or Excursion Limit.
- b. Access to Regulated Areas shall be limited to authorized personnel.
- c. Regulated Areas must be demarcated to warn others.

4. Routine monitoring of the work area should be done, including air monitoring and wipe surveys. This will ensure the effectiveness of control systems used to contain the material. Some substances may require analysis of blood, urine, or specific body tissues which may show that workers have been exposed to conditions which allow carcinogens to enter the body.

5. Authorized personnel are those employees who have been specifically assigned by the supervisor of the area with duties which require them to work with carcinogenic materials. Before being allowed to do so, an employee must have proper annual training on the handling of the material including:

- a. an explanation of the hazard and other toxic effects of the compound.
- b. information to help recognize the conditions which may result in the release of the substance.
- c. emergency procedures, including the role of the employee.
- d. decontamination practices and procedures.
- e. purpose of first aid procedures.
- f. purpose of medical surveillance.

-Rev. 2/97-

- g. scope of the examination, including the meaning of results and any appropriate methods of self-examination.

## **II. Emergency Procedures**

1. For spills of any amount of a chemical carcinogen outside of the hood or other containment device, immediately evacuate the area and close all doors.
2. Contact Public Safety at 333 and request the Hazardous Materials (HAZMAT) Response Team.
3. Inform the Hazardous Materials Response Team of the location, the name of the material that spilled, and the approximate quantity of spilled material.
4. Do not reenter the area until advised by the Department of Environmental Health and Safety that it is safe to do so.
5. Special medical surveillance by a physician must be started within 24 hours for all employees present in the potentially affected area at the time of the emergency. Any employee known to have come in contact with the carcinogen must shower as soon as possible unless this is inadvisable because of physical injuries.
6. An Incident Form or Employee Accident form must be filled out and submitted.

## **III. Disposal and Decontamination**

1. Decontamination of areas must be performed only by those persons wearing the appropriate personal protective equipment.
2. Entrance to areas where such work is performed must be posted with signs stating:

**CANCER-SUSPECT AGENT EXPOSED IN THIS AREA**  
**IMPERVIOUS SUIT INCLUDING GLOVES, BOOTS, AND AIR-**  
**SUPPLIED HOOD REQUIRED AT ALL TIMES**  
**AUTHORIZED PERSONNEL ONLY**

3. All waste, equipment and protective garments must be either decontaminated or

-Rev. 2/97-

properly contained for disposal before leaving the area.

4. Disposal of carcinogenic waste will follow the same format as that of hazardous chemicals. They must be in impervious sealed containers, properly labelled with a manifest filed with the Department of Environmental Health and Safety. They must be assured that the material is properly sealed and/or decontaminated before removal.

#### **IV. Suspected Carcinogens**

All suspected carcinogens should be handled in a similar fashion by their users.

#### **INQUIRIES/REQUESTS:**

Environmental Health and Safety  
110 Suffolk Hall  
Zip 6200  
Main Office: 632-6410  
FAX: 632-9683

#### **RELATED FORMS:**

#### **RELATED DOCUMENTS:** 29 CFR 1910.1000 Subpart Z

*Hazard Communication Right to Know, Policy 4-1*

*Chemical Hygiene Plan, Policy 4-2*

*Laboratory Emergency Spill Plan, Policy 2-3*

*Hazardous Waste Management, Policy 8-1*

-Rev. 2/97-

**Appendix A****Regulated Chemical Carcinogens****1996**

The following chemicals are listed in 29 CFR 1910.1000, Subpart Z, and are regulated by OSHA and PESH as carcinogens. If any of these chemicals are used in your department, please contact the Department of Environmental Health and Safety for further safety and health information.

1910.1001	Asbestos
1910.1003	4-Nitrobiphenyl
1910.1004	alpha-Naphthylamine
1910.1006	Methyl chloromethyl ether
1910.1007	3,3-Dichlorobenzidine and its salts
1910.1008	bis-Chloromethyl ether
1910.1009	beta-Naphthylamine
1910.1010	Benzidine
1910.1011	4-Aminodiphenyl
1910.1012	Ethyleneimine
1910.1013	beta-Propiolactone
1910.1014	2-Acetylaminofluorene
1910.1015	4-Dimethylaminoazobenzene
1910.1016	N-Nitrosodiethylamine
1910.1017	Vinyl Chloride
1910.1018	Inorganic Arsenic
1910.1028	Benzene
1910.1044	1,2-dibromo-3-chloropropane
1910.1045	Acrylonitrile
1910.1047	Ethylene Oxide
1910.1048	Formaldehyde
1910.1050	Methylenedianiline

-Rev. 2/97-