CHEMICAL HYGIENE PLAN
PALOMAR COMMUNITY COLLEGE
SAN MARCOS, CALIFORNIA

PREPARED FOR:
Palomar Community College
San Marcos, California

PREPARED BY:
Ninyo & Moore
Geotechnical and Environmental Sciences Consultants
5710 Ruffin Road
San Diego, California 92123

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Approval and acceptance of the Palomar Community College Chemical Hygiene Plan has been given by the following:

Adrian Gonzales, Interim Superintendent/President

Ron Perez, Assistant Superintendent/Vice President of Finance and Administrative Services

Dan Sourbeer, Interim Assistant Superintendent/Vice President, Instructional Services

Derrick J. Johnson, Supervisor, Environmental Health & Safety

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LIST OF ACRONYMS AND DEFINITIONS

ACGIH	American Conference of Governmental Industrial Hygienists
Acute	An adverse effect with symptoms of high severity that develop over a short period of time
Allergen	An agent capable of producing an immunologic reaction
Cal/OSHA	California Occupational Safety and Health
CFR	Code of Federal Regulations
CHP	Chemical Hygiene Plan
Chronic	An adverse effect with symptoms that develop slowly over a long period of time or that frequently recur
Combustible	Able to catch fire and burn; liquids with a flash point between 100 and 200 °F
DOT	Department of Transportation
Employee	An individual employed in a laboratory workplace who may be exposed to hazardous chemicals in the course of his or her assignment
EPA	Environmental Protection Agency
Flammable	Capable of being easily ignited and of burning with extreme rapidity; liquids with a flash point below 100 °F
Flashpoint	This is the minimum temperature at which a liquid gives off vapor in sufficient concentrations to ignite. The flashpoint can be found in the FIRE sections of most MSDSs
Hazardous	A chemical for which there is statistically significant evidence that acute or chronic health effects may occur in exposed persons
HMD	San Diego County, Department of Environmental Health, Hazardous Materials Division
IARC	International Agency for Research on Cancer
Laboratory	A facility where the "laboratory use of hazardous chemicals" occurs; a workplace where relatively small quantities of hazardous chemicals are used on a non-production basis
LC 50	The concentration of a substance in air that causes death in 50% of the animals exposed by inhalation, a measure of acute toxicity
LD 50	The dose that causes death in 50% of the animals exposed by swallowing a substance, a measure of acute toxicity
MW	Medical Waste. Any solid waste that is generated in the diagnosis, treatment, or immunization of human beings or animals, in research, or in the production or testing of biologicals.
MSDS	Material Safety Data Sheet (See SDS)
Mutagen	Chemical which causes chromosomal damage (mutations)
NIOSH	National Institute for Occupational Safety and Health
NTP	National Toxicology Program
PCC	Palomar Community College
PEL	Permissible Exposure Limit. The legally allowed concentration in the workplace, generally for an 8-hour shift, 40 hours per week
PIW	Potentially Infectious Waste. Any materials that have come in contact with or been contaminated by cultures of living organisms
REL	Recommended Exposure Level developed and promulgated by NIOSH
SDS	Safety Data Sheet (formerly Material Safety Data Sheet)
Sensitizer	Chemical capable of creating an allergic reaction in certain individuals after an initial exposure
SOP	Standard Operating Procedure
Teratogen	Chemical which affects fetal development
TLV	Threshold Limit Value. The amount of exposure generally considered safe for a normal adult employee in an 8-hour day. These exposure limits are developed and promulgated by ACGIH
TWA	Time Weighted Average
Water-reactive	A chemical that reacts with water to release a gas that is either flammable or presents a health hazard

CCR Title 8, Section 5191(e)(1) Chemical Hygiene Plan.
(1) Where hazardous chemicals as defined by this regulation are used in the workplace, an employer shall develop and carry out the provisions of a written Chemical Hygiene Plan that provides for both of the following:
(a) Protecting employees from health hazards that are associated with hazardous chemicals in that laboratory.
(b) Keeping exposures below the limits specified in Subsection 5191(c)

EXECUTIVE SUMMARY

The California Occupational Safety and Health (Cal/OSHA) standard: Occupational Exposure to Hazardous Chemicals in Laboratories (8 CCR 5191) extends protections to employees who are assigned to a laboratory workplace. The standard requires employers to develop a Chemical Hygiene Plan (CHP) to protect workers from hazards in the laboratory. The two broad performance goals for the Palomar Community College (PCC) Chemical Hygiene Plan can be stated as follows. First, to ensure adequate protection of faculty, staff, and students from any hazards associated with the laboratory use chemicals within campus laboratories. Second, to keep employee and student exposure to chemicals below Cal/OSHA specified permissible exposure limits (PEL's).

The PCC Chemical Hygiene Plan is available to all employees, their representatives, and if necessary, representatives of Cal/OSHA. It is available to students and student employees, for whom its implementation is *mandatory*. Student employment involving the laboratory use of hazardous chemicals is *contingent* upon following the described safety and environmental guidelines in this plan.

All laboratory workers must be made aware of this plan. New employees should review the plan and receive safety training before beginning work with hazardous chemicals. A copy of this plan must be immediately available to all laboratory workers at all times.

The PCC Chemical Hygiene Plan has been reviewed and approved by the Supervisor, Environmental Health & Safety, the dean of Mathematics and the Natural and Health Sciences, the campus Chemical Hygiene Officer or campus designee and the Interim Superintendent/ President of the College. The effectiveness of the Chemical Hygiene Plan will be reviewed and evaluated at least annually and updated as necessary. Discussion of the plan is encouraged, and improvements, proposed changes or questions relating to policy should be directed to the Chemical Hygiene Officer, Derrick Johnson. The Chemical Hygiene Officer or campus designee, will reevaluate, revise, and update the plan periodically to reflect new safety information, better safety practices, and greater ease of implementation in accordance with the Laboratory Standard.

The Chemical Hygiene Plan contains eight distinct elements and safety measures specified by the Cal/OSHA standard. These measures are designed to ensure employee protection in each of the following areas:

1) Standard Operating Procedures to be used when working with hazardous chemicals;

2) Criteria to be used to determine and implement control measures to reduce exposure to hazardous chemicals;

3) Measures to be taken to ensure that fume hoods and other protective equipment are functioning properly and comply with Section 5154.1 of the standard;

4) The employee information and training program;

5) Particular operations or procedures that are hazardous enough that prior approval will be required before employees carry them out;

6) A medical examination and consultation policy;

7) Designation of personnel responsible for implementation of the Chemical Hygiene Plan;

8) Additional provisions for work with "select carcinogens", reproductive toxins, and substances with "high acute toxicity."

Each of these elements is discussed in the eight chapters of this Chemical Hygiene Plan and each chapter begins with an excerpt from the Cal/OSHA standard describing the required content.

1. STANDARD OPERATING PROCEDURES

CCR Title 8, Section 5191(e)(1) Chemical Hygiene Plan.
(1) Where hazardous chemicals as defined by this regulation are used in the workplace, an employer shall develop and carry out the provisions of a written Chemical Hygiene Plan that provides for both of the following:
(a) Protecting employees from health hazards that are associated with hazardous chemicals in that laboratory.
(b) Keeping exposures below the limits specified in Subsection 5191(c)

1.1. Overview

Standard operating procedures are work practices and policies which have been deemed necessary to protect employees from chemical hazards in the laboratory. While these policies cannot anticipate every possible hazard or situation, they do describe those practices fundamental to good chemical hygiene under most circumstances.

Many of the principles that should be used when working with laboratory chemicals can be expressed in four general rules.

(a) Minimize personal exposure to all laboratory chemicals, even to those of no known risk. Since few laboratory chemicals are without hazard, and specific lists for each and every chemical would require many volumes, general guidelines are adopted for all laboratory work. In all cases skin contact, inhalation or ingestion of laboratory chemicals should be avoided.

(b) Do not underestimate risks. Take special precautions for substances which present special hazards.

(c) Maintain adequate ventilation. The best way to prevent exposure to airborne substances is to provide adequate ventilation, through the use of hoods and other ventilation devices.

(d) Do not exceed the Permissible Exposure Limits (PEL's) established by OSHA, or the Threshold Limit Values (TLV's) set by the American Conference of Governmental Industrial Hygienists.

In addition to the general operating procedures discussed below, each specific laboratory operation that involves significant hazards should have its own standard operating procedure developed. These procedures must be developed in a manner appropriate to the circumstances around such use. Procedures may differ for use of the same material in different settings and when used in different quantities. Guidelines illustrated here apply to generally hazard

ous materials while other sections of the CHP apply to extremely hazardous chemicals or special measures. Each supervisor or supervising faculty member should develop similar procedures for the safe handling of hazardous laboratory chemicals used within the context of their respective laboratories.

1.2. General Operational Procedures

1.2.1. Basic Principles for Chemical Handling

General guidelines for working with laboratory chemicals are found throughout the Chemical Hygiene Plan. Specific guidelines and procedures are also described in later sections of the Chemical Hygiene Plan. Most of these guidelines are simple, "common-sense" safety practices. Identifying potential laboratory hazards, anticipating the consequences, and reducing or eliminating the risks by using appropriate "common-sense" safety precautions is the best approach to working with laboratory chemicals. Specific principles follow.

a) Exposure to all chemicals shall be minimized.

b) Risk determination shall be conservative in nature.

c) Any chemical mixture shall be assumed to be as toxic as its most toxic component.

d) Substances of unknown toxicity shall be assumed to be toxic.

e) Laboratory personnel shall be familiar with the symptoms of exposure for the chemicals with which they work and the precautions necessary to prevent exposure.

f) The intent and procedures of this Chemical Hygiene Plan shall be adhered to continuously.

g) In all cases of chemical exposure, neither the OSHA PEL’s, nor the ACGIH TLVs shall be exceeded.

h) The engineering controls and safety equipment in the laboratory shall be utilized and inspected in accordance with the procedures set forth in this plan.

i) Specific precautions based on the toxicological characteristics of individual chemicals, shall be implemented as deemed necessary by all individuals with authorization for entry and access to chemicals.

1.2.2. Selection of Chemicals

Before a chemical substance is selected for use in an operation, process or laboratory experiment, the supervisor or supervising faculty member should review the potential hazards of the substance under the conditions it will be used, and determine whether safer alternatives are available. The conditions in the lab at the time of use should also be considered to assure adequate ventilation, compatibility with other chemicals in use and the relative risk to exposure ratio. Other general approaches include:

a) Seek information and advice about hazards, plan appropriate protective procedures, and plan positioning of equipment before beginning any new operation.

b) Prior to obtaining a chemical, review the Safety Data Sheet (SDS) (or MSDS) for that substance with attention given to the reactivity and health hazard sections, considering specifically how the chemical will be used.

c) Remember that in many cases, these chemicals will be used by students with a minimum level of safety training. At all times select the chemical with the least toxicity and lowest degree of physical hazard.

1.2.3. Chemical Procurement

The decision to procure a chemical shall be a commitment to handle and use the chemical properly from initial receipt to ultimate disposal. The following principles apply.

a) Only chemicals appropriate to the department's ventilation system, storage facility and PCC disposal arrangements shall be used.

b) Information on the proper handling, storage, and disposal of all chemicals shall be available to the involved personnel prior to their procurement.

c) Chemicals currently in use in the laboratory may be reordered by the laboratory technician(s) as needed to ensure the smooth functioning of the instructional laboratories. Such ordering shall require the written approval of the department chair. Before processing an order that has been approved by the department chair, the laboratory technician(s) shall ensure that an updated SDS or MSDS is on file. If no SDS is on file for a chemical currently in use, the laboratory technician(s) shall contact the supplier of the chemical and request an SDS for the chemical on hand.

d) Requests for procurement of new chemicals (not currently in use in the laboratory) shall be submitted for review to the Chemical Hygiene Officer or campus designee. The Chemical Hygiene Officer or campus designee shall ensure that the use of such chemicals is appropriate to the facilities. In addition, the Chemical Hygiene Officer or campus designee shall ensure that stockroom personnel are apprised of any special precautions to be followed in handling the chemical when it is received. After the Chemical Hygiene Officer or campus designee has reviewed the request for a new chemical, the order must be processed through the usual procedures.

e) Chemical containers shall not be accepted without accompanying labels and packaging in accordance with appropriate regulations. All chemical containers shall be dated when received. SDSs must be reviewed by the recipient and filed in the SDS log.

1.2.4. Transportation of Chemicals between Work and Storage Areas

In accordance with the California Occupational Safety and Health Acts, PCC has established a written hazard communication program. This program identifies the instructional lab technician as responsible for the proper labeling of incoming containers and maintaining a current file of Safety Data Sheets. Local laboratory personnel are responsible for maintaining complete labeling of secondary containers and for maintaining a departmental SDS file on materials employees may be exposed to in their work. In addition to the content of the Hazard Communication Program, the following precautions and procedures should be observed:

a) The time and route of chemical transport should be planned to minimize potential for exposure to large numbers of people in the event of an incident

b) All containers of chemicals should be carried within a second container capable of containing the substance if the first container breaks or leaks. Employees should use a rubber pail or a cardboard box and appropriate cart as necessary.

c) The total amount transported should be kept small on any single trip (5 gallons is commonly recommended as a maximum quantity)

d) Only freight elevators (where available) should be used to transport chemicals, not stairs. Where a freight elevator is not available, a passenger elevator should be temporarily secured during transport.

e) Gas cylinders must be stored and transported with their caps in place. Large cylinders must be transported using a cylinder cart.

f) Medical waste should be transported within a closed 5-gallon bucket with "Biohazard" stickers on both the bucket and the lid.

1.2.5. Chemical Storage

1.2.5.1. General Guidelines

The following procedures and guidelines apply to all storage of laboratory chemicals, both for long-term storage and for temporary storage in the labs. Quantities present in the labs should be kept to minimums and be limited to only those materials needed for the current procedures.

a) Received chemicals shall be moved immediately to the designated storage area. Large glass containers shall be transported to the storage areas in shipping containers.

b) Chemicals shall be segregated so as to keep incompatible chemicals separated.

c) Mineral acids shall be stored in a dedicated cabinet. Nitric acid shall be segregated from other acids. Acid-sensitive materials shall be protected from contact with acids.

d) Highly toxic chemicals shall be stored in unbreakable secondary containers.

e) The storage area shall be accessible during normal working hours and is under the control of the laboratory technician. Chemicals shall not be removed from the storage area without notifying the laboratory technician. When the laboratory technician is not present, such notification shall be made by completion of a sign-out sheet.

f) When an instructor needs to remove special equipment and/or chemicals for demonstration purposes, whenever possible the instructor should notify the laboratory technician and shall bring the special equipment and/or chemicals back to the stockroom.

g) Chemicals shall not be stored in the instructional laboratories. The container size shall be the minimum convenient. Containers shall be chosen to facilitate student transfer and handling of the materials without spillage.

h) The storage area shall be inspected weekly and the condition of stored chemicals shall be examined at least annually by a laboratory technician for replacement, deterioration, and container integrity. These inspections shall determine whether any corrosion, deterioration, or damage has occurred to the storage facility as a result of leaking chemicals.

i) An updated inventory of chemicals in the storage area shall be maintained by the laboratory technician. A copy of this inventory shall be readily available to all laboratory personnel. Unneeded and outdated chemicals shall be properly discarded.

j) Do not store chemicals above 6 feet and do not store them on the floor.

k) Avoid storing chemicals in fume hoods not designated for storage. If short-term storage in fume hoods must take place, insure that the fume hood will be in continuous operation overnight and on weekends.

l) Store chemicals on lipped shelves which are securely attached to the wall.

m) Use chemically resistant trays for storage of corrosive liquids and solvents.

n) Store chemicals away from heat, out of direct sunlight, and away from high traffic areas.

o) Return chemicals to the stockroom when they are no longer being used for a class experiment or for research.

p) Store large gas cylinders upright, away from heat sources, and securely chained.

q) All gas cylinders not in use should be stored with the cap in place.

r) Passageways, stairways and hallways should not be used as storage areas. Access to exits, emergency equipment and utility controls should never be blocked.

1.2.6. Chemical Classes and Separation of Hazardous Chemicals

The primary concerns for chemical storage are minimizing the amounts, avoiding contact between incompatible chemicals and ensuring that hazardous storage conditions (inadequate ventilation, light, heat, etc) are not present. Because an alphabetical storage

system may place incompatible chemicals next to each other, group chemicals according to their hazard category (i.e., acids, bases, flammables, etc.) first, then alphabetically (where appropriate) within that group. In some cases, because of container type or size, alphabetical order will not be possible.

The following guidelines should be used when storing various classes of chemicals:

a) Flammables, both liquid and solid, should be kept in a locking, fireproof cabinet. If flammables must be stored cold, an intrinsically safe "explosion-proof" or "explosion-safe" refrigerator or cold room should be used.

b) Corrosives should be stored in a cool, dry place separate from all other chemicals. There are four general types of corrosive compounds: acids, bases, oxidizers, and reducing agents. The four different types should be stored separately from one another.

c) Reactive compounds which cannot be exposed to air or water should be stored separately in appropriate air or water-tight containers respectively. They should be kept in a cool, dry place.

d) Certain types of reactive compounds should receive special treatment. For example: cyanides, sulfides and sulfites should be stored separately away from acids in a cool, dry place.

e) Peroxides present a special storage hazard and should be monitored carefully. Diethylether, p-dioxane, tetrahydrofuran, and other commonly used peroxide-forming materials should be labeled with the date the container was first opened, and disposed of within six to twelve months of the opening date. If a manufacturers expiration date exists, the above does not apply.

f) All other compounds not covered in the above categories should be stored first by hazard class, then alphabetically in a clean, ventilated stockroom storage area.

g) Separate acids from bases. Store these chemicals near floor level.

h) Isolate perchloric acid from organic materials. Do not store perchloric acid on a wooden shelf.

i) Separate highly toxic chemicals and carcinogens from all other chemicals. This storage location should have a warning label and should be locked.

j) Separate acids from flammables.

k) Do not keep peroxide-forming chemicals longer than the expiration date.

l) Do not allow picric acid to dry out.

The following table provides examples of some incompatible chemicals:

Incompatible Chemicals Examples

Chemical	Incompatible With
Acetic acid	Chromic acid, nitric acid, hydroxyl compounds, ethylene glycol, perchloric acid, peroxides, permanganates
Acetylene	Chlorine, bromine, copper, fluorine, silver, mercury
Acetone	Concentrated nitric and sulfuric acid mixtures
Alkali metals	Water, carbon tetrachloride or other chlorinated hydrocarbons, carbon dioxide, halogens
Ammonia	Mercury, chlorine, calcium hypochlorite, iodine, bromine, hydrofluoric acid
Chlorates	Ammonium salts, acids, powdered metals, sulfur, finely divided organic or combustible materials
Chlorine	Ammonia, acetylene, butadiene, butane, methane, propane (or other petroleum gases), hydrogen, sodium carbide, benzene, finely divided metals, turpentine
Cyanide	Acids
Fluorine	Most other chemicals
Nitrates	Sulfuric acid
Oxygen	Oils, grease, hydrogen, flammable liquids, solids, or gases
Perchloric acid	Acetic anhydride, bismuth and its alloys, alcohol, paper, wood, grease, oils
Sodium	Carbon tetrachloride, carbon dioxide, water
Sulfides	Acids

1.2.7. Waste Disposal (General Requirements)

The objective of the waste disposal program is to ensure that minimal harm to people, to other organisms, and to the environment will result from the disposal of waste laboratory chemicals. The hazards associated with such waste are present for the individual handling the material, for other occupants of the building who may be downstream from the disposal and for the environment as a whole. For these reasons the disposal of laboratory chemicals to the drain is forbidden without proper chemical evaluation, treatment

and/or dilution. The following general guidelines provide additional information about waste handling in the instructional laboratories and in other environments where waste products are handled.

a) Every reasonable attempt will be made to recycle and/or reuse chemicals in an environmentally acceptable manner as the preferred method of disposal. This will be accomplished where appropriate, only by the laboratory technicians, or course instructor.

b) Unlabeled containers of chemicals and solutions shall undergo prompt disposal.

c) Chemical wastes shall be collected and stored according to an approved waste disposal program.

d) Wastes shall be removed from laboratories to a central waste storage area daily and from the central waste storage area within 90 days.

e) Disposal of any chemicals down the drain is prohibited for students, and shall only be performed by laboratory technicians or other trained personnel and shall be in accordance with regulations established by the city and county agencies responsible for regulating discharges into the sewer system.

f) Chemicals shall not be disposed of with mixed refuse for landfill burial.

g) Laboratory hoods shall not be used as a means of disposal for volatile chemicals.

1.2.8. Control of Incompatible Waste Streams from Instructional Laboratories

While most of the instructional laboratories should be able to implement the procedures in this document without modification, specific written modifications suitable to each lab's operations should be established where these procedures as written, are not practicable. In every case, handling of all used laboratory chemicals should be based upon written procedure and the procedure should allow for the segregation of those chemicals by compatibility, type and/or hazard. Wastes should be removed from the laboratories to a central waste storage area daily and from the central waste storage area at regular intervals to long term storage (not to exceed 90 days). Each faculty member is responsible for the proper handling of the wastes generated in their respective labs.

Two approved systems are currently in place in these instructional laboratories that meet the requirement and intent of the federal, state and local regulations for proper segregation and disposal. Student-Determined and Pre-Determined waste determinations are described in Appendix F. The approved systems are examples only and other methods that provide the same measure of protection may be utilized.

1.2.9. Container Labeling

Specific labeling requirements for the 2 currently approved methods of laboratory waste determination are described in Appendix F. The following basic labeling practices will be enforced in the instructional labs regardless of the method used:

a) All containers in the laboratory shall be labeled. This includes chemical containers and waste containers. The label shall be informative and durable, and at a minimum will identify contents, source, and date of acquisition, storage location, and indication of hazard.

b) Exemptions for labeling requirements shall be made for chemical transfers from a labeled container into a container which is intended only for immediate use.

c) The labeling program shall be inspected periodically by the Chemical Hygiene Officer, or campus designee to ensure that labels have not been defaced or removed.

d) Prominent signs and labels shall be posted giving emergency telephone numbers.

e) Location signs shall be posted for safety showers, eyewash station, and other safety and first aid equipment, exits, and areas where food and beverage consumption and storage are permitted.

f) Signs shall be posted warning of areas or equipment where special or unusual hazards exist.

1.2.10. Chemical Waste Generators other than Instructional Laboratories

Most biology labs, photography labs, dental classes, automotive repair facilities and other generators of hazardous waste will use the standard label, associated with the pre-determined method described in Appendix F. Where the waste products are not produced as part of an experiment and are not combinations of mixed waste, the table described in the "Predetermined Method" section and provided in Appendix F is not required.

1.2.11. Potentially Infectious Waste Disposal

The term "Potentially Infectious Waste" (PIW) refers to any materials that have come in contact with or been contaminated by cultures of living organisms, except those things that are considered "Medical Waste" (MW). Most PIW is generated on the PCC campus through experiments with bacteria, yeasts, molds, and fungi and encompasses any materials that have come into contact with cultures of these organisms. The protocol for PIW on the PCC campus differs greatly from that of MW as it involves onsite treatment before disposal.

a) There are two main categories of PIW: solid and liquid. Although not entirely dissimilar, there are specific protocols for the disposal of each of these two types of waste.

b) Solid wastes include not only the actual cultures themselves (petri dishes and agar slants) but also the disposable lab-ware used in the study of these cultures (slides, cover slips, pipettes, pipette tips, toothpicks, inoculating loops and needles, gloves, paper towels, etc.).

c) Liquid waste is mainly broth cultures of organisms but also includes any liquids used in experiments that have been contaminated with these organisms (serial dilutions, water samples, etc.).

d) As color is an important factor in the sorting of hazardous waste, no red containers should be used for PIW disposal. Instead, yellow sharps containers and clear biohazard bags must be used.

e) Liquid waste may either be autoclaved as with solid waste or it may be soaked in an excess amount of a 10% bleach solution for 30 min. prior to disposal. (Note: The container holding the culture must be disinfected as well. If liquid waste is poured into a larger receptacle for bleach treatment, the original container still needs to be treated as well, usually through autoclaving.)

f) As MW is not being autoclaved onsite, the PCC campus is not required to perform monthly or annual calibration testing on autoclaves. However, periodic spore testing should be performed at a frequency to be determined by each department, to ensure that autoclaves are serving their purpose.

g) To ensure proper steam circulation, an autoclave should never be overloaded. Do not stack items and be sure that there is ample room in between large bags.

h) Use extreme caution when opening an autoclave and removing the waste once a cycle is complete. Crack the door to allow the steam to slowly vent. Realize that whatever was autoclaved will be extremely hot.

1.2.12. Protocol for Potentially Infectious Waste Disposal

a) Be sure proper receptacles are placed out in the classroom, usually in an area designated for waste disposal.

b) For solids: Use yellow sharps containers and clear biohazard bags.

c) For liquids: Use test tube racks.

d) Ensure that faculty members, laboratory instructors and laboratory technicians are informed of proper procedures with the collection of the waste. Ask them to be sure to go over the key points with the students.

e) Periodically check to be sure that all items are properly contained and that the receptacles are not full. Try to keep the area neat and organized as that will help to maintain safety and avoid accidents.

f) When any receptacle is full, remove it from the collection area and replace it with a new one. (Sharps containers should have a fill line to indicate when they are full and biohazard bags should never be allowed to get more than ¾ full.) Treat and dispose of accumulated waste as quickly as possible. Do not allow full waste receptacles to sit overnight.

g) Be sure that each receptacle is properly sealed and tagged before autoclaving.

h) Sharps containers: Should be sealed across the lid with a piece of tape and autoclaved. If the container is reusable, contents can be transferred to a separate box for disposal after autoclaving and the container returned for further use.

i) Biohazard bags: Loosely seal the bag shut with a rubber band, leaving a small opening. Use a piece of autoclave tape to indicate treatment.

j) Test tube racks: Use a small piece of tape on each rack to indicate treatment. Racks should not be stacked on one another as this can block the flow of steam in the autoclave.

k) Place receptacle into a secondary container (wide yet shallow enough to allow steam circulation) and load into autoclave. Again, be sure not to overload the autoclave, as this will diminish its effectiveness.

l) Autoclave for 45 min. at 121°C.

m) Once the cycle is complete and the autoclave has fully exhausted, slowly open the door to allow the steam to escape in a controlled fashion.

n) When all the steam has left the chamber, carefully remove the contents. Check the autoclave tape for color change, indicating proper treatment.

o) Solid waste receptacles can be placed into a regular trash container. Liquid waste can be poured down the drain with plenty of running water.

p) Any reusable lab ware (glass petri dishes, test tubes, beakers, etc.) is safe for washing and future use.

1.2.13. Medical Waste Disposal

MW is defined as "any solid waste that is generated in the diagnosis, treatment, or immunization of human beings or animals in research, or in the production or testing of biologicals" (Medical Waste tracking act of 1998). During the course of a semester's lab work, a small amount of waste, mostly from biology labs or any waste from labs involving students' blood (i.e. blood typing, glucose testing, etc) would fall under this definition.

MW is generally not treated onsite on the PCC campus and is instead properly sealed and transported to the Student Health Center (or appropriate handler) at each campus, where it is added to their **MW** and removed from the site by a disposal service. Should the college decide that **MW** will be treated on site, these duties will be performed in accordance with local and federal regulations including California Health and Safety Code section 117600 through 118360 provided in Appendix G. Some general guidance follows:

a) All MW must be collected in red, properly labeled containers. Whether it be a sharps container or a biohazard bag, the container must be red and labeled with the full name, address, and contact information of the generating party. The name and address should be in addition to the standard label (from the manufacturer) on the container indicating that the contents are hazardous, medical wastes.

b) "Sharps" (any instrument likely to pierce or puncture a biohazard bag) must be placed in a sharps container. These include lancets, slides, toothpicks, needles, syringes, etc. All other waste (cotton swabs, paper towels, gloves, paper, etc.) should go into a biohazard bag.

c) Red containers should NEVER go near an autoclave on campus. All red containers should be properly transported to the campus Student Health Center and added to their MW for disposal.

1.2.14. Protocol for Medical Waste Disposal

a) Place a properly labeled red container out for collection of MW items. Be sure that the lid is properly secured on a sharps container and that a biohazard bag is properly mounted in its holder.

b) Ensure that faculty members, laboratory instructors and laboratory technicians are informed of proper procedures for the collection of the waste. Ask them to be sure to go over the key points with the students.

c) Periodically check to be sure that all items are properly contained and that the container is not full.

d) When container is full, remove it from the lab and properly seal it for disposal. For a sharps container, close the lid and seal with a piece of tape once around the entire container. For a biohazard bag, roll the top of the bag down until it reaches the contents and again seal with a few pieces of tape around the entire bag.

e) Be sure to label the container with the appropriate date, as regulations state you have 30 days to dispose of any container once it is full.

f) Place full containers into a proper biohazard transport vessel (a 5-gallon bucket with “Biohazard” stickers on both the bucket and lid), seal the lid, and take the waste to the Student Health Center.

g) Drop the waste off at the Student Health Center and be sure to remind them to add our waste to their Medical Waste Management Plan.

1.2.15. Personal Protective Equipment

Some measure of protection is required for all persons present during the laboratory use of hazardous chemicals. The exact nature and extent of the protection is dependant on what is being used and under what circumstances. Protective equipment includes, but is not limited to, safety glasses, splash goggles, face shields, gloves, aprons, lab coats, and respirators. Refer to Personal Protective Equipment requirements found in Section 2, Control Measures.

1.2.16. Location and Equipment to be used for Specific Procedures

Because of the specific hazards associated with some laboratory chemicals and processes, some specific operations should be confined to limited areas in the lab to minimize exposure. Each supervisor or supervising faculty member should identify those processes in their labs requiring special handling and assign those chemicals or processes to the available fume hoods. The following guidelines should also be observed:

a) Fume hoods should be used for all procedures involving concentrated acids, alkalis and toxic chemicals with PELs or TLVs less than 50 ppm.

b) When using the fume hood, keep chemicals away from the face.

c) Monitor the operation of the hood and report any problems immediately.

d) Never use a closed system for carrying out chemical reactions that involve heating or evolution of a gas. Always vent experiments to either a fume hood or to the laboratory (where appropriate).

e) Use scrubbers to remove toxic chemicals from gaseous waste streams (e.g., a chilled, stirred 5% sodium hydroxide scrubber for an acidic waste stream).

f) Check gloves, glove boxes, or glove bags for leaks and test for adequate airflow before use.

1.2.17. Laboratory Equipment and Glassware

a) All laboratory equipment shall be used only for its intended purpose.

b) All glassware shall be handled and stored with care to minimize breakage; all broken glassware will be disposed of immediately in the broken glass container.

c) All evacuated glass apparatus shall be shielded to contain chemicals and glass fragments should implosion occur.

d) All laboratory equipment shall be inspected on a periodic basis and replaced or repaired as necessary.

1.2.18. Accident, Spill and Leak Procedures

a) For small to moderately-sized chemical spills of minimal risk in the lab, wear gloves, safety glasses or goggles, proper shoes, and a lab coat or lab apron, and clean up the spill using the clean-up kits provided in the lab. Contain the spilled material for subsequent treatment or disposal. Discard any broken glass into the special lab receptacles provided. Assure the proper disposal of the absorbent used in the clean-up process.

b) All laboratory personnel shall be trained in the proper use of fire extinguishers when hired and annually thereafter.

c) All employees who might be exposed to chemical splashes shall be instructed in the location and proper usage of emergency showers and eyewashes.

d) Metallic mercury and its compounds are subtle poisons which can be easily absorbed into the body by inhalation, ingestion, or skin contact. The chronic effects of mercury inhalation due to metallic mercury lost in the lab are cumulative and not readily reversible. Pools or droplets of metallic mercury should be collected by suction or cleaned up using a designated "mercury-spill cleanup kit." Mercury collected for reclamation should be stored in a high-density polyethylene bottle, and rags, sponges, or other such materials used in cleanup should be placed in a sealed plastic bag, labeled, and disposed of properly.

e) In the case of accident requiring medical attention or assistance, contact Campus Security immediately to arrange for an escort and any necessary transportation. All accidents must also be reported through the departmental office using the appropriate forms. Copies of the accident and incident forms are to be present in each laboratory and are available in the departmental office. The following guidelines regarding accidents in the laboratory do not replace the need for proper medical consultation and treatment. These guides are general recommendations only.

    - In the case of eye contact: promptly flush eyes with water for a prolonged period (15 minutes) and seek medical attention.
    - In the case of ingestion: encourage the victim to drink large amounts of water, contact the poison control center if necessary and seek medical attention.
    - In the case of skin contact: promptly flush the affected area with water and remove any contaminated clothing. If symptoms persist after washing, seek medical attention.
    - Personnel trained in first aid should be available during working hours and an emergency room with medical personnel should be readily available (within 15 minutes of campus).

f) The most common injuries in the lab involve broken glass and heat burns. Treat minor burns as needed with antiseptic/antibacterial creams. For small cuts, the affected area should be washed with cold water and a band-aid should be applied. For larger cuts which may require stitches, severe burns, or for instances where chemicals may have been absorbed into the cut, medical attention should be sought. Have someone call campus police before the injured person leaves the building, and make sure that the person is accompanied by a friend. All injuries shall be reported.

g) Chemical burns may result when corrosive materials like strong acids, bases, oxidizers, and reducing agents are handled improperly. For chemical splashes, wash the affected area with water for 15 minutes and remove all contaminated clothing. Use the lab shower for spills over large areas of the body. After rinsing thoroughly, seek medical attention.

1.2.19. Air Sampling for Purposes of Determining Employee Exposure

a) Air sampling for evaluating employee exposure to chemical substances shall be conducted as specified by specific codes or regulations.

b) Air sampling shall be conducted if there is reason to believe that exposure levels for regulated substances exceed the action level, or in the absence of an action level, the PEL, or TLV. Air sampling shall also be implemented when usage of highly toxic substances exceeds three times per week or when testing or redesigning hoods or other ventilation devices.

c) The results of air sampling studies performed in the laboratory shall be recorded and maintained for 30 years past employment of the employee sampled.

2. CONTROL MEASURES

CCR Title 8, Section 5191(e)(3)(B) Control Measures
(3) The Chemical Hygiene Plan shall include each of the following elements and shall indicate specific measures that the employer will take to ensure laboratory employee protection:
(B) Criteria that the employer will use to determine and implement control measures to reduce employee exposure to hazardous chemicals, including engineering controls, the use of personal protective equipment, and hygiene practices. Particular attention shall be given to the selection of control measures for chemicals that are known to be extremely hazardous

2.1. Overview

Control measures must be used when personal safety issues or health hazards are present.

This chapter examines when and what types of protective control measures should be used.

Protective apparel must be compatible with the required degree of protection for the sub

stances being handled. There must be easily accessible drench-type safety showers, eyewash fountains, and fire extinguishers for each lab. Available in or near each lab should be fire alarms and telephones for emergency use, and any other items designated by the laboratory supervisor or supervising faculty. Harmful chemicals can inadvertently be introduced into the body by four general routes of exposure: inhalation, ingestion, skin contact, and injection (i.e. chemicals entering the body though cuts or skin punctures). There are three strategies to prevent exposure or to reduce harm in the event of exposure. Each of these strategies is introduced and discussed in the three subsequent sections of this chapter.

Engineering Controls include approaches to reduce contact to hazardous materials through physical barriers, ventilation and equipment. Adequate ventilation is extremely important in experiments or processes involving hazardous compounds, corrosive, flammable, or potentially explosive compounds. Such experiments or processes should always be done inside a fume hood. Potentially explosive reactions should be done behind a lab shield. Compounds that are highly reactive toward air and water should be handled using proper syringe technique, in a dry box, or in a glove bag contained inside a fume hood.

Personal protective equipment, properly used, can prevent significant exposure to chemicals. Safety glasses and proper footwear may be required in any PCC laboratory based on the procedures in use. Gloves are mandatory protection from compounds that are infectious, toxic or corrosive. In addition, a lab apron or lab coat should be worn when working with relatively large amounts of these materials. If a pressure buildup or implosion is possible due to a chemical reaction or other laboratory operation such as vacuum distillations, a face shield should be worn as well.

Hygiene practices are the third strategy to reduce chemical exposure in the laboratory. Unnecessary contact with chemicals should be avoided. Washing the hands or exposed skin frequently is a good practice, and bathing after significant exposure or at the end of a workday is recommended. In the event of an accident, contaminated clothing should be removed immediately and fresh clothing should be worn.

2.2. Engineering Controls

Engineering controls include those physical accommodations within the laboratory facility designed to ensure and protect the health and safety of employees. These include the ventilation system, and the laboratory safety equipment. Routine laboratory safety equipment, such as fire extinguishers, fire blankets, eyewash stations, safety showers, and spill control kits are all important control devices to minimize personal harm and to prevent an accident from getting out of control. No modification of engineering controls will occur unless testing indicates that worker protection will continue to be adequate. Improper functioning of engineering controls must be reported to the department immediately. A malfunctioning system shall be taken out of service until proper repairs have been executed.

2.2.1. Ventilation

Proper ventilation is essential to the safe operation of laboratories. Each laboratory must have an appropriate general ventilation system with air intakes and exhausts located so as to avoid intake of contaminated air. There must be adequate, well ventilated stockrooms and storerooms. Laboratories should be at negative pressure relative to the halls and surrounding classrooms so that contaminated air is not drawn out of the laboratory. All chemical hygiene related equipment and systems should undergo continuing appraisal and modifications when necessary. Furthermore the work conducted and its scale must be appropriate to the physical facilities available, and especially to the quality of the ventilation.

The laboratory hoods shall be utilized for all chemical procedures which might result in release of hazardous chemical vapors or dust. As a general rule, the hood shall be used for all chemical procedures involving substances which are appreciably volatile and have a PEL or TLV less than 50 ppm. Chapter 3 of this Chemical Hygiene Plan is devoted to the proper functioning and operational performance of laboratory hoods and other protective equipment.

2.2.2. Laboratory Safety Equipment

Fume Hoods Laboratory type fume hoods are extremely important in providing adequate ventilation when working with hazardous compounds in the laboratory. They are to be present in all laboratories on Campus where hazardous chemicals are handled. The fume hoods are to be inspected periodically to insure adequate face velocities, and any necessary maintenance should be requested promptly. Chapter 3 describes the plan to ensure proper and adequate operation of fume hoods and other protective equipment.

Portable Chemical Shields A Portable chemical shield should be available and used whenever there is the potential for a chemical explosion or glass breakage due to high pressure or vacuum inside a vessel. The experimental apparatus and entire chemical shield should be used inside a laboratory hood if possible.

Fire extinguishers Fire extinguishers are to be available in or near each laboratory. Four general fire classes exist with a different type of fire extinguisher appropriate for use on each class. Table 1 shows the four general classes of fire, the types of fuel present in each class, and the types of fire extinguishers that can be safely used to put the corresponding fire out. In most cases, a general Class ABC rated extinguisher will be provided and used.

With regard to the information in Table 1, there are a few cautionary notes. Water-based extinguishers are useful only for Class A fires and should not be used for extinguishing fires of any other type. Aqueous film-forming foam extinguishers (AFFF) conduct electricity and should not be used on Class C fires. Using multipurpose dry chemical extinguishers in a confined area may produce a cloud that reduces visibility. Also, halon 1211 may be toxic if inhaled (at >4 % halon/unit air volume) and can decompose to give dangerous by-products at 900°F (480°C). It is also important to note that carbon dioxide fire extinguishers may cause frostbite, and suffocation is possible if they are used in a confined area. Carbon dioxide extinguishers with a metal discharge horn will also conduct electricity and should never be used on a Class C fire. Finally, a Class ABC rated fire ex

tinguisher should NEVER be used on a Class D fire since it may make the fire worse. Class D fires should be smothered with sand or a Class D fire extinguisher.

Fire Blankets Fire blankets should be provided in all Campus laboratories where flammable compounds may be used for instructional and/or research purposes.

Emergency Eyewash Stations Eyewash stations should be checked monthly to make sure that they are working properly; any required maintenance is to be performed promptly. Eyewash stations should be present or immediately available in all Campus laboratories, storerooms, or stockrooms where hazardous chemicals are handled or stored. Prominent signs should identify the presence and location of this and other safety and first aid equipment in the lab.

Table 1 – General Classes of Fires and Fire Extinguishers

Class	Fuel Source *(examples)*	Appropriate Fire Extinguisher Type
A	Ordinary Combustibles: *(wood, paper, rubber, natural fibers, some plastics)*	Water based; Aqueous film-forming foam (AFFF); Multipurpose dry chemical; Halon 1211
B	Flammable Liquids: *(Flammable liquids and gases, greases, tars, oil-base paints, and other volatile liquids)*	Carbon dioxide; Dry chemical; Halon 1211; Multipurpose dry chemical; Film-forming foam (AFFF)
C	Electrical: *(energized electrical wiring or electrical equipment)*	Dry chemical; Halon; Multipurpose dry chemical; Carbon dioxide without a metal discharge horn
D	Combustible Metals: *(solid sodium metal or lithium metal)*	Specialized class D; Do NOT use an ABC type fire extinguisher
This information was obtained from Gold, David T., *Fire Brigade Training Manual,* National Fire Protection Association, Quincy, MA, 1982, pp. 58-71.		

Emergency Safety Showers An easily accessible drench-type safety shower or drench hose should be present wherever hazardous chemicals are stored or used. Prominent location signs should identify the presence and location of this and other safety and first aid equipment in the lab. The proper operation of safety showers should be checked every 3 to 6 months, and prompt maintenance provided if necessary.

Spill Control Supplies Spill control equipment should be present in each laboratory, stockroom, and storeroom where significant quantities of hazardous chemicals are stored or used. A basic spill kit should include spill control pillows or sausages, acid neutralizing powder, caustic (base) neutralizing powder, a solvent adsorbent, a brush, and a dustpan. Additional or specialized spill materials may be required for the specific processes or needs of individual laboratories, as determined by the department head or supervising faculty. A mercury spill cleanup kit is available in the chemistry stockroom and special attention must be given to the complete and proper cleanup of mercury spills.

Signs and Labels Prominent signs and labels of the following types should be posted: emergency telephone numbers; identity labels showing the contents of containers not in immediate use by a worker, and the associated hazards; location signs for safety showers, eyewash stations, other safety and first aid equipment, exits, and areas where food and beverage consumption and storage is permitted/prohibited; warnings at areas or equipment where special or unusual hazards exist. Specific examples of signs and labels concerning chemically-related safety, health, and environmental issues are given below.

1. Location signs for safety equipment and/or spill cleanup equipment must be present.
2. Hazard warning signs must be posted in appropriate areas where flammable materials, biological hazards, or other potentially hazardous materials may be present.
3. All laboratory chemical containers should have appropriate labels.
4. The date that all peroxidizable compounds like ethyl ether, p-dioxane, and tetrahydrofuran are opened, and their expiration date, should be written on the respective labels.
5. All used chemical containers and unrecoverable waste containers must be labeled with a complete list of contents, and the accumulation period.
6. PCC chemical waste containers should have *no labels* other than the approved labels listed in this document.

2.3. Personal Protective Equipment

Personal protective equipment (PPE) is a term used to describe a variety of products worn by laboratory workers designed to protect those workers from safety and health hazards. Protective equipment is required anytime there is a possibility that the worker may be exposed to a hazardous chemical. The level of protection required depends on the specific hazards involved and the quantities of materials handled. There are clear limitations to all types of PPE. Such limitations must be considered when selecting equipment for any given task. Limiting factors for PPE protection include: proper fit and selection; comfort vs. protection; restrictions to sight, hearing, touch, and movement; proper maintenance; equipment lifetimes. All personal protective equipment should be examined before use to ensure the equipment will be able to provide the needed level of safety. The following sections discuss some types of PPE. Each supervisor or supervising faculty must assess the operations within their own labs and determine the types and levels of protection required for the assigned tasks.

2.3.1. Eye Protection

Proper eye protection should be worn at all times in laboratories where people may come in contact with hazardous chemicals. Safety glasses or goggles meeting the ANSI Z87.1 standard are required for employees and visitors and shall be worn when in areas where the potential for exposure to chemicals is present. Contact lenses are NOT appropriate in cases where hazardous chemicals may contact the eye, indeed contacts may actually *increase* the chance of injury if a chemical splash into the eye takes place. Prescription eyeware offers little to no protection against chemical splash or impact resistance to flying particles unless they are ANSI Z87.1 rated. Chemical goggles and a full-face shield shall be worn during chemical transfer and handling operations as procedures dictate. Full face shields and safety glasses should also be used when working with systems under pressure. In all cases select a level of eye protection which ensures adequate protection for the tasks assigned.

2.3.2. Hand Protection

Appropriate chemical-resistant gloves shall be used whenever the potential for contact with toxic materials exists. Gloves shall be chosen for specific tasks based on their resistance characteristics for the particular chemicals to be handled. Used gloves shall be inspected and washed prior to reuse. Damaged or deteriorated gloves will be replaced immediately. Gloves shall be washed prior to removal from the hands.

Thermal-resistant gloves shall be worn for operations involving the handling of heated materials and exothermic reaction vessels. Thermal-resistant gloves shall be non-asbestos and shall be replaced when damaged or deteriorated.

Latex gloves can be used safely for handling many solids and for handling dilute aqueous solutions of many inorganic materials. Latex gloves are quite popular due to their flexibility, it is easier to manipulate lab equipment while wearing them, and they may seem more comfortable. Latex gloves however, provide poor protection from acids, bases, and organic solvents. This is well known from "breakthrough studies" where the average time of chemical breakthrough for glove materials is determined with respect to a given compound.

While it is mandatory that all students and employees have proper hand protection when working with potentially hazardous materials, it is also recognized that certain common laboratory operations can be performed safely without gloves. Should contamination occur, the hands can be washed in the sink with soap and water.

Supervising faculty should determine the type of gloves and level of protection required for the assigned laboratory tasks. Adequate glove protection should be made available as necessary. Before each use, inspect gloves *carefully* for discoloration, punctures, and tears. Discard them when they become contaminated or damaged.

2.3.3. Body and Foot Protection

A lab coat or lab apron should be used when working with potentially toxic, corrosive, or flammable compounds that may inadvertently be splashed onto clothing. It is much less expensive to buy a lab apron than it is to replace expensive jeans, shirts, blouses, or other street clothing. Lab coats should be removed upon discovery of significant contamination. Chemical suits are routinely worn in industry and in environmental cleanup situations where a large amount of uncontained hazardous material may be present. Closed toed shoes are required when working in labs or whenever the potential for spills may occur.

2.4. Hygiene Practices

Hygiene practices and general common-sense safety practices are direct and easily implemented methods to reduce exposure to hazardous materials. In addition to those practices discussed in other sections of the CHP, these practices include the following:

a) Each employee is responsible for knowing and following the rules and procedures established in this plan.

b) All employees shall remain vigilant to unsafe practices and conditions in the laboratory and shall report such practices and/or conditions to the Chemical Hygiene Officer, or campus designee immediately. The Chemical Hygiene Officer, or campus designee must correct such unsafe practices and/or conditions promptly, or report them to administration for correction.

c) Know the location of all exits, emergency safety equipment and emergency procedures.

d) Employees shall avoid unnecessary exposure to chemicals by any route. Minimize exposures via the eyes, skin, nose, and mouth by using appropriate personal protective equipment and ventilation controls, including a laboratory fume hood.

e) Use a properly operating fume hood to vent gases or to work with potentially hazardous or noxious materials.

f) Do not use your sense of smell to identify chemicals/hazards and never taste a laboratory chemical.

g) Do not use mouth suction to pipette chemicals or to start a siphon; use a pipetting device or aspirator to create a vacuum.

h) Skin contact with all chemicals shall be avoided. Wash the hands and arms thoroughly before leaving the laboratory, even if gloves have been worn.

i) Take a bath after work or after lab if clothes have been inadvertently contaminated. Note: In the event of an accident, contaminated clothing should be removed *immediately* and fresh clothing should be worn.

j) Wash contaminated clothing separately from other clothing items.

k) Never eat, drink, smoke, or chew tobacco or gum inside a laboratory, and do not store food or beverages meant for consumption in lab refrigerators.

l) Avoid working alone in the laboratory if you are working with hazardous materials or doing potentially hazardous work.

m) Keep lab spaces, including fume hoods, clean and uncluttered to prevent accidental spills and glass breakage.

n) All laboratory personnel shall encourage safe work practices in coworkers by setting the proper example. Avoid practical jokes or other behavior which might confuse, startle, or distract another worker.

o) Follow proper handling procedures for biological specimens and infectious wastes.

p) Never force glass tubing into rubber stoppers and dispose of broken glass only in approved containers, not the regular trash.

q) Use safety devices and PPE for handling hot items.

r) Label all containers of chemicals including waste containers.

s) Turn off all hot plates, gas valves and other potentially hazardous devices when leaving the laboratory.

t) Work surfaces in chemical and biological instructional laboratories are to be decontaminated and cleaned daily and after spills.

u) Confine long hair and loose clothing to avoid contact with flames and/or being caught in operating equipment.

v) Always wear eye protection when in the lab and additional PPE as required when handling or exposed to chemicals.

w) Always be alert to unsafe conditions or actions and correct them immediately. Remember that *someone else's* accident can be as dangerous to you as any *YOU* might have.

2.4.1. Safety Planning for New Experiments

The approach used for safety planning of new experiments in academic laboratories should be the same as that used by safety planners in industry. When designing a new experiment, search for potential hazards in each of three major areas--the physical properties of the chemicals, the experimental procedure, and the manipulation of the equipment. Also consider what may happen if equipment breaks down, the electricity is shut off, the water is shut off, a fire occurs, or you are burned by a corrosive chemical. Evaluate the probability of a potential hazard happening and the severity of its consequences. Then attempt to reduce the risks by one or both of the following approaches: by reducing the probability that a given hazard might happen or by reducing the severity of the consequences if it really does happen.

2.4.2. Housekeeping

Lab instructional and research areas, storage rooms, and preparation rooms should be kept clean and free from obstructions. There should not be any chemicals or any glassware cluttering the benches nor should carts and chairs block the aisles. Likewise, the fume hoods should have neither chemicals nor glassware cluttering them, and the hoods should be used only in accordance with the designated purposes. Once chemicals and equipment are no longer in use, they should be returned to their proper storage area. Equipment should be cleaned before being returned to the stockroom. In addition, the following specific requirements will be enforced:

a) Each employee is directly responsible for the cleanliness of his or her workspace and jointly responsible for common areas of the laboratory.

b) All spills on lab benches or floors shall be cleaned immediately and properly disposed of.

c) The lab benches shall be kept clear of equipment and chemicals except those necessary for the work currently being performed.

d) The work area shall be cleaned at the end of each operation and each shift. Instructors shall be responsible to see that the laboratory is cleaned at the end of each class period.

e) All apparatus shall be cleaned thoroughly and returned to storage upon completion of usage.

f) Aisles and hallways shall remain unobstructed.

g) Access to exits, utility controls and electrical disconnects, and emergency equipment including fire extinguishers, eyewashes, and showers shall remain unobstructed.

h) All labels shall face front

i) Chemical containers shall be clean, properly labeled, and returned to storage upon completion of usage.

j) All chemical wastes shall be disposed of in accordance with the waste disposal plan. Contents of unlabelled or improperly labeled containers should be disposed of promptly. Stairways and hallways should never be used to store chemicals and equipment even for short periods of time, and instructional laboratories should not be used for extended storage of equipment that no longer works.

2.4.3. Maintenance

a) Safety and emergency equipment shall be properly maintained. Fire extinguishers shall be visually inspected monthly and recharged annually.

b) Improper functioning and /or damage to plumbing, electrical, and gas utilities shall be reported immediately to operations. Repairs shall be made promptly upon report of problems.

3. LABORATORY HOODS AND PROTECTIVE EQUIPMENT

CCR Title 8, Section 5191(e)(3)(C) Fume Hoods and Protective Equipment
(3) The Chemical Hygiene Plan shall include each of the following elements and shall indicate specific measures that the employer will take to ensure laboratory employee protection:
(C) A requirement that fume hoods comply with 5154.1, that all protective equipment shall function properly and that specific measures shall be taken to ensure proper and adequate performance of such equipment.

3.1. Overview

The fume hood is probably the single most important piece of equipment used to control employee exposure to hazardous chemicals in a laboratory. Fume hoods occupy a central position within the plan to control employee exposures. Laboratory fume hoods require regular monitoring, inspections, and maintenance to ensure proper and adequate performance. The level of performance for any given hood is dependant on the type of operations performed within the hood. In general however the minimum face velocity of hoods should be monitored and work within the hood kept a safe distance behind the face. Other equipment, such as glove boxes, isolation/incubation rooms, and freezers must also be included in a program of regular inspection and maintenance.

3.2. General Ventilation

A system of general ventilation must be provided for the instructional laboratories. This system should provide a source of air for breathing and for input to local ventilation devices. This system should not be relied on for protection against toxic substances released into the laboratory. The system should ensure that laboratory air is continually replaced, preventing increase of air concentrations of toxic substances during the working day. This system should direct the air flow into the laboratory from non-laboratory areas and out to the exterior of the building. Exhaust outlets for vented air should be located at a site remote from any fresh air intake for the building. Such a system will leave the laboratories at a relative negative pressure when compared to the hallways and/or surrounding areas. Ventilated storage cabinets, canopy hoods, etc. should be provided as needed, each with a separate exhaust duct. Modifications to the ventilation system should be made only if thorough testing indicates worker protection from airborne toxic substances will continue to be adequate.

The performance of the general ventilation system should maintain 4-12 room air changes per hour, if local exhaust systems such as hoods are used as the primary method of control. If this is the case the hoods must be left in operation whenever the lab is in use. The air flow should not be turbulent and should be relatively uniform throughout the laboratory. Air flow into and within the hood should not be excessively turbulent, and hood face velocities

should be adequate (60-125 linear feet per minute). The quality and quantity of the ventilation should be regularly monitored and evaluated (at least every semester), and reevaluated whenever a change in the local ventilation devices is made.

3.3. Fume Hood Performance

The specific ventilation capacity of each laboratory type fume hood is dependent on the operations carried out in the hood and the hazards associated with the substances handled. In general, a laboratory hood with 2.5 linear feet of hood space per person should be provided for every two workers if they spend most of their time working with chemicals, and each hood must have a continuous monitoring device to allow convenient confirmation of adequate hood performance before use. If there are not enough of the proper types of hoods in the lab for the operations assigned, or the performance of the hoods and/or ventilation system are not adequate for those operations, then those operations must be restricted or additional hood capacity acquired.

Regular inspection and monitoring of laboratory fume hoods is essential to ensure their proper and adequate performance. Appendix C contains the Cal/OSHA standard 8 CCR 5154.1, Ventilation Requirements for Laboratory-Type Hood Operations. Contained within Appendix D is the hood inspection checklist. Key areas to document during regular inspections include: the method of measurement; whether the hood meets the minimum standards for performance; hood condition and location; frequency and type of use; and the presence of other control measures (glove boxes, isolation rooms, etc.) The records and reports generated through the inspection program should be maintained by the Chemical Hygiene Officer. The following work practices shall apply to the use of hoods:

a) Hood fans shall operate when hoods are being used.

b) After use, hood fans shall be operated for an additional period of time sufficient to clear residual contaminants from the ductwork.

c) Adequate hood ventilation should be confirmed prior to opening chemical containers inside the hood. An inward flow of air can be confirmed by holding a piece of tissue paper at the face of the hood and observing the movement of the paper. The hood also must be equipped with a quantitative airflow monitor that continuously indicates whether air is flowing into the exhaust system during operation.

d) The hood should be left operating when it is not in active use if hazardous chemicals are contained inside the hood or if it is uncertain whether adequate general laboratory ventilation will be maintained when the hood is non-operational.

e) The ventilation system shall be inspected every semester. The minimum hood face velocity shall be maintained at 100 feet per minute (fpm) on average, with a minimum of 70 fpm at any measured point. Where the required velocity can only be obtained by partly closing the sash, the sash and/or jamb shall be marked to show the maximum opening at which the hood face velocity will meet the requirements. A record of each inspection shall be maintained by the laboratory technician.

f) When a hood is in use to contain airborne hazardous substances and no employee is in the immediate area of the hood opening, the ventilation rate may be reduced to 60 fpm if the reduction in face velocity is controlled by an automatic system which does not require manual intervention and the system increases the airflow as required above, when the hood is accessed. This exception may only be used when the hood has been tested by the Tracer Gas Test Procedure (ANSI/ASHRAE 110-1995, Method of Testing Performance of Laboratory Fume Hoods) described in Appendix C (Cal/OSHA standard 8 CCR 5154.1).

g) Prior to the introduction of new chemicals, the adequacy of the hood ventilation system shall be determined by the laboratory technician.

h) Storage cabinets for flammable and hazardous chemicals will be ventilated as needed.

4. EMPLOYEE AND STUDENT INFORMATION AND TRAINING

CCR Title 8, Section 5191(e)(3)(D) Employee Information and Training
(3) The Chemical Hygiene Plan shall include each of the following elements and shall indicate specific measures that the employer will take to ensure laboratory employee protection:
(D) Provisions for employee information and training as prescribed in subsection 5191(f).

4.1. Overview

A regular and ongoing employee and student information and training program is an essential component of the campus's efforts to ensure the health and safety of its employees and students using the labs. This chapter of the Chemical Hygiene Plan describes our program to provide this information and training, the content of that program, and employee records related to the program.

4.2. Employee and Student Information

All employees and students will be apprised of the hazards presented by the chemicals in use in the laboratory. Each employee shall receive this information at the time of initial assignment to the laboratory and prior to assignments involving new exposure situations. Students will receive a condensed training on the first day of class. This information shall include the location and proper use of available protective apparel and equipment, as well as what to do in case of an emergency. In order to ensure that this information is provided, the department chair and dean shall ensure that the appropriate training takes place.

The Laboratory Standard describes five mandatory topics of instruction within the category of employee information. The informational content required by the Standard is met at the PCC campus through a written hazard communication program and formal and informal training. The mandatory topics to be included in employee information include the following:

- The contents of California Code of Regulations, Title 8, Section 5191 "Occupational Exposure to Hazardous Chemicals in Laboratories", which shall be made available to employees. This regulation is provided as Attachment A.
- The location and availability of the Chemical Hygiene Plan (this document).
- The permissible exposure limits for Cal/OSHA-regulated substances or the recommended exposure limits for other hazardous chemicals if there are no applicable Cal/OSHA regulations.
- Signs and symptoms associated with exposure to hazardous chemicals that are used in the laboratory.

- The location and availability of known reference material on the hazards, safe handling, storage, and disposal of hazardous chemicals found in the laboratory, including safety data sheets (SDS) received from a chemical supplier.

4.3. Employee and Student Training

Each year a safety presentation will be provided by an assigned faculty member covering the informational topics above. In addition to the above, specific instruction will be given to address three key topics. The employee training program will include:

- Methods and observations that may be used to detect the presence or release of a hazardous chemical
- The physical and health hazards of chemicals in the work environment
- The measures employees can take to protect themselves and students from health hazards, including specific procedures that the PCC campus has implemented to protect employees and students from exposure to hazardous chemicals.

The training program must also train the employee in the applicable details of this written Chemical Hygiene Plan. An outline of the employee training program is provided in Appendix E, listing the key points which are covered in the training. Records of employee training, attendance logs, and other relevant notes are to be maintained on campus. Records of training shall be kept for 5 years.

A condensed form of the training required above may be provided to students. Additional and updated information shall be provided by the Chemical Hygiene Officer, Safety or campus designee through safety meetings and directed references.

Safety Data Sheets (SDSs) for hazardous chemicals that are present are kept in the Hazard Communication Binder and are available for inspection by any employee at any time.

Additional books and references on laboratory safety and chemical hygiene are available from the Chemical Hygiene Officer and are available for use upon request.

5. APPROVAL OF OPERATIONS

CCR Title 8, Section 5191(e)(3)(E) Approval of Operations
(3) The Chemical Hygiene Plan shall include each of the following elements and shall indicate specific measures that the employer will take to ensure laboratory employee protection:
(E) The circumstances under which a particular laboratory operation, procedure or activity shall require prior approval from the employer or the employer's designee before implementation

5.1. Overview

There may be a limited number of procedures in laboratories that are significantly more hazardous than all of the other activities of the lab. High hazard activities always should be performed by an individual well acquainted with all of the safety policies and a thorough understanding of the nature of the hazards.

5.2. Pre-Approval

There are three factors to consider in deciding whether or not to require pre-approval of an operation. These factors include the potential hazard of the operation, the dependability and level of safety awareness of the employee and/or students, and finally what preventative measures are possible and the extent to which a pre-approval policy will enhance their use.

Each supervisor and supervising faculty should consider the operations undertaken within their respective laboratory settings and assess whether a pre-approval policy may be needed. These individuals, as well as the Chemical Hygiene Officer, have the authority to require pre-approval for any specific operation considered especially hazardous. In assessing these operations, they will consider the worst-case scenario should the operation be performed in the most inappropriate manner possible. For example, what are the key elements in carrying out the procedure safely, and will pre-approval promote safe practices? Are the employees involved in the operation significantly less familiar with the hazards, their causes, or the logistical operation of the lab than the senior person who would give oversight and approval? Finally, how frequently is the operation performed and what is the availability of the supervisor to provide oversite.

In all cases, procedures requiring pre-approval should be considered "hazardous operations" and will be performed during times when at least two personnel are present in the laboratory.

6. MEDICAL CONSULTATION AND EXAMS

CCR Title 8, Section 5191(g)(1) An employer shall provide all employees who work with hazardous chemicals an opportunity to receive the following medical attention, including any follow-up examinations which the examining physician determines to be necessary: (a) When an employee develops signs or symptoms that are associated with hazardous chemicals . . . (b) If exposure monitoring reveals an exposure level above the action level . . . (c) When an event takes place in the work areas . . . that results in the likelihood of a hazardous exposure.

6.1. Overview

The Cal/OSHA Laboratory Standard requires that employers make available to employees the opportunity to receive medical evaluation in cases where there is some reason to believe that the employee has been affected by exposure to a hazardous chemical. The Standard, re-printed in Appendix A, describes the provisions for medical consultation and examination. A summary of the requirements of the Standard are included below. The complete text should be consulted for additional information. The PCC Human Resources office should be contacted directly by the employee to arrange for medical evaluation. Such evaluations are to be performed by or under the direct supervision of a licensed physician and shall be provided without cost to the employee, without loss of pay, and at a reasonable time and place.

An opportunity to receive medical attention, including any follow-up examination which the physician determines to be necessary, shall be provided to the employee under the following circumstances:

a) Whenever an employee develops signs or symptoms associated with a hazardous chemical to which the employee may have been exposed in the laboratory.

b) Whenever exposure monitoring reveals an exposure level above the action level (or in the absence of an action level, the exposure limit) for a Cal/OSHA regulated substance for which there are exposure monitoring and medical surveillance requirements.

c) Whenever an event takes place in the work area such as a spill, leak, explosion, or other occurrence resulting in the likelihood of a hazardous exposure to the employee.

The supervisor shall provide to the physician the following information:

a) The identity of the hazardous chemical(s) to which the employee may have been exposed.

b) A description of the conditions under which the exposure occurred.

c) A description of the signs and symptoms of exposure that the employee is experiencing.

After the medical examination, the college must obtain a written opinion from the examining physician which shall include the following:

a) Any recommendation for further medical follow-up.

b) The results of the medical examination and any associated tests, if requested by the employee.

c) Any medical condition which may be revealed in the course of the examination which may place the employee at increased risk as a result of exposure to a hazardous chemical found in the workplace.

d) A statement that the employee has been informed by the physician of the results of the consultation or medical examination and any medical condition that may require further examination or treatment.

Under special circumstances and at the discretion of the Chemical Hygiene Officer, any of the above requirements may be applied to students who have or may have been exposed to harmful levels of chemical agents.

7. CHEMICAL HYGIENE RESPONSIBILITIES

CCR Title 8, Section 5191(e)(3)(G) Designation of Responsible Personnel
The Chemical Hygiene Plan shall include each of the following elements and shall indicate specific measures that the employer will take to ensure laboratory employee protection:
(G) Designation of personnel responsible for implementation of the Chemical Hygiene Plan, including the assignment of a Chemical Hygiene Officer and, if appropriate, establishment of a Chemical Hygiene Committee

7.1. Overview

The college Superintendent/President has the ultimate responsibility for chemical hygiene throughout the laboratory and with the assistance of other program administrators, will provide continued support for chemical hygiene.

7.1.1. Personnel

Responsibility for chemical hygiene rests at all levels of the College, including those listed below:

College Superintendent/President, who has ultimate responsibility for chemical hygiene within the institution and must, with other administrators, provide continuing support for institutional chemical hygiene.

Dean of Biology, Chemistry, Earth Sciences, is responsible for chemical hygiene in each unit.

Chemical Hygiene Officer, whose appointment is essential and who must: (a) work with administrators and other employees to develop and implement appropriate chemical hygiene policies and practices; (b) monitor procurement, use and disposal of chemicals used in the lab; (c) see that appropriate audits are maintained including evaluating housekeeping practices and inspections of emergency equipment; (d) help supervisors and supervising faculty develop precautions and adequate facilities; (e) know the current legal requirements concerning regulated substances; (f) Review and make recommendations to improve the Chemical Hygiene Program on an annual basis; (g) Maintain compliance with safe practices in laboratory operation; (h) Ensure that coworkers know and follow the chemical hygiene rules; (i) Ensure that the proper level of personal protective equipment is provided, being used and is in working order; (j) Recommend and schedule periodic training and; (k) Monitor the waste disposal program and apprise assigned faculty members of status.

Laboratory Supervisors and Supervising Faculty (Department Chair/Instructional Support Supervisor), who have overall responsibility for chemical hygiene in the laboratory including responsibility to: (a) ensure that workers know and follow the chemical hygiene rules, that protective equipment is available and in working order, and that appropriate training has been provided; (b) provide regular, formal chemical hygiene and housekeeping inspections including routine inspections of emergency equipment; (c) know the current legal requirements concerning regulated substances; (d) determine the required levels of protective apparel and equipment; and (e) ensure that facilities and training for use of any material being ordered are adequate.

Laboratory Technician, who is responsible for: (a) planning and conducting each operation in accordance with the institutional chemical hygiene procedures; and (b) supervising the proper handling of chemical wastes from each instructional laboratory as indicated in the standard operating procedures provided.

7.1.1.1. Campus Safety Working Group

The Palomar Community College Safety Working Group consists of the Chemical Hygiene Officer and as many faculty and/or staff members as needed to represent each academic discipline involved in the laboratory use of hazardous chemicals. The safety working group is expected to carry out the following duties with regard to the Chemical Hygiene Plan:

- Assist the Chemical Hygiene Officer in periodic inspections for safety hazards and properly functioning safety equipment in campus laboratories.
- Schedule periodic laboratory safety seminars for all work-study students, faculty staff and interested students.
- Assist the Chemical Hygiene Officer in reevaluating, improving, and updating the Chemical Hygiene Plan.
- Assist faculty members in obtaining the proper protective equipment needed for instructional and/or research use.

- Develop and update the inventory used in the chemical tracking process.
- Maintain current records for safety inspections and for safety equipment (e.g. fume hood performance).

7.1.1.2. Laboratory Inspections

Comprehensive laboratory inspections will be performed on a yearly basis while less rigorous inspections will be performed quarterly. The Safety Working Group will participate in the comprehensive safety and housekeeping inspections, while the quarterly inspections will be performed by the Chemical Hygiene Officer. Formal records of the laboratory inspections will be kept on file by the Chemical Hygiene Officer. The PCC Laboratory Inspection form is included in Appendix D. Included in the regular inspections are the following items:

1) Check the fire extinguishers.
2) Record the fume hood ventilation flow in fpm.
3) Inspect safety equipment (e.g. safety shower, eyewash, spill control equipment).
4) Evaluate housekeeping practices.
5) Spot check for safe chemical handling.

7.1.1.3. Recordkeeping

1) Accident investigations will be conducted by the immediate supervisor with assistance from other personnel as deemed necessary.

2) Accident reports should be written and retained with the employee's file until separation at which time it will be filed an additional 10 years, per the current record keeping process. Copies of the report should be sent to the Environment Health and Safety Department and Risk Management.

3) Exposure records for hazardous chemicals and harmful physical agents and medical records of employees exposed to hazardous chemicals and harmful physical agents will be maintained for the duration of employment plus 30 years per 29 CFR 1910.20

4) Records of equipment inspections will be maintained for 5 years.

5) Records of employee training will be maintained for 5 years.

7.1.1.4. Annual Chemical Hygiene Plan Audit

The Chemical Hygiene Officer will cause an audit to be conducted on all aspects of the Chemical Hygiene Plan each year. Results will be provided to the Dean of Biology, Chemistry and Earth Sciences, the College President, and the Safety & Security Committee. Supervisors are responsible for taking corrective actions.

8. SPECIAL PRECAUTIONS

CCR Title 8, Section 5191(e)(3)(H) Provisions for additional employee protection for work with particularly hazardous substances. These include "select carcinogens," reproductive toxins and substances which have a high degree of acute toxicity

8.1. Overview

As described in the above Cal/OSHA rule there are three classes of compounds which must receive special consideration. Each of the three classes are defined by different criteria, described in the sections to follow.

8.1.1. Class 1: Select Carcinogens

Select carcinogens are defined as those substances that meet any of the following four criteria. The chemicals specified by these criteria are subject to expansion and revision.

OSHA-regulated carcinogens The following substances are specifically designated as carcinogens and OSHA has written standards for these materials. Changes to this list can be identified through the local OSHA office or from the current Code of Federal Regulations (29 CFR 1910.1000). The following substances are OSHA-regulated carcinogens:

Chemical name	CAS number
2-Acetylaminofluorene	53-96-3
Acrylonitrile	107-13-1
3-Aminodiphenyl	92-67-1
Arsenic, inorganic (specify compounds)	7440-38-2
Asbestos (specify material)	1332-21-4
Benzene	71-43-2
Benzidine (and its salts)	92-87-5
Bis-chloromethyl ether	542-88-1
Coke oven emmissions	00-00-0
1,2-Dibromo-3-chloropropane	96-12-8
3,3'-Dichlorobenzidine	91-94-1
4-Dimethylaminoazobenzene	60-11-7
Ethylene dibromide	106-93-4
Ethylene oxide	75-21-8
Ethyleneimine	151-56-4
Formaldehyde	50-00-0
Methyl chloromethyl ether	107-30-2
4,4'-Methylene bis-(2-chloroaniline)	101-14-4
Alpha-naphthylamine	134-32-7
Beta-naphthylamine	91-59-8
4-Nitrobiphenyl	92-93-3
N-Nitroso dimethylamine	62-75-9
Beta-propiolactone	57-57-8
Vinyl chloride	75-01-4

National Toxicology Program (NTP) All the chemicals listed in the "Annual Report on Carcinogens" published by the National Toxicology Program as "known to be carcinogens". This list is reprinted in Appendix H.

International Agency for Research on Cancer (IARC) All the chemicals listed in the publication "International Agency for Research on Cancer Monographs" under the list titled: "Group 1 - Carcinogenic to Humans". This list is reprinted in Appendix H.

Other Lists Chemicals that appear in the aforementioned NTP document on the list headed "reasonably anticipated to be carcinogens", or in the aforementioned IARC document on the lists headed 2A (probably carcinogenic to humans) and 2B (possibly carcinogenic to humans) and also meet the following criteria:

"Causes a statistically significant tumor incidence in experimental animals in accordance with any of the following criteria:

- After inhalation exposure of 6-7 hours per day, 5 days per week, for a significant portion of a lifetime to levels of less than 10mg/m^3
- After repeated skin application of less than 300mg/kg of body weight per week; or
- After oral dosages of less than 50 mg/kg of body weight per day

Both of these lists are reprinted in Appendix H.

8.1.2. Class 2: Reproductive Toxins

OSHA defines these chemicals as substances which affect reproductive capabilities including chromosomal damage (mutations), and effects on fetuses (teratogenesis). Employers and employees may be aware of this potential through inspection of the SDS or MSDS for the substances in use in the laboratory. The following precautions will be taken when working with reproductive toxins:

a) Suitable gloves to prevent hand contact shall be worn when exposed to reproductive toxins and/or allergens.

b) Women of childbearing age will handle reproductive toxins only in a hood with confirmed satisfactory performance and will use protective equipment to prevent skin contact.

c) Reproductive toxins will be stored in adequately ventilated areas in unbreakable secondary containers.

d) The Chemical Hygiene Officer, or campus designee, department chair, and school dean will be notified of spills and other exposure incidents. A physician or industrial hygienist will be consulted when appropriate.

8.1.3. Class 3: High Acute Toxicity Compounds

The Hazard Communication Standard is used by OSHA to define those compounds with high acute toxicity. OSHA uses the following criteria:

a) median LD 50 of 50 mg/kg orally in albino rats weighing 200-300 grams

b) median LD 50 of 200 mg/kg by continuous contact for 24 hours with the bare skin of albino rabbits weighing between two and three kilograms

c) median LC 50 in air of 200 ppm (or 2 mg/liter) continuous inhalation for one hour

All three classes of compounds described above fall into the single category in the laboratory standard: particularly hazardous substances. For any such chemical, when it is used in a lab, the employer must make provisions for additional protection where appropriate, to include special operational procedures. Supervisors or supervising faculty whose laboratory operations include the use of particularly hazardous substances must follow the guidelines described below for special operational procedures.

8.1.4. Other Special Chemical Classes: High Chronic Toxicity Compounds

In addition to the 3 Classes of compounds listed above, Chemicals of High *Chronic* toxicity also deserve special attention. The following protocols apply:

a) Containers will be stored in a ventilated, limited access area in labeled, unbreakable, chemically resistant secondary containers.

b) All transfer and work with these substances is to be conducted in a designated area, marked with warning signs.

c) Prior approval of the department chair will be obtained before toxicologically significant amounts of these chemicals are to be used on a regular basis.

9. SPECIAL OPERATIONAL PROCEDURES

9.1. Designated Work Areas

CCR Title 8
**Section 5191(e)(3)(H)(1) Provisions for additional employee protection for work with particularly hazardous substances. These include "select carcinogens
" reproductive toxins and substances which have a high degree of acute toxicity. Specific consideration shall be given to the following provisions which shall be included where appropriate: Establishment of a designated area.**

(a) Areas where chemicals of high chronic or high acute toxicity are stored and/or used will have restricted access and have special warning signs.

(b) The "Buddy rule" will be enforced at all times (two people will be present) during work with these chemicals.

9.2. Containment Devices

CCR Title 8, Section 5191(e)(3)(H)(2) Provisions for additional employee protection for work with particularly hazardous substances. These include "select carcinogens," reproductive toxins and substances which have a high degree of acute toxicity. Specific consideration shall be given to the following provisions which shall be included where appropriate: Use of containment devices such as fume hoods or glove boxes

Chemicals of high chronic or high acute toxicity will be used in a hood with a minimum face velocity of 100 linear feet per minute on average or in some other containment device.

9.3. Handling of Hazardous Waste

CCR Title 8, Section 5191(e)(3)(H)(2) Provisions for additional employee protection for work with particularly hazardous substances. These include "select carcinogens," reproductive toxins and substances which have a high degree of acute toxicity. Specific consideration shall be given to the following provisions which shall be included where appropriate: Procedures for the safe removal of contaminated waste.

(a) Gloves will be used with chemicals of high chronic or high acute toxicity. Hands and face will be washed immediately after working with these chemicals.

(b) Waste products will be disposed in accordance with procedures described in Chapter 1 of this Chemical Hygiene Plan.

9.4. Decontamination Procedures

CCR Title 8
Section 5191(e)(3)(H)(2) Provisions for additional employee protection for work with particularly hazardous substances. These include "select carcinogens
" reproductive toxins and substances which have a high degree of acute toxicity. Specific consideration shall be given to the following provisions which shall be included where appropriate: Procedures for the safe removal of contaminated waste.

Special consideration will be given to both housekeeping and decontamination procedures while working with chemicals of high chronic or high acute toxicity. Special care will be taken to clean surfaces after use and immediate disposal of gloves will occur after handling these chemicals.

10. REFERENCES

Mahn, William J., Academic Laboratory Chemical Hazards Guidebook, Van Nostrand Reinhold, New York, 1991, pp. 1-77.

Prudent Practices for Disposal of Hazardous Chemicals from Laboratories, National Academy Press, Washington, D.C., 1983, p. 133.

Gold, David T., Fire Brigade Training Manual, National Fire Protection Association, Quincy, MA, 1982, pp. 58-71.

Smith, Warren, ed., Safety in Academic Chemistry Laboratories, American Chemical Society, Washington, D.C., 1990, pp. 1-67.

APPENDIX A

CAL/OSHA STANDARD: OCCUPATIONAL EXPOSURE TO HAZARDOUS CHEMICALS IN LABORATORIES

Subchapter 7. General Industry Safety Orders
Group 16. Control of Hazardous Substances
Article 109. Hazardous Substances and Processes

New query

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§5191. Occupational Exposure to Hazardous Chemicals in Laboratories.

(a) Scope and application.

(1) This section shall apply to all employers engaged in the laboratory use of hazardous chemicals as defined below.

(2) Where this section applies, it shall supersede, for laboratories, the requirements of Title 8 of the California Code of Regulations Section 5190 and Article 110, Regulated Carcinogens of the General Industry Safety Orders, except as follows:

(A) The requirement to limit employee exposure to the specific exposure limit.

(B) When that particular regulation states otherwise, as in the case of Section 5209(c)(6).

(C) Prohibition or prevention of eye and skin contact where specified by any health regulation shall be observed.

(D) Where the action level (or in the absence of an action level, the exposure limit) is exceeded for a regulated substance with exposure monitoring and medical surveillance requirements.

(E) The "report of use" requirements of Article 110, (Section 5200 et. seq.) Regulated Carcinogens regulations.

(F) Section 5217 shall apply to anatomy, histology and pathology laboratories.

(3) This regulation shall not apply to:

(A) Uses of hazardous chemicals which do not meet the definition of laboratory use, and in such cases, the employer shall comply with the relevant regulations in Title 8, California Code of Regulations, even is such use occurs in a laboratory.

(B) Laboratory uses of hazardous chemicals which provide no potential for employee exposure. Examples of such conditions might include:

1. Procedures using chemically-impregnated test media such as Dip-and-Read tests where a reagent strip is dipped into the specimen to be tested and the results are interpreted by comparing the color reaction to a color chart supplied by the manufacturer of the test strip; and

2. Commercially prepared kits such as those used in performing pregnancy tests in which all of the reagents needed to conduct the test are contained in the kit.

(b) Definitions

Action level. A concentration designated in Title 8, California Code of Regulations for a specific substance, calculated as an eight (8)-hour time weighted average, which initiates certain required activities such as exposure monitoring and medical surveillance.

Carcinogen (see "select carcinogen").

Chemical Hygiene Officer. An employee who is designated by the employer, and who is qualified by training or experience, to provide technical guidance in the development and implementation of the provisions of the Chemical Hygiene Plan. This definition is not intended to place limitations on the position description or job classification that the designated individual shall hold within the employer's organizational structure.

Chemical Hygiene Plan. A written program developed and implemented by the employer which sets forth procedures, equipment, personal protective equipment and work practices that

(1) are capable of protecting employees from the health hazards presented by hazardous chemicals used in that particular work place and

(2) meets the requirements of subsection 5191(e).

Chief. The Chief of the Division of Occupational Safety and Health.

Combustible liquid. Any liquid having a flashpoint at or above 100° F (37.8° C), but below 200° F (93.3° C) except any mixture having components with flashpoints of 200° F (93.3° C), or higher, the total volume of which make up 99 percent or more of the total volume of the mixture.

Compressed gas.

(1) A gas or mixture of gases having, in a container, an absolute pressure exceeding 40 psi at 70° F (21.1° C); or

(2) A gas or mixture of gases having, in a container, an absolute pressure exceeding 104 psi at 130° F (54.4° C) regardless of the pressure at 70° F (21.1° C); or

(3) A liquid having a vapor pressure exceeding 40 psi at 100° F (37.8° C) as determined by ASTM D-323-72.

Designated area. An area which may be used for work with "select carcinogens," reproductive toxins or substances which have a high degree of acute toxicity. A designated area may be the entire laboratory, an area of a laboratory or a device such as a laboratory hood.

Emergency. Any occurrence such as, but not limited to, equipment failure, rupture of containers or failure of control equipment which results in an uncontrolled release of a hazardous chemical into the workplace.

Employee. An individual employed in a laboratory workplace who may be exposed to hazardous chemicals in the course of his or her assignments.

Explosive. A chemical that causes a sudden, almost instantaneous release of pressure, gas, and heat when subjected to sudden shock, pressure, or high temperature.

Flammable. A chemical that falls into one of the following categories:

(1) "Aerosol, flammable" means an aerosol that, when tested by the method described in 16 CFR 1500.45, yields a flame projection exceeding 18 inches at full valve opening, or a flashback (a flame extending back to the valve) at any degree of valve opening;

(2) "Gas, flammable" means:

(A) A gas that, at ambient temperature and pressure, forms a flammable mixture with air at a concentration of 13 percent by volume or less; or

(B) A gas that, at ambient temperature and pressure, forms a range of flammable mixtures with air greater than 12 percent by volume, regardless of the lower explosive limit.

(3) "Liquid, flammable" means any liquid having a flashpoint below 100° F (37.8° C), except any mixture having components with flashpoints of 100° F (37.8° C) or higher, the total of which make up 99 percent or more of the total volume of the mixture.

(4) "Solid, flammable" means a solid, other than a blasting agent or explosive as defined in 29 CFR 1910.109(a), that is liable to cause fire through friction, absorption of moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or which can be ignited readily and when ignited burns so vigorously and persistently as to create a serious hazard. A chemical shall be considered to be a flammable solid if, when tested by the method described in 16 CFR 1500.44, it ignites and burns with a self-sustained flame at a rate greater than one-tenth of an inch per second along its major axis.

Flashpoint. The minimum temperature at which a liquid gives off a vapor in sufficient concentration to ignite when tested as follows:

(1) Tagliabue Closed Tester (See American National Standard Method of Test for Flash Point by Tag Closed Tester, Z11.24 - 1979 (ASTM D 56-79) - for liquids with a viscosity of less than 45 Saybolt Universal Seconds (SUS) at 100° F (37.8° C), or that do not contain suspended solids, and do not have a tendency to form a surface film under test; or

(2) Pensky-Martens Closed Tester (see American National Standard Method of Test for Flash Point by Pensky-Martens closed tester), Z11.7 - 1979 (ASTM D 93-79) for liquids with a viscosity equal to or greater than 45 SUS at 100° F (37.8°C), or that contain suspended solids, or that have a tendency to form a surface film under test; or

(3) Setaflash Closed Tester (see American National Standard Method of Test for Flash Point by Setaflash Closed Tester (ASTM D 3278-78)). Organic peroxides, which undergo autoaccelerating thermal decomposition, are excluded from any of the flashpoint determination methods specified above.

Hazardous chemical. A chemical for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees. The term "health hazard" includes chemicals which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic systems, and agents which damage the lungs, skin, eyes, or mucous membranes.

Appendices A and B of the Hazard Communication Standard (Section 5194) provide further guidance in defining the scope of health hazards and determining whether or not a chemical is to be considered hazardous for purposes of this regulation.

Laboratory. A facility where the "laboratory use of hazardous chemicals" occurs. It is a workplace where relatively small quantities of hazardous chemicals are used on a non-production basis.

Laboratory scale. Work with substances in which the containers used for reactions, transfers, and other handling of substances are designed to be easily and safety manipulated by one person. "Laboratory scale" excludes those workplaces whose function is to produce commercial quantities of materials.

Laboratory-type hood. A device located in a laboratory, enclosed on five sides with a movable sash or fixed partial enclosure on the remaining side; constructed and maintained to draw air from the laboratory and to prevent or minimize the escape of air contaminants into the laboratory; and allows chemical manipulations to be conducted in the enclosure without insertion of any portion of the employee's body other than hands and arms.

Walk-in hoods with adjustable sashes meet the above definition provided that the sashes are adjusted during use so that the airflow and the exhaust of air contaminants are not compromised and employees do not work inside the enclosure during the release of airborne hazardous chemicals.

Laboratory use of hazardous chemicals. Handling or use of such chemicals in which all of the following conditions are met:

(1) Chemical manipulations are carried out on a "laboratory scale";

(2) Multiple chemical procedures or chemicals are used;

(3) The procedures involved are not part of a production process, nor in any way simulate a production process; and

(4) "Protective laboratory practices and equipment" are available and in common use industry-wide to minimize the potential for employee exposure to hazardous chemicals.

Medical consultation. A consultation which takes place between an employee and a licensed physician for the purpose of determining what medical examinations or procedures, if any, are appropriate in cases where a significant exposure to a hazardous chemical may have taken place.

Organic peroxide. An organic compound that contains the bivalent -o-o- structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.

Oxidizer. A chemical other than a blasting agent or explosive as defined in Section 5237(a), that initiates or promotes combustion in other materials, thereby causing fire either of itself or through the release of oxygen or other gases.

Physical hazard. A chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive) or water-reactive.

Protective laboratory practices and equipment. Those laboratory procedures, practices and equipment accepted by laboratory health and safety experts as effective, or that the employer can show to be effective, in minimizing the potential for employee exposure to hazardous chemicals.

Reproductive toxins. Chemicals which affect the reproductive capabilities including chromosomal damage (mutations) and effects on fetuses (teratogenesis).

Select carcinogen. Any substance which meets one of the following criteria:

(1) It is regulated by Cal/OSHA as a carcinogen; or

(2) It is listed under the category, "known to be carcinogens," in the Annual Report on Carcinogens published by the National Toxicology Program (NTP) (1985 edition); or

(3) It is listed under Group 1 ("carcinogenic to humans") by the International Agency for Research on Cancer Monographs (IARC) (Volumes 1-48 and Supplements 1-8); or

(4) It is listed in either Group 2A or 2B by IARC or under the category, "reasonably anticipated to be carcinogens" by NTP, and causes statistically significant tumor incidence in experimental animals in accordance with any of the following criteria:

(A) After inhalation exposure of 6-7 hours per day, 5 days per week, for a significant portion of a lifetime to dosages of less than 10 mg/m3;

(B) After repeated skin application of less than 300 mg/kg of body weight per week; or

(C) After oral dosages of less than 50 mg/kg of body weight per day.

Unstable (reactive). A chemical which is the pure state, or as produced or transported, will vigorously polymerize, decompose, condense, or will become self-reactive under conditions of shocks, pressure or temperature.

Water-reactive. A chemical that reacts with water to release a gas that is either flammable or presents a health hazard.

(c) Exposure limits. For laboratory uses of Cal/OSHA regulated substances, the employer shall ensure that laboratory employees' exposures to such substances do not exceed the exposure limits specified in Title 8, California Code of Regulations, Group 16, Section 5139 et seq., of the General Industry Safety Orders.

(d) Employee exposure determination

(1) Initial monitoring. The employer shall measure the employee's exposure to any substance regulated by a standard which requires monitoring if there is reason to believe that exposure levels for that substance exceed the action level (or in the absence of an action level, the exposure limit). The person supervising, directing or evaluating the monitoring shall be competent in industrial hygiene practice.

(2) Periodic monitoring. If the initial monitoring prescribed by subsection 5191(d)(1) discloses employee exposure over the action level (or in the absence of an action level, the exposure limit), the employer shall immediately comply with the exposure monitoring provisions of the relevant regulation.

(3) Termination of monitoring. Monitoring may be terminated in accordance with the relevant regulation.

(4) Employee notification of monitoring results. The employer shall, within 15 working days after the receipt of any monitoring results, notify the employee of these results in writing either individually or by posting results in an appropriate location that is accessible to employees.

(e) Chemical hygiene plan.

(1) Where hazardous chemicals as defined by this regulation are used in the workplace, the employer shall develop and carry out the provisions of a written Chemical Hygiene Plan which is:

(A) Capable of protecting employees from health hazards associated with hazardous chemicals in that laboratory and

(B) Capable of keeping exposures below the limits specified in subsection 5191(c).

(2) The Chemical Hygiene Plan shall be readily available to employees. employee representatives and, upon request, to the Chief.

(3) The Chemical Hygiene Plan shall include each of the following elements and shall indicate specific measures that the employer will take to ensure laboratory employee protection;

(A) Standard operating procedures relevant to safety and health considerations to be followed when laboratory work involves the use of hazardous chemicals:

(B) Criteria that the employer will use to determine and implement control measures to reduce employee exposure to hazardous chemicals including engineering controls, the use of personal protective equipment and hygiene practices; particular attention shall be given to the selection of control measures for chemicals that are known to be extremely hazardous;

(C) A requirement that fume hoods comply with Section 5154.1, that all protective equipment shall function properly and that specific measures shall be taken to ensure proper and adequate performance of such equipment;

(D) Provisions for employee information and training as prescribed in subsection 5191(f);

(E) The circumstances under which a particular laboratory operation, procedure or activity shall require prior approval from the employer or the employer's designee before implementation;

(F) Provisions for medical consultation and medical examinations in accordance with subsection 5191(g);

(G) Designation of personnel responsible for implementation of the Chemical Hygiene Plan including the assignment of a Chemical Hygiene officer and, if appropriate, establishment of a Chemical Hygiene Committee; and

(H) Provisions for additional employee protection for work with particularly hazardous substances. These include "select carcinogens," reproductive toxins and substances which have a high degree of acute toxicity. Specific consideration shall be given to the following provisions which shall be included where appropriate;

1. Establishment of a designated area;

2. Use of containment devices such as fume hoods or glove boxes;

3. Procedures for safe removal of contaminated waste; and

4. Decontamination procedures.

(4) The employer shall review and evaluate the effectiveness of the Chemical Hygiene Plan at least annually and update it as necessary.

Note: Appendix A of this section is non-mandatory but provides guidance to assist employers in the development of the Chemical Hygiene Plan.

(f) Employee information and training.

(1) The employer shall provide employees with information and training to ensure that they are apprised of the hazards of chemicals present in their work area. Information and training may relate to an entire class of hazardous substances to the extent appropriate.

(2) Such information shall be provided at the time of an employee's initial assignment to a work area where hazardous chemicals are present and prior to assignments involving new exposure situations. The frequency of refresher information and training shall be determined by the employer.

(3) Information. Employees shall be informed of:

(A) The contents of this regulation and its appendices which shall be available to employees;

(B) The location and availability of the employer's Chemical Hygiene Plan;

(C) The exposure limits for Cal/OSHA regulated substances or recommended exposure limits for other hazardous chemicals where there is no applicable Cal/OSHA regulation;

(D) Signs and symptoms associated with exposures to hazardous chemicals used in the laboratory; and

(E) The location and availability of known reference material on the hazards, safe handling, storage and disposal of hazardous chemicals found in the laboratory including, but not limited to, Material Safety Data Sheets received from the chemical supplier.

(4) Training.

(A) Employee training shall include;

1. Methods and observations that may be used to detect the presence or release of a hazardous chemical (such as monitoring conducted by the employer, continuous monitoring devices, visual appearance or odor of hazardous chemicals when being released, etc.);

2. The physical and health hazards of chemicals in the work area; and

3. The measures employees can take to protect themselves from these hazards, including specific procedures the employer has implemented to protect employees from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures, and personal protective equipment to be used.

(B) The employee shall be trained on the applicable details of the employer's written Chemical Hygiene Plan.

(g) Medical consultation and medical examinations.

(1) The employer shall provide all employees who work with hazardous chemicals an opportunity to receive medical attention, including any follow-up examinations which the examining physician determines to be necessary, under the following circumstances;

(A) Whenever an employee develops signs or symptoms associated with a hazardous chemical to which the employee may have been exposed in the laboratory, the employee shall be provided an opportunity to receive an appropriate medical examination.

(B) Where exposure monitoring reveals an exposure level above the action level (or in the absence of an action level, the exposure limit) for a Cal/OSHA regulated substance for which there are exposure monitoring and medical surveillance requirements, medical surveillance shall be established for the affected employee as prescribed by the particular standard.

(C) Whenever an event takes place in the work area such as a spill, leak, explosion or other occurrence resulting in the likelihood of a hazardous exposure, the affected employee shall be provided an opportunity for a medical consultation. Such consultation shall be for the purpose of determining the need for a medical examination.

(2) All medical examinations and consultations shall be performed by or under the direct supervision of a licensed physician and shall be provided without cost to the employee, without loss of pay and at a reasonable time and place.

(3) Information provided to the physician. The employer shall provide the following information to the physician;

(A) The identity of the hazardous chemical(s) to which the employee may have been exposed;

(B) A description of the conditions under which the exposure occurred including quantitative exposure data, if available; and

(C) A description of the signs and symptoms of exposure that the employee is experiencing, if any.

(4) Physician's written opinion.

(A) For examination or consultation required under this standard, the employer shall obtain a written opinion from the examining physician which shall include the following;

1. Any recommendation for further medical follow-up;

2. The results of the medical examination and any associated tests, if requested by the employee;

3. Any medical condition which may be revealed in the course of the examination which may place the employee at increased risk as a result of exposure to a hazardous chemical found in the workplace; and

4. A statement that the employee has been informed by the physician of the results of the consultation or medical examination and any medical condition that may require further examination or treatment.

(B) The written opinion shall not reveal specific findings of diagnoses unrelated to occupational exposure.

(h) Hazard identification.

(1) With respect to labels and material safety data sheets;

(A) Employers shall ensure that labels on incoming containers of hazardous chemicals are not removed or defaced.

(B) Employers shall maintain in the workplace any material safety data sheets that are received with incoming shipments of hazardous chemicals, and ensure that they are readily accessible to laboratory employees during each work shift when they are in their work area(s).

(2) The following provisions shall apply to chemical substances developed in the laboratory;

(A) If the composition of the chemical substance which is produced exclusively for the laboratory's use is known, the employer shall determine if it is a hazardous chemical as defined in subsection 5191(b). If the chemical is determined to be hazardous, the employer shall provide appropriate training as required under subsection 5191(f).

(B) If the chemical produced is a byproduct whose composition is not known, the employer shall assume that the substance is hazardous and shall implement subsection 5191(e).

(C) If the chemical substance is produced for commercial purposes by another user outside of the laboratory, the employer shall comply with the Hazard Communication Standard (Section 5194) including the requirements for preparation of material safety data sheets and labeling.

(i) Use of respirators.

Where the use of respirators is necessary to maintain exposure below permissible exposure limits, the employer shall provide, at no cost to the employee, the proper respiratory equipment. Respirators shall be selected and used in accordance with the requirements of Section 5144.

(j) Recordkeeping.

(1) The employer shall establish and maintain for each employee an accurate record of any measurements taken to monitor employee exposures and any medical consultation and examinations including tests or written opinions required by this regulation.

(2) The employer shall ensure that such records are kept, transferred, and made available in accordance with Section 3204.

(k) Dates

(1) Employers shall have developed and implemented a written Chemical Hygiene Plan no later than October 31, 1991.

(2) Subsection (a) (2) shall not take effect until the employer has developed and implemented a written Chemical Hygiene Plan.

(l) Appendices. The information contained in the appendices is not intended, by itself, to create any additional obligations not otherwise imposed or to detract from any existing obligation.

NOTE: Authority cited: Sections 142.3 and 9020, Labor Code. Reference: Sections 142.3, 9004(d), 9009 and 9020, Labor Code.

Appendix A
Appendix B

HISTORY

1. New section filed 3-25-91; operative 4-24-91 (Register 91, No. 17).

2. Editorial correction of printing errors (Register 92, No. 33).

3. Change without regulatory effect amending Appendix B subsections (b)1. and (c)1. filed 12-28-92 pursuant to section 100, title 1, California Code of Regulations (Register 93, No. 1).

4. Editorial correction of Appendix A subsection D.11.(b) (Register 95, No. 24).


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APPENDIX B

OSHA STANDARDS SUBPART Z - TOXIC AND HAZARDOUS SUBSTANCES HAZARD COMMUNICATION STANDARD

1. Subchapter 7. General Industry Safety Orders
Group 16. Control of Hazardous Substances
Article 109. Hazardous Substances and Processes

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2. §5194. Hazard Communication

- Guide to California Hazard Communication Regulation

(a) (Reserved)
(b) Scope and Application.
(1) This section requires manufacturers or importers to classify the hazards of chemicals which they produce or import, and all employers to provide information to their employees about the hazardous chemicals to which they may be exposed, by means of a hazard communication program, labels and other forms of warning, safety data sheets, and information and training. In addition, this section requires distributors to transmit the required information to employers.
(2) This section applies to any hazardous chemical which is known to be present in the work place in such a manner that employees may be exposed under normal conditions of use or in a reasonably foreseeable emergency resulting from work place operations.
(3) This section applies to laboratories that primarily provide quality control analyses for manufacturing processes or that produce hazardous chemicals for commercial purposes, and to all other laboratories except those under the direct supervision and regular observation of an individual who has knowledge of the physical hazards, health hazards, and emergency procedures associated with the use of the particular hazardous chemicals involved, and who conveys this knowledge to employees in terms of safe work practices. Such excepted laboratories must also ensure that labels of incoming containers of hazardous chemicals are not removed or defaced pursuant to section 5194(f)(9), and must maintain any safety data sheets that are received with incoming shipments of hazardous chemicals and ensure that they are readily available to laboratory employees pursuant to section 5194(g).
(4) This section does not require labeling of the following chemicals:
(A) Any pesticide as such term is defined in the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 136 et seq.), when subject to the labeling requirements of that Act and labeling regulations issued under that Act by the Environmental Protection Agency;
(B) Any food, food additive, color additive, drug, cosmetic, or medical or veterinary device, including materials intended for use as ingredients in such products (e.g., flavors and fragrances), as such terms are defined in the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 301 et seq.) and regulations issued under that Act, when they are subject to the labeling requirements of that Act and labeling regulations issued under that Act by the Food and Drug Administration;
(C) Any distilled spirits (beverage alcohols), wine, or malt beverage intended for nonindustrial use, as such terms are defined in the Federal Alcohol Administration Act (27 U.S.C. 201 et seq.) and regulations issued under that Act, when subject to the labeling requirements of that Act and

labeling regulations issued under that Act by the Bureau of Alcohol, Tobacco, Firearms and Explosives; and;
(D) Any consumer product or hazardous substance as those terms are defined in the Consumer Product Safety Act (15 U.S.C. 2051 et seq.) and Federal Hazardous Substances Act (15 U.S.C. 1261 et seq.) respectively, when subject to a consumer product safety standard or labeling requirement of those Acts, or regulations issued under those Acts by the Consumer Product Safety Commission.
(5) This section does not apply to:
(A) Any hazardous waste as such term is defined by the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended (42U.S.C. 6901 et seq.), when subject to regulations issued under that Act by the Environmental Protection Agency;
(B) Tobacco or tobacco products;
(C) Wood or wood products including lumber which will not be processed, where the manufacturer or importer can establish that the only hazard they pose to employees is the potential for flammability or combustibility (non-excluded hazardous chemicals which are used in conjunction with wood or wood products, or are known to be present as impurities in those materials, and wood which may be subsequently sawed or cut, generating dust, are covered by this section);
(D) Articles (hazardous chemicals used in the manufacture or use of an article are covered by this section unless otherwise excluded);
(E) Foods, drugs, or cosmetics intended for personal consumption by employees while in the workplace;
(F) Retail food sale establishments and all other retail trade establishments, exclusive of processing and repair work areas;
(G) Consumer products packaged for distribution to, and use by, the general public, provided that employee exposure to the product is not significantly greater than the consumer exposure occurring during the principal consumer use of the product;
(H) The use of a chemical in compliance with regulations of the Director of the Department of Pesticide Regulation issued pursuant to section 12981 of the Food and Agricultural Code.
(I) Work operations where employees only handle chemicals in sealed containers which are not opened under normal conditions of use (such as are found in marine cargo handling, warehousing, or transportation); however, this section does apply to these operations as follows:
1. Employers shall ensure that labels on incoming containers of hazardous chemicals are not removed or defaced;
2. Employers shall maintain copies of any safety data sheets that are received with incoming shipments of the sealed containers of hazardous chemicals, shall obtain a safety data sheet for sealed containers of hazardous chemicals received without a safety data sheet if an employee requests the safety data sheet, and shall ensure that the safety data sheets are readily accessible during each work shift to employees when they are in their work area(s); and,
3. Employers shall ensure that employees are provided with information and training in accordance with subsection (h) except for the location and availability of the written hazard communication program under subsection (h)(2)(C), to the extent necessary to protect them in the event of a spill or leak of a hazardous chemical from a sealed container.
(6) Proposition 65 Warnings.
(A) Notwithstanding any other provision of law including the preceding subsections, an employer which is a person in the course of doing business within the meaning of Health and Safety Code Section 25249.11(a) and (b), is subject to the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65 or the “Act”) (Health and Safety Code § 25249.5 et seq.), and shall comply with the Act in the manner set forth in subsections (B) and (C) below. The following employers are not subject to the Act:

1. an employer employing fewer than ten employees;
2. any city, county, or district or any department or agency thereof or the state or any department or agency thereof or the federal government or any department or agency thereof;
3. any entity in its operation of a public water system as defined in Health and Safety Code Section 4010.1.
(B) Exposures Subject to Proposition 65 and Hazard Communication. Before exposing any employee to any hazardous substance that otherwise falls within the scope of this section and which requires a warning under this Act (see 22 CCR Section 12000, Chemicals Known to the State to Cause Cancer or Reproductive Toxicity) except as provided in subsection (D) below, any employer subject to the Act shall comply with the requirements set forth in subsections (d) through (k). Such compliance shall be deemed compliance with the Act.
(C) Exposures Subject to Proposition 65 Only. Before knowingly and intentionally exposing any employee to any hazardous substance that does not otherwise fall within the scope of the section, but which requires a warning under the Act (see 22 CCR Section 12000, Chemicals Known to the State to Cause Cancer or Reproductive Toxicity) except as provided in subsection (D) below, any employer subject to the Act shall either provide a warning to employees in compliance with California Code of Regulations Title 22 (22 CCR) Section 12601(c) in effect on May 9, 1991 or shall comply with the requirements set forth in subsections (d) through (k).
(D) Exposures Not Subject to Proposition 65. A warning required by subsection (B) and (C) above shall not apply to any of the following:
1. An exposure for which federal law governs warning in a manner that preempts state authority.
2. An exposure that takes place less than twelve months subsequent to the listing of the chemical in 22 CCR Section 12000.
3. An exposure for which the employer responsible can show that the exposure poses no significant risk assuming lifetime exposure at the level in question for the chemicals known to the State to cause cancer, and that the exposure will have no observable effect assuming exposure at one thousand (1,000) times the level in question for chemicals known to the State to cause reproductive toxicity, based on evidence and standards of comparable scientific validity to the evidence and standards which form the scientific basis for the listing of such chemical in 22 CCR Section 12000. In any enforcement action the burden of showing that an exposure meets the criteria of this subsection shall be on the employer.
(E) Additional Enforcement of Proposition 65. In addition to any other applicable enforcement provision, violations or threatened violations of the Act may be enforced in the manner set forth in Health and Safety Code Section 25249.7 for violations and threatened violations of Health and Safety Code Section 25249.6. Compliance with 22 CCR Section 12601(c) in effect on May 9, 1991 shall be deemed a defense to an enforcement action under Health and Safety Code Section 25249.7.
(F) All terms and provisions of subsection (b)(6) shall have the same meaning as the following 22 CCR Sections in effect on May 9, 1991: 12201(a), 12201(b), 12201(c), 12201(d), 12201(f), 12201(k), 12502, 12601, 12701(a), 12701(b), 12701(d), 12703, 12705, 12707, 12709, 12711, 12721, 12801, 12803, 12805, 12821 and 12901. The above listed 22 CCR Sections in effect on May 9, 1991 are printed in Appendix G to this section. Additionally, all terms and provisions of subsection (b)(6) shall have the same meaning as in the Act and in 22 CCR Section 12000.
(c) Definitions.
Article.
A manufactured item: (1) Which is formed to a specific shape or design during manufacture; (2) which has end use function(s) dependent in whole or in part upon it shape or design during end use; and (3) which does not release, or otherwise result in exposure to, a hazardous chemical un-

der normal conditions of use or in a reasonably foreseeable emergency resulting from workplace operations.
CAS number.
The unique identification number assigned by the Chemical Abstracts Service to specific chemical substances.
Chemical.
Any substance, or mixture of substances.
Chemical name.
The scientific designation of a chemical in accordance with the nomenclature system developed by the International Union of Pure and Applied Chemistry (IUPAC) or the Chemical Abstracts Service (CAS) rules of nomenclature, or a name which will clearly identify the chemical for the purpose of conducting a hazard classification.
Chief.
The Chief of the Division of Occupational Safety and Health, P.O. Box 420603, San Francisco, CA 94142, or designee.
Classification.
Identification of relevant data regarding the hazards of a chemical; review of those data to ascertain the hazards associated with the chemical; and decision regarding whether the chemical will be classified as hazardous according to the definition of hazardous chemical in this section. In addition, classification for health and physical hazards includes the determination of the degree of hazard, where appropriate, by comparing the data with the criteria for health and physical hazards.
Combustible liquid.
Any liquid having a flashpoint greater than 199.4°F (93°C) (formerly designated Class IIIB Combustible liquids).
Common name.
Any designation or identification such as code name, code number, trade name, brand name or generic name used to identify a chemical other than by its chemical name.
Container.
Any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, tank truck, or the like that contains a hazardous chemical. For purposes of this section, pipes or piping systems are not considered to be containers.
Department.
The Department of Industrial Relations, P.O. Box 420603, San Francisco, CA 94142, or designee.
Designated representative.
Any individual or organization to whom an employee gives written authorization to exercise such employee's rights under this section. A recognized or certified collective bargaining agent shall be treated automatically as a designated representative without regard to written employee authorization.
Director.
The Director of Industrial Relations, P.O. Box 420603, San Francisco, CA 94142, or designee.
Distributor.
A business, other than a manufacturer or importer, which supplies hazardous chemicals to other distributors or to employers.
Division.
The Division of Occupational Safety and Health (Cal/OSHA), California Department of Industrial Relations, or designee.
Emergency.

Any potential occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment, which may or does result in a release of a hazardous chemical into the workplace.

Employee.

Every person who is required or directed by any employer, to engage in any employment, or to go to work or be at any time in any place of employment.

Employer.

Employer means:

(A) The State and every State agency.

(B) Each county, city, district, and all public and quasi-public corporations and public agencies therein.

(C) Every person including any public service corporation, which has any natural person in service.

(D) The legal representative of any deceased employer.

Exposure or Exposed.

Any situation arising from work operation where an employee may ingest, inhale, absorb through the skin or eyes, or otherwise come into contact with a hazardous chemical.

Hazard category.

The division of criteria within each hazard class, e.g., oral acute toxicity and flammable liquids include four hazard categories. These categories compare hazard severity within a hazard class and should not be taken as a comparison of hazard categories more generally.

Hazard class.

The nature of the physical or health hazards, e.g., flammable solid, carcinogen, oral acute toxicity.

Hazard not otherwise classified (HNOC).

An adverse physical or health effect identified through evaluation of scientific evidence during the classification process that does not meet the specified criteria for the physical and health hazard classes addressed in this section. This does not extend coverage to adverse physical and health effects for which there is a hazard class addressed in this section, but the effect either falls below the cut-off value/concentration limit of the hazard class or is under a GHS hazard category that has not been adopted by OSHA (e.g., acute toxicity Category 5).

Hazard statement.

A statement assigned to a hazard class and category that describes the nature of the hazard(s) of a chemical, including, where appropriate, the degree of hazard.

Hazardous chemical.

Any chemical which is classified as a physical hazard or a health hazard, a simple asphyxiant, combustible dust, pyrophoric gas, a hazard not otherwise classified, or is included in the List of Hazardous Substances prepared by the Director pursuant to Labor Code section 6382.

Health hazard.

A chemical which is classified as posing one of the following hazardous effects: acute toxicity (any route of exposure); skin corrosion or irritation; serious eye damage or eye irritation; respiratory or skin sensitization; germ cell mutagenicity; carcinogenicity; reproductive toxicity; specific target organ toxicity (single or repeated exposure); or aspiration hazard. The criteria for determining whether a chemical is classified as a health hazard are detailed in subsection (d) and Appendix A to this section - Health Hazard Criteria.

Immediate use.

The hazardous chemical will be under the control of and used only by the person who transfers it from a labeled container and only within the work shift in which it is transferred.

Importer.

The first business with employees within the Customs Territory of the United States which receives hazardous chemicals produced in other countries for the purpose of supplying them to distributors or purchasers within the United States.

Label.

An appropriate group of written, printed or graphic information elements concerning a hazardous chemical that is affixed to, printed on, or attached to the immediate container of a hazardous chemical, or to the outside packaging.

Label elements.

The specified pictogram, hazard statement, signal word and precautionary statement for each hazard class and category.

Manufacturer.

A person who produces, synthesizes, extracts, or otherwise makes a hazardous chemical.

Mixture.

A combination or a solution composed of two or more substances in which they do not react.

NIOSH. The National Institute for Occupational Safety and Health, U.S. Department of Health and Human Services.

Physical hazard.

A chemical that is classified as posing one of the following hazardous effects: explosive; flammable (gases, aerosols, liquids, or solids); oxidizer (liquid, solid or gas); self-reactive; pyrophoric (liquid or solid); self-heating; organic peroxide; corrosive to metal; gas under pressure; combustible liquid; water-reactive; or in contact with water emits flammable gas. See Appendix B to section 5194 - Physical Hazard Criteria.

Pictogram.

A composition that may include a symbol plus other graphic elements, such as a border, background pattern, or color, that is intended to convey specific information about the hazards of a chemical. Eight pictograms are designated under this standard for application to a hazard category.

Precautionary statement.

A phrase that describes recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to a hazardous chemical, or improper storage or handling.

Produce.

To manufacture, process, formulate, repackage, or relabel.

Product identifier.

The name or number used for a hazardous chemical on a label or in the SDS. It provides a unique means by which the user can identify the chemical. The product identifier used shall permit cross-references to be made among the list of hazardous chemicals required in the written hazard communication program, the label and the SDS.

Pyrophoric gas.

A chemical in a gaseous state that will ignite spontaneously in air at a temperature of 130 degrees F (54.4 degrees C) or below.

Responsible party.

Someone who can provide additional information on the hazardous chemical and appropriate emergency procedures, if necessary.

Safety data sheet (SDS).

Written or printed material concerning a hazardous chemical that is prepared in accordance with section 5914(g).

Signal word.

A word used to indicate the relative level of severity of hazard and alert the reader to a potential hazard on the label. The signal words used in this section are “danger” and “warning.” “Danger” is used for the more severe hazards, while “warning” is used for the less severe.
Simple asphyxiant.
A substance or mixture that displaces oxygen in the ambient atmosphere, and can thus cause oxygen deprivation in those who are exposed, leading to unconsciousness and death.
Specific chemical identity.
The chemical name, Chemical Abstracts Service (CAS) Registry Number, or any other information that reveals the precise chemical designation of the substance.
Substance.
Chemical elements and their compounds in the natural state or obtained by any production process, including any additive necessary to preserve the stability of the product and any impurities deriving from the process used, but excluding any solvent which may be separated without affecting the stability of the substance or changing its composition.
Trade secret.
Any confidential formula, pattern, process, device, information, or compilation of information which gives its user an opportunity to obtain a business advantage over competitors who do not know or use it. A trade secret shall not include chemical identity information which is readily discoverable through qualitative analysis. Appendix E to section 5194-Definition of Trade Secret sets out the criteria to be used in evaluating trade secrets.
Use.
To package, handle, react, or transfer.
Work area.
A room or defined space in a workplace where hazardous chemicals are produced or used, and where employees are present.
Workplace.
Any place, and the premises appurtenant thereto, where employment is carried on, except a place the health and safety jurisdiction over which is vested by law in, and actively exercised by, any state or federal agency other than the Division.
(d) Hazard Classification.
(1) Manufacturers and importers shall evaluate chemicals produced in their workplaces or imported by them to determine if they are hazardous and classify the chemicals in accordance with this section. For each chemical, the manufacturer or importer shall determine the hazard classes, and where appropriate, the category of each class that apply to the chemical being classified. Employers are not required to classify chemicals unless they choose not to rely on the classification performed by the manufacturer or importer for the chemical to satisfy this requirement.
(2) Manufacturers, importers, or employers classifying chemicals shall identify and consider the full range of available scientific literature and other evidence concerning the potential hazards. This section does not require manufacturers, importers, or employers to conduct toxicological testing or epidemiological studies of the chemical(s) to determine how to classify the hazards. Appendix A to section 5194 shall be consulted for classification of health hazards and Appendix B to section 5194 shall be consulted for the classification of physical hazards. In addition, the manufacturer, importer, or employer classifying chemicals shall ensure that the identity and health effect of every chemical that they determine does not meet criteria in Appendix A for classification is noted on the safety data sheet if:
(A) There is statistically significant evidence of a hazardous effect; and,
(B) The evidence is based on at least one positive study conducted in accordance with established scientific principles.

(3) Manufacturers, importers, or employers classifying chemicals shall treat any chemical listed on the following sources as a hazardous chemical and shall be required to classify the listed chemical using the criteria as described in Appendix A.
(A) The list of hazardous substances prepared by the Director pursuant to Labor Code section 6382 and as promulgated in title 8, California Code of Regulations, section 339.
(B) 29 CFR part 1910, subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA).
(C) Threshold Limit Values for Chemical Substances in the Work Environment, American Conference of Governmental Industrial Hygienists (ACGIH) (latest edition).
(D) Chemicals specifically identified and regulated under Title 8, Article 107, Dusts, Fumes, Mists, Vapors and Gases, and Article 109, Hazardous Substances and Processes.
The manufacturer, importer, or employer is still responsible for classifying and categorizing the hazards associated with the chemicals in these source lists in accordance with the requirements of this standard and its appendices.
EXCEPTION to subsection (d)(3): A manufacturer, importer, or employer classifying the hazards associated with the chemicals listed above who determines, based on thorough review of all available evidence, that the chemical does not meet the criteria in Appendix A for classification, is not required to classify that chemical provided that the classifier does all of the following:
1. Documents the basis for that determination including the studies or evidence relied upon, and maintains and makes that documentation available to employees, employers and the Division upon request, in accordance with this Section and Section 3204.
2. Discloses the identity of the chemical and the listing upon which the chemical appears on the SDS.
(4) Manufacturers, importers, and employers classifying chemicals shall treat any of the following sources as establishing that a chemical listed has met the total weight of evidence criteria as described in Appendix A for classification as a known or presumed human carcinogen, or a suspected human carcinogen for purposes of this section:
(A) National Toxicology Program (NTP), *Annual Report on Carcinogens*, (latest edition).
(B) International Agency for Research on Cancer (IARC) *Monographs* (latest editions) .
(C) Substances subject to regulation under the Occupational Carcinogen Control Act or which are regulated in Title 8, Article 110, Regulated Carcinogens.
(D) Substances that meet the definition of “select carcinogen” in Title 8, Section 5191.
EXCEPTION to subsection (d)(4): A manufacturer, importer, or employer classifying the hazards associated with the chemicals listed above who determines, based on thorough review of all available evidence, that the chemical does not cause cancer, need not classify that chemical as a carcinogen, provided that the classifier does all of the following:
1. Documents the basis for that determination including the studies or evidence relied upon, and maintains and makes that documentation available to employees, employers and the Division upon request, in accordance with this Section and Section 3204.
2. Discloses the identity of the chemical, and the listing upon which the chemical appears on the SDS. In addition, a notation shall appear on the SDS, in accordance with Appendix D, for all substances listed by NTP or IARC as carcinogens.
(5) Mixtures.
(A) Manufacturers, importers, or employers evaluating chemicals shall follow the procedures described in Appendices A and B to section 5194 to classify the hazards of the chemicals, including determinations regarding when mixtures of the classified chemicals are covered by this section.
(B) Manufacturers, importers or employers are also required to list any hazardous chemical on the SDS known to be present in a mixture, where the chemical is:

1. either a. One percent or more of the mixture or product or b. Two percent of the mixture or product if the hazardous chemical exists as an impurity in the mixture; and
2. the concentration of the chemical in the mixture is below the cut-off concentration specified in Appendix A.
(C) When classifying mixtures they produce or import, manufacturers and importers of mixtures may rely on the information provided on the current SDS of the individual ingredients except where the manufacturer or importer knows, or in the exercise of reasonable diligence should know, that the SDS misstates or omits information required by this section.
(D) If the manufacturer, importer, or employer classifying a mixture has evidence to indicate that a component present in the mixture presents a health risk below the cut-off/concentration limits in Appendix A, this information shall be included on the SDS in accordance with Appendix D.
(6) Manufacturers, importers, or employers classifying chemicals shall describe in writing the procedures they use to determine the hazards of the chemicals they evaluate. The written procedures are to be made available, upon request, to employees, their designated representatives, the Director, and NIOSH. The written description may be incorporated into the written hazard communication program required under section 5194(e).
(e) Written Hazard Communication Program.
(1) Employers shall develop, implement, and maintain at the workplace a written hazard communication program for their employees which at least describes how the criteria specified in sections 5194(f), (g), and (h) for labels and other forms of warning, safety data sheets, and employee information and training will be met, and which also includes the following:
(A) A list of the hazardous chemicals known to be present using a product identifier that is referenced on the appropriate safety data sheet (the list may be compiled for the workplace as a whole or for individual work areas); and
(B) The methods the employer will use to inform employees of the hazards of non-routine tasks (for example, the cleaning of reactor vessels), and the hazards associated with chemicals contained in unlabeled pipes in their work areas.
(2) In multi-employer workplaces, the written hazard communication program shall include the methods employers will use to inform any employers sharing the same work area of the hazardous chemicals to which their employees may be exposed while performing their work, and any suggestions for appropriate protective measures, including the following:
(A) The methods the employer will use to provide the other employer(s) with access to the safety data sheet, or to make it available at a central location in the workplace, for each hazardous chemical the other employer(s)' employees may be exposed to while working;
(B) The methods the employer will use to inform the other employer(s) of any precautionary measures that need to be taken to protect employees during the workplace's normal operating conditions and in foreseeable emergencies; and,
(C) The methods the employer will use to inform the other employer(s) of the labeling system used in the workplace.
(3) The employer shall make the written hazard communication program available, upon request, to employees, their designated representatives, the Chief, and NIOSH, in accordance with the requirements of section 3204(e).
(f) Labels and Other Forms of Warning.
(1) Labels on shipped containers. The manufacturer, importer, or distributor shall ensure that each container of hazardous chemicals leaving the workplace is labeled, tagged or marked. Hazards not otherwise classified do not have to be addressed on the container. Where the manufacturer or importer is required to label, tag or mark the following information shall be provided:
(A) Product identifier;

(B) Signal word;
(C) Hazard statement(s);
(D) Pictogram(s);
(E) Precautionary statement(s); and,
(F) Name, address, and telephone number of the manufacturer, importer, or other responsible party.
(2) The manufacturer, importer, or distributor shall ensure that the information provided under section 5194 (f)(1)(A) through (E) is in accordance with Appendix C to section 5194, for each hazard class and associated hazard category for the hazardous chemical, prominently displayed, and in English (other languages may also be included if appropriate).
(3) The manufacturer, importer, or distributor shall ensure that the information provided under section 5194 (f)(1)(B) through (D) is located together on the tag, label or mark.
(4) Solid materials.
(A) For solid metal (such as a steel beam or a metal casting) that is not exempted as an article due to its downstream use, or shipments of whole grain, the required label may be transmitted to the customer at the time of the initial shipment, and need not be included with subsequent shipments to the same employer unless the information on the label changes;
(B) The label may be transmitted with the initial shipment itself, or with the safety data sheet that is to be provided prior to or at the time of the first shipment; and,
(C) This exception to requiring labels on every container of hazardous chemicals is only for the solid material itself, and does not apply to hazardous chemicals used in conjunction with, or known to be present with, the material and to which employees handling the items in transit may be exposed (for example, cutting fluids, pesticides in grains or lubricants).
(5) Manufacturers, importers, or distributors shall ensure that each container of hazardous chemicals leaving the workplace is labeled, tagged, or marked in accordance with this section in a manner which does not conflict with the requirements of the Hazardous Materials Transportation Act (18 U.S.C. 1801 et seq.) and regulations issued under that Act by the Department of Transportation.
(6) Workplace labeling. Except as provided in sections 5194(f)(7) and (f)(8) the employer shall ensure that each container of hazardous chemicals in the workplace is labeled, tagged, or marked with either:
(A) The information specified under section 5194 (f)(1)(A) through (E) for labels on shipped containers; or,
(B) Product identifier and words, pictures, symbols, or combination thereof, which provide at least general information regarding the hazards of the chemicals, and which, in conjunction with the other information immediately available to employees under the hazard communication program, will provide employees with the specific information regarding the physical and health hazards of the hazardous chemical.
(7) The employer may use signs, placards, process sheets, batch tickets, operating procedures, or other such written materials in lieu of affixing labels to individual stationary process containers, as long as the alternative method identifies the containers to which it is applicable and conveys the information required by section 5194(f)(6) to be on a label. The written materials shall be readily accessible to the employees in their work area throughout each work shift. In construction, the employer may use such written materials in lieu of affixing labels to individual containers as long as the alternative method identifies and accompanies the containers to which it is applicable and conveys the information required to be on a label.
(8) The employer is not required to label portable containers into which hazardous chemicals are transferred from labeled containers, and which are intended only for the immediate use of the employee who performs the transfer.

(9) The employer shall not remove or intentionally deface existing labels on incoming containers of hazardous chemicals, unless the container is immediately marked with the required information.
(10) The employer shall ensure that workplace labels or other forms of warning are legible, in English, and prominently displayed on the container, or readily available in the work area throughout each work shift. Employers having employees who speak other languages may add the information in their language to the material presented, as long as the information is presented in English as well.
(11) Manufacturers, importers, distributors, or employers who become newly aware of any significant information regarding the hazards of a chemical shall revise the labels for the chemical within six months of becoming aware of the new information. Labels on containers of hazardous chemicals shipped after that time shall contain the new information. If the chemical is not currently produced or imported, the manufacturer, importer, distributor, or employer shall add the information to the label before the chemical is shipped or introduced into the workplace again.
(g) Safety Data Sheets.
(1) Manufacturers and importers shall obtain or develop a safety data sheet for each hazardous chemical they produce or import. Employers shall have a safety data sheet for each hazardous chemical which they use.
Note to (g)(1): Employers should also refer to section 3204 concerning information to be retained after a particular chemical is no longer in use.
(2) The manufacturer or importer preparing the safety data sheet shall ensure that it is in English (although the employer may maintain copies in other languages as well) and includes at least the following section numbers and headings, and associated information under each heading, in the order listed (See Appendix D to section 5194--Safety Data Sheets, for the specific content of each section of the safety data sheet):
(A) Section 1, Identification;
(B) Section 2, Hazard(s) identification;
(C) Section 3, Composition/information on ingredients;
(D) Section 4, First-aid measures;
(E) Section 5, Fire-fighting measures;
(F) Section 6, Accidental release measures;
(G) Section 7, Handling and storage;
(H) Section 8, Exposure controls/personal protection;
(I) Section 9, Physical and chemical properties;
(J) Section 10, Stability and reactivity;
(K) Section 11, Toxicological information;
(L) Section 12, Ecological information;
(M) Section 13, Disposal considerations;
(N) Section 14, Transport information;
(O) Section 15, Regulatory information; and
(P) Section 16, Other information, including date of preparation or last revision.
(Q) A description in lay terms, if not otherwise provided, on either a separate sheet or with the body of the information specified in this section, of the specific potential health risks posed by the hazardous chemical intended to alert any person reading the information.
NOTE TO SECTION 5194 (g)(2): To be consistent with the GHS, an SDS must also include the headings in section 5194 (g)(2)(L) through (G)(2)(P) in order.
(3) If no relevant information is found for any sub-heading within a section on the safety data sheet, the manufacturer, importer, or employer preparing the safety data sheet shall mark it to

indicate that no information was found. If the category is not applicable to the hazardous chemical involved, the space shall be marked to indicate that.
(4) Where complex mixtures have similar hazards and contents (i.e. the chemical ingredients are essentially the same, but the specific composition varies from mixture to mixture), the manufacturer, importer or employer may prepare one safety data sheet to apply to all of these similar mixtures.
(5) The manufacturer, importer or employer preparing the safety data sheet shall ensure that the information provided accurately reflects the scientific evidence used in making the hazard classification. If the manufacturer, importer, or employer become aware of any significant information regarding the hazards of a chemical, or ways to protect against the hazards, this new information shall be added to the safety data sheet within three months. If the chemical is not currently being produced or imported, the manufacturer or importer shall add the information to the safety data sheet before the chemical is introduced into the workplace again.
(6) Manufacturers or importers shall ensure that distributors and purchasers of hazardous chemicals are provided an appropriate safety data sheet with their initial shipment, and with the first shipment after a safety data sheet is updated. The manufacturer or importer shall either provide safety data sheets with the shipped containers or send them to the purchaser prior to or at the time of the shipment. If the safety data sheet is not provided with the shipment, the purchaser shall obtain one from the manufacturer, importer, or distributor as soon as possible. The manufacturer or importer shall also provide distributors or employers with a safety data sheet upon request.
(7) Distributors shall ensure that safety data sheets, and updated information, are provided to other distributors and purchasers of hazardous chemicals.
(8) The employer shall maintain copies of the required safety data sheets for each hazardous chemical in the workplace, and shall ensure that they are readily accessible during each work shift to employees when they are in their work area(s). (Electronic access and other alternatives to maintaining paper copies of the safety data sheets are permitted as long as no barriers to immediate employee access in each workplace are created by such options.)
(9) Where employees must travel between workplaces during a workshift, i.e., their work is carried out at more than one geographical location, the safety data sheets may be kept at a central location at the primary workplace facility. In this situation, the employer shall ensure that employees can immediately obtain the required information in an emergency.
(10) Safety data sheets may be kept in any form, including operating procedures, and may be designed to cover groups of hazardous chemicals in a work area where it may be more appropriate to address the hazards of a process rather than individual hazardous chemicals. However, the employer shall ensure that in all cases the required information is provided for each hazardous chemical and is readily accessible during each work shift to employees when they are in their work area(s).
(11) Safety data sheets shall also be made readily available, upon request, to designated representatives, and to the Chief, in accordance with the requirements of section 3204(e). NIOSH and the employee's physician shall also be given access to safety data sheets in the same manner.
(12) If the safety data sheet, or any item of information required by section 5194(g)(2), is not provided by the manufacturer or importer, the employer shall:
(A) Within 7 working days of noting this missing information, either from a request or in attempting to comply with section 5194(g)(1), make written inquiry to the manufacturer or importer of a hazardous chemical responsible for the safety data sheet, asking that the complete safety data sheet be sent to the employer. If the employer has made written inquiry in the preceding 12 months as to whether the chemical or product is subject to the requirements of the Act or the employer has made written inquiry within the last 6 months requesting new, revised or later

information on the safety data sheet for the hazardous chemical, the employer need not make additional written inquiry.
(B) Notify the requester in writing of the date that the inquiry was made, to whom it was made, and the response, if any, received. Providing the requestor with a copy of the inquiry sent to the manufacturer, producer or seller and a copy of the response will satisfy this requirement.
(C) Notify the requestor of the availability of the safety data sheet within 15 days of the receipt of the safety data sheet from the manufacturer, producer or seller or provide a copy of the safety data sheet to the requestor within 15 days of the receipt of the safety data sheet from the manufacturer, producer or seller.
(D) Send the Director a copy of the written inquiry if a response has not been received within 25 working days.
(13) The preparer of a safety data sheet shall provide the Director with a copy of the safety data sheet. Where a trade secret claim is made, the preparer shall submit the information specified in section 5194(i)(15).
(h) Employee Information and Training.
(1) Employers shall provide employees with effective information and training on hazardous chemicals in their work area at the time of their initial assignment, and whenever a new chemical hazard is introduced into their work area. Information and training may relate to general classes of hazardous chemicals to the extent appropriate and related to reasonably foreseeable exposures of the job. Chemical-specific information must always be available through labels and safety data sheets.
(2) Information and training shall consist of at least the following topics:
(A) Employees shall be informed of the requirements of this section.
(B) Employees shall be informed of any operations in their work area where hazardous chemicals are present.
(C) Employees shall be informed of the location and availability of the written hazard communication program, including the list(s) of hazardous chemicals and safety data sheets required by this section.
(D) Employees shall be trained in the methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area (such as monitoring conducted by the employer, continuous monitoring devices, visual appearance or odor of hazardous chemicals when being released, etc.).
(E) Employees shall be trained in the physical, health, simple asphyxiation, combustible dust and pyrophoric gas hazards, as well as hazards not otherwise classified, of the chemicals in the work area, and the measures they can take to protect themselves from these hazards, including specific procedures the employer has implemented to protect employees from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures, and personal protective equipment to be used.
(F) Employees shall be trained in the details of the hazard communication program developed by the employer, including an explanation of the labels received on shipped containers and the workplace labeling system used by their employer and the safety data sheet, and how employees can obtain and use the appropriate hazard information.
(G) Employers shall inform employees of the right:
1. To personally receive information regarding hazardous chemicals to which they may be exposed, according to the provisions of this section;
2. For their physician or collective bargaining agent to receive information regarding hazardous chemicals to which the employee may be exposed according to provisions of this section;
3. Against discharge or other discrimination due to the employee's exercise of the rights afforded pursuant to the provisions of the Hazardous Substances Information and Training Act.

(3) Whenever the employer receives a new or revised safety data sheet, such information shall be provided to employees on a timely basis not to exceed 30 days after receipt, if the new information indicates significantly increased risks to, or measures necessary to protect, employee health as compared to those stated on a safety data sheet previously provided.
(i) Trade Secrets.
(1) The manufacturer, importer or employer may withhold the specific chemical identity of a hazardous chemical, or the exact percentage (concentration) of the substance in a mixture, from the safety data sheet, provided that:
(A) The claim that the information withheld is a trade secret can be supported;
(B) Information contained in the safety data sheet concerning the properties and effects of the hazardous chemical is disclosed;
(C) The safety data sheet indicates that the specific chemical identity and/or percentage of composition is being withheld as a trade secret; and,
(D) The specific chemical identity and percentage is made available to health or safety professionals, employees, and designated representatives in accordance with the applicable provisions of this subsection.
(2) Where a treating physician or nurse determines that a medical emergency exists and the specific chemical identity and/or specific percentage of composition of a hazardous chemical is necessary for emergency or first-aid treatment, the manufacturer, importer, or employer shall immediately disclose the specific chemical identity or percentage composition of a trade secret chemical to that treating physician or nurse, regardless of the existence of a written statement of need or a confidentiality agreement. The manufacturer, importer, or employer may require a written statement of need and confidentiality agreement, in accordance with the provisions of sections 5194(i)(3) and (4), as soon as circumstances permit.
(3) In non-emergency situations, a manufacturer, importer, or employer shall, upon request, disclose a specific chemical identity or percentage composition, otherwise permitted to be withheld under section 5194(i)(1), to a health or safety professional (i.e., physician, nurse, industrial hygienist, safety professional, toxicologist, or epidemiologist) providing medical or other occupational health services to exposed employee(s), and to employees and designated representatives, if:
(A) The request is in writing;
(B) The request describes with reasonable detail one or more of the following occupational health needs for the information:
1. To assess the hazards of the chemicals to which employees will be exposed;
2. To conduct or assess sampling of the workplace atmosphere to determine employee exposure levels;
3. To conduct pre-assignment or periodic medical surveillance of exposed employees;
4. To provide medical treatment to exposed employees;
5. To select or assess appropriate personal protective equipment for exposed employees;
6. To design or assess engineering controls or other protective measures for exposed employees; and,
7. To conduct studies to determine the health effects of exposure.
(C) The request explains in detail why the disclosure of the specific chemical identity or percentage composition is essential and that, in lieu thereof, the disclosure of the following information would not enable the health or safety professional, employee or designated representative to provide the occupational health services described in section 5194(i)(3)(B):
1. The properties and effects of the chemical;
2. Measures for controlling workers' exposure to the chemical;
3. Methods of monitoring and analyzing worker exposure to the chemical; and,

4. Methods of diagnosing and treating harmful exposures to the chemical;
(D) The request includes a description of the procedures to be used to maintain the confidentiality of the disclosed information; and,
(E) The health or safety professional,employee, or designated representative and the employer or contractor of the health or safety professional's services (i.e., downstream employer, labor organization, or individual employee), agree in a written confidentiality agreement that the health or safety professional, employee, or designated representative will not use the trade secret information for any purpose other than the health need(s) asserted and agree not to release the information under any circumstances other than to the Director, as provided in section 5194(i)(6), except as authorized by the terms of the agreement or by the manufacturer, importer, or employer.
(4) The confidentiality agreement authorized by section 5194(i)(3)(D) shall not include requirements for the posting of a penalty bond.
(5) Nothing in this standard is meant to preclude the parties from pursuing non-contractual remedies to the extent permitted by law.
(6) If the health or safety professional, employee, or designated representative receiving the trade secret information decides that there is a need to disclose it to the Director, then the manufacturer, importer, or employer who provided the information shall be informed by the health or safety professional, employee, or designated representative prior to, or at the same time as, such disclosure.
(7) If the manufacturer, importer, or employer denies a written request for disclosure of a specific chemical identity or percentage composition, the denial must:
(A) Be provided to the health or safety professional, employee, or designated representative within thirty days of the request;
(B) Be in writing;
(C) Include evidence to support the claim that the specific chemical identity or percent of composition is a trade secret;
(D) State the specific reasons why the request is being denied; and,
(E) Explain in detail how alternative information may satisfy the specific medical or occupational health need without revealing the trade secret.
(8) The health or safety professional, employee, or designated representative whose request for information is denied under section 5194(i)(3) may refer the request and the written denial of the request to the Director for consideration.
(9) When a health or safety professional, employee, or designated representative refers the denial to the Director under section 5194(i)(8), or upon the Director's own initiative when receiving information pursuant to section 5194(g)(13) which is claimed to be a trade secret, the Director shall consider the evidence to determine if:
(A) The manufacturer, importer, or employer has supported the claim that the specific chemical identity or percentage composition is a trade secret;
(B) The health or safety professional,employee, or designated representatives has supported the claim that there is a medical or occupational health need for the information; and,
(C) The health or safety professional,employee, or designated representative has demonstrated adequate means to protect the confidentiality.
(10) If the Director determines that the specific chemical identity or percentage composition requested under section 5194(i)(3) is not a *bona fide* trade secret, or that it is a trade secret but the requesting health or safety professional, employee, or designated representative has a legitimate medical or occupational health need for the information, has executed a written confidentiality agreement, and has shown adequate means to protect the confidentiality of the information, the

manufacturer, importer, or employer will be subject to citation by the Director. The Director shall so notify the manufacturer, importer, or employer by certified mail.
(11) The manufacturer, importer, or employer shall have 15 days after receipt of notification under section 5194(i)(10) to provide the Director with a complete justification and statement of the grounds on which the trade secret privilege is claimed. This justification and statement shall be submitted by certified mail.
(12) The Director shall determine whether such information is protected as a trade secret within 15 days after receipt of the justification and statement required by section 5194(i)(11), or if no justification and statement is filed, within 30 days of the original notice, and shall notify the employer or manufacturer and any party who has requested the information pursuant to the California Public Records Act of that determination by certified mail. If the Director determines that the information is not protected as a trade secret, the final notice shall also specify a date, not sooner than 15 days after the date of mailing of the final notice, when the information shall be available to the public.
(13) Prior to the date specified in the final notice provided pursuant to section 5194(i)(12), a manufacturer, importer, or employer may institute an action in an appropriate superior court for a declaratory judgment as to whether such information is subject to protection from disclosure.
(14) If a manufacturer, importer, or employer demonstrates to the Director that the execution of a confidentiality agreement as provided for by section 5194(i)(10) would not provide sufficient protection against the potential harm from the unauthorized disclosure of a trade secret specific chemical identity, the Director may issue such orders to impose such additional limitations or conditions upon the disclosure of the requested information as may be appropriate to assure that the occupational health services are provided without an undue risk of harm to the manufacturer, importer, or employer.
(15) Notwithstanding the existence of a trade secret claim, a manufacturer, importer, or employer shall disclose to the Director the specific chemical identity or percentage composition of any hazardous chemical in a product for which trade secrecy is claimed. Where there is a trade secret claim, such claim shall be made no later than at the time the information is provided to the Director so that suitable determinations of trade secret status can be made and the necessary protections can be implemented.
(16) Nothing in section 5194(i) shall be construed as requiring the disclosure under any circumstances of process or percentage of mixture information which is a trade secret.
(j) Effective dates.
(1) Employers shall train employees regarding the new label elements and safety data sheets format by December 1, 2013.
(2) Manufacturers, importers, distributors, and employers shall be in compliance with all modified provisions of this section no later than June 1, 2015, except:
(A) After December 1, 2015, the distributor shall not ship containers labeled by the manufacturer or importer unless the label has been modified to comply with section 5194(f)(1).
(B) All employers shall, as necessary, update any alternative workplace labeling used under section 5194 (f)(6), update the hazard communication program required by section 5194(h)(1), and provide any additional employee training in accordance with section 5194(h)(3) for newly identified physical or health hazards no later than June 1, 2016.
(3) Manufacturers, importers, distributors, and employers may comply with either section 5194 revised as of July 6, 2004, or the current version of this standard, or both during the transition period.
(k) Appendices.
(1) Appendices A to E of this section are incorporated as part of this section and the provisions are mandatory.

(2) Appendix F contains information which is not intended to create any additional obligations not otherwise imposed or to detract from any existing obligation.
(3) Appendix G contains the following 22 CCR Sections: 12201(a), 12201(b), 12201(c), 12201(d), 12201(f), 12201(k), 12502, 12601, 12701(a), 12701(b), 12701(d), 12703, 12705, 12707, 12709, 12711, 12721, 12801, 12803, 12805, 12821, and 12901 in effect on May 9, 1991 that are referred to in subsection (b)(6).
Note: Authority cited: Sections 50.7, 142.3 and 6398, Labor Code. Reference: Sections 50.7, 142.3 and 6361-6399.7, Labor Code; Sections 25249.6, 25249.7, 25249.8, 25249.10, 25249.11, 25249.12 and 25249.13, Health and Safety Code; *California Lab. Federation v. Occupational Safety and Health Stds. Bd.* (1990) 221 Cal.App.3d 1547 [271 Cal. Rptr. 310]; and *United Steelworkers of America v. Auchter* (3d Cir. 1985) 763 F.2d 728.

HISTORY
1. New section filed 12-9-81; designated effective 180 days following adoption of a list of hazardous substances pursuant to the Act by the Director, Department of Industrial Relations (Register 81, No. 50).
2. Repealer and new section (including appendices A-C) filed 11-22-85; designated effective 11-25-85 pursuant to Government Code section 11346.2(d) (Register 85, No. 47).
3. Order of Repeal of subsection (a) pursuant to Government Code section 11342(b), amendment, and new appendix D filed 5-26-87; operative 6-25-87 (Register 87, No. 23).
4. Change without regulatory effect removing chapter heading filed 3-6-91; operative 4-4-91 (Register 91, No. 15).
5. Change without regulatory effect repealing Article 110 heading “Special Hazardous Substances and Processes” filed 3-6-91 pursuant to section 100, title 1, California Code of Regulations (Register 91, No. 15).
6. New subsections (b)(6)(A)-(E) and (k)(3) filed 5-31-91 as an emergency; operative 5-31-91 (Register 91, No. 33). A Certificate of Compliance must be transmitted to OAL by 9-30-91 or emergency language will be repealed by operation of law on the following day.
7. Amendment of section filed 9-30-91 as an emergency; operative 9-30-91 (Register 92, No. 2). A Certificate of Compliance must be transmitted to OAL 1-28-92 or emergency language will be repealed by operation of law on the following day.
8. Repealed by operation of Government Code section 11346.1(g) (Register 92, No. 12).
9. New subsections (b)(6)(A)-(F) and (k)(3) refiled 12-17-91; operative 12-17-91. Certificate of Compliance included (Register 92, No. 12).
10. Change without regulatory effect amending definitions of Chief, Department, and Director in subsection (c) filed 3-4-92 pursuant to section 100, title 1, California Code of Regulations (Register 92, No. 19).
11. New subsections (b)(5)(I)-(b)(5)(I)3. and (e)(2)(A)-(C), new subsection (g)(2)(a)3.b. and subsection relettering, new subsection (g)(9) and subsection renumbering, and amendment of subsections (b)(4)(B), (b)(5)(H), (d)(3)(A), (d)(3)(C), (d)(4)-(d)(4)(B), (d)(5)(D), (e)(1), (e)(2),

(f), (f)(1), (g)(1), (g)(2)(G), (g)(8), (h)(2)(C), (i)(9), (i)(16) and newly designated subsections (g)(10) and (g)(12)(D) filed 4-26-93; operative 5-26-93 (Register 93, No. 18).
12. Editorial correction of History 9 (Register 94, No. 13).
13. Change without regulatory effect amending subsection (g)(12)(A) filed 12-14-94 pursuant to section 100, title 1, California Code of Regulations (Register 94, No. 50).
14. Repealer of note to subsection (f) filed 9-4-97; operative 10-4-97 (Register 97, No. 36).
15. Change without regulatory effect changing subsection (k) designator to subsection (j) designator filed 3-15-99 pursuant to section 100, title 1, California Code of Regulations (Register 99, No. 12).
16. Amendment of subsections (b)(5)(C), (d)(3)(C) and (d)(4)(A)-(B), new subsection (f)(10) and amendment of subsections (g)(2), (g)(2)(G), (g)(6), (g)(8) and (h)(1) filed 7-6-2004; operative 7-6-2004. Submitted to OAL for printing only pursuant to Labor Code section 142.3(a)(3) (Register 2004, No. 28).
17. Amendment filed 5-6-2013; operative 5-6-2013 pursuant to Labor Code section 142.3(a)(4)(C). Submitted to OAL for printing only pursuant to Labor Code section 142.3(a)(4) (Register 2013, No. 19).
18. Change without regulatory effect amending subsection (g)(2)(Q) filed 9-17-2013 pursuant to section 100, title 1, California Code of Regulations (Register 2013, No. 38).
19. Amendment refiled 11-6-2013; operative 11-6-2013 pursuant to Labor Code section 142.3(a)(4)(C). Submitted to OAL for printing only pursuant to Labor Code section 142.3(a)(4) (Register 2013, No. 45).
20. Repealer of 11-6-2013 order by operation of law 5-6-2014 pursuant to Labor Code 142.3 (Register 2014, No. 19).
21. Amendment of definition of “Combustible Liquid,” and repealer of definitions of “Flammable” and “Flashpoint” within subsection (c) filed 5-5-2014; operative 5-6-2014 pursuant to Government Code section 11343.4(b)(3) (Register 2014, No. 19).
22. Amendment filed 5-5-2014; operative 5-6-2014 pursuant to Government Code section 11343.4(b)(3) (Register 2014, No. 19).

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APPENDIX C

CAL/OSHA STANDARD: VENTILATION REQUIREMENTS FOR LABORATORY-TYPE HOOD OPERATIONS

Subchapter 7. General Industry Safety Orders
Group 16. Control of Hazardous Substances
Article 107. Dusts, Fumes, Mists, Vapors and Gases

New query

§5154.1. Ventilation Requirements for Laboratory-Type Hood Operations.

(a) Scope. When laboratory-type hoods, also known as laboratory fume hoods, as defined below are used to prevent harmful exposure to hazardous substances, such hoods shall conform to all applicable provisions of Article 107, and shall conform to provisions of this section.

Exception No. 1: Inspection doors or clean-out doors in exhaust ducts required by Section 5143(a)(3) do not apply to laboratory-type hood operations.

Exception No. 2: Biological safety cabinets as defined below are exempt from the requirements of this section. Class II biological safety cabinets may be used to prevent harmful exposure to cytotoxic agents during their compounding or preparation for parenteral use. Biological safety cabinets may be used to control harmful exposure to aerosols and particulate matter, provided the presence of the substance in the biological safety cabinet does not present a risk of fire or explosion. When biological safety cabinets are used to control exposure to these hazards they shall meet the requirements of Section 5154.2.

(b) Definitions.

Biohazard agent means a replication capable pathogen which is a disease causing microorganism and is capable of causing diseases in humans including viruses, microbes and sub viral agents. The agent includes the agent, products of infectious agents, or the components of infectious agents presenting a risk of illness or injury.

Biohazardous materials are any materials that would harbor biohazardous agents such as human blood, body fluids, or tissues that may be contaminated with biohazardous agents.

Biological safety cabinet. A ventilated cabinet which serves as a primary containment device for operations involving biohazard agents or biohazardous materials. Three classes of biological safety cabinets are described in Section 5154.2.

Hazardous Substance. One which by reason of being explosive, flammable, poisonous, an irritant, or otherwise harmful is likely to cause injury or illness if not used with effective control methods.

Laboratory-Type Hood. A device enclosed except for necessary exhaust purposes on three sides and top and bottom, designed to draw air inward by means of mechanical ventilation, operated with insertion of only the hands and arms of the user, and used to control exposure to hazardous substances. These devices are also known as laboratory fume hoods.

(c) Ventilation Rates.

(1) Laboratory-type hood face velocities shall be sufficient to maintain an inward flow of air at all openings into the hood under operating conditions. The hood shall provide confinement of the possible hazards and protection of the employees for the work that is performed. The exhaust system shall provide an average face velocity of at least 100 feet per minute with a minimum of 70 fpm at any point, except where more stringent special requirements are prescribed in other sections of the General Industry Safety Orders, such as Section 5209. The minimum velocity requirement excludes those measurements made within 1 inch of the perimeter of the work

opening.

(2) When a laboratory-type hood is in use to contain airborne hazardous substances and no employee is in the immediate area of the hood opening, the ventilation rate may be reduced from the minimum average face velocity of at least 100 feet per minute to a minimum average face velocity of 60 feet per minute if the following conditions are met:

(A) The reduction in face velocity is controlled by an automatic system which does not require manual intervention. The automatic system shall increase the airflow to the flow required by (c)(1) when the hood is accessed.

(B) The laboratory-type hood has been tested at the reduced flow rate according to the tracer gas method specified in Section 7, Tracer Gas Test Procedure, of ANSI/ASHRAE 110-1995, Method of Testing Performance of Laboratory Fume Hoods, which is hereby incorporated by reference, and has a hood performance rating of 4.0 AU 0.1 or less. The test may be performed with or without the mannequin described in the ANSI/ASHRAE 110-1995 tracer gas method.

The tracer gas test need only be performed once per hood. However, if employers have chosen to perform the tracer gas test on subsequent occasions, it is the most recent record of test results and test configuration that shall be maintained pursuant to subsection (c)(2)(C).

(C) The record of the most recent tracer gas test results and the "as used" test configuration shall be maintained as long as the automatic system is operable and thereafter for five years.

(d) Operation. Mechanical ventilation shall remain in operation at all times when hoods are in use and for a sufficient time thereafter to clear hoods of airborne hazardous substances. When mechanical ventilation is not in operation, hazardous substances in the hood shall be covered or capped off.

(e) Special Requirements.

(1) The face velocity required by subsection (c) should be obtainable with the movable sashes fully opened. Where the required velocity can only be obtained by partly closing the sash, the sash and/or jamb shall be marked to show the maximum opening at which the hood face velocity will meet the requirements of subsection (c). Any hood failing to meet requirements of subsection (c) and this paragraph shall be considered deficient in airflow and shall be posted with placards, plainly visible, which prohibit use of hazardous substances within the hood.

(2) When flammable gases or liquids are used, or when combustible liquids are heated above their flashpoints, hoods shall be designed, constructed, and installed so that hood openings at all sash positions provide sufficient airflow to prevent ignitable concentrations. Concentrations in the duct shall not exceed 20% of the lower explosive limits.

(3) In addition to being tested as required by Section 5143(a)(5), hoods shall meet the following requirements:

(A) By January 1, 2008, hoods shall be equipped with a quantitative airflow monitor that continuously indicates whether air is flowing into the exhaust system during operation. The quantitative airflow monitor shall measure either the exact rate of inward airflow or the relative amount of inward airflow. Examples of acceptable devices that measure the relative amount of inward airflow include: diaphragm pressure gauges, inclined manometers, and vane gauges. The requirement for a quantitative airflow monitor may also be met by an airflow alarm system if the system provides an audible or visual alarm when the airflow decreases to less than 80% of the airflow required by subsection (c).

(B) Qualitative airflow measurements that indicate the ability of the hood to maintain an inward airflow at all openings of the hood as required by subsection (c)(1) shall be demonstrated using

smoke tubes or other suitable qualitative methods. This demonstration shall be performed:

1. Upon initial installation;

2. On an annual basis;

Exception to Subsection (3)(B)2.: The frequency of the tests may be reduced to every two years if a calibration and maintenance program is in place for the quantitative airflow monitor or alarm system.

3. After repairs or renovations of the hood or the ventilation system in that part of the facility where the hood is located; or

4. After the addition of large equipment into the hood.

(4) Exhaust stacks shall be located in such a manner with respect to air intakes as to preclude the recirculation of laboratory-type hood emissions within a building. To protect employees on the roof, any one of the follow methods shall be utilized:

(A) Chemical treatment, absorption on activated charcoal, or scrubbers;

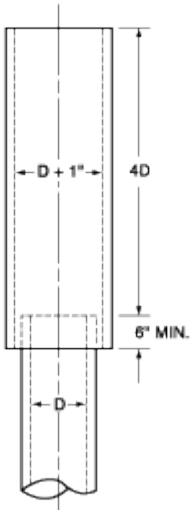
(B) Dilution of toxic materials below prescribed exposure limits prior to discharge;

(C) Locked gates, doors or other equivalent means acceptable to the Division which prevent employee access to exhaust stack discharge areas while hoods are in operation unless personnel are provided with appropriate respirators and other personal protection; or

(D) Exhaust stacks extending at least 7 feet above the roof and discharging vertically upward. Where rain protection is desired, high velocity discharge or concentric-duct, self-draining stacks (Figure V-9) or equivalent may be used. Rain caps which divert the exhaust toward the roof are prohibited.

FIGURE V-9

EXAMPLE OF A CONCENTRIC-DUCT SELF-DRAINING STACK



(5) Where emissions from the exhaust stack are likely to cause harmful exposure to employees, an effective air cleaning system shall be provided. Where virulent pathogens are likely to be released in the hood, incinerators or equally effective means of disposal shall be provided in the exhaust

system to prevent employee exposure. See Section 5154.2 for requirements for biological safety cabinets.

(6) Blowers exhausting laboratory-type hoods in which hazardous substances are used shall be mounted outside the building or in service rooms outside the working area. For hoods with single, independent exhaust systems, blowers may be mounted inside the building provided that corrosion-resistant, sealed-joint duct-work is used.

(7) When perchloric acid is evaporated in laboratory-type hoods, the provisions of Section 5143(a)(4) shall apply. The materials of construction shall be inert, smooth, and nonabsorbent. Organic polymers shall not be used except for inert fluoropolymers, such as polytetrafluoroethylene [PTFE] and tetrafluoroethylene-hexafluoropropylene copolymer [Teflon FEP], or similar nonreactive material. The hood and exhaust system shall be washed down with water for decontamination and prior to opening for maintenance.

Exception: Portable laboratory scrubbing apparatus for perchloric acid digestions may be used in lieu of the special requirements of this paragraph.

(f) Operator Qualifications. The employer shall ensure that employees who use laboratory-type hoods are trained to:

(1) Use the hood and its features safely;

(2) Determine the date of the last performance test conducted pursuant to subsection (c)(2)(B) and if the hood performance met the requirements of this section;

(3) Understand the general hood purpose, airflow characteristics, and potential for turbulent airflow and escape of hazardous substances from the hood; and,

(4) Know where the quantitative airflow monitor or alarm system is located on the hood and how it is used to indicate an inward airflow during hood operation.

Note: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

HISTORY

1. New section filed 8-12-76; effective thirtieth day thereafter (Register 76, No. 33).

2. Editorial correction of subsection (e)(4) (Register 76, No. 48).

3. Amendment of subsections (b) and (e)(4) filed 4-16-80; effective thirtieth day thereafter (Register 80, No. 16).

4. Amendment filed 10-11-94; operative 11-10-94 (Register 94, No. 41).

5. Amendment filed 7-31-2006; operative 8-30-2006 (Register 2006, No. 31).

6. Change without regulatory effect providing more legible illustration for Figure V-9 filed 3-2-2009 pursuant to section 100, title 1, California Codeof Regulations (Register 2009, No. 10).

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APPENDIX D

LABORATORY INSPECTION FORM

LABORATORY INSPECTION CHECK LIST

Department _____ Date _____

Building _____ Room No. _____ Lab Director(s) _____

Inspection Team _____

Rate each item according to the following scheme:
S- Satisfactory (readily accessible, clearly visible, good condition, not applicable to this lab)
U- Unsatisfactory (not readily accessible, needs attention, poor condition)
R- Poses imminent health / safety risk

A. Housekeeping	**S U R**
1. Walking aisles are clear, egress paths free of obstructions	☐ ☐ ☐
2. Laboratory authority list and emergency phone numbers posted	☐ ☐ ☐
3. Locations signs for safety/emergency equipment	☐ ☐ ☐
4. Food not stored in laboratory refrigerators, food warnings on door	☐ ☐ ☐
5. Broken glass disposal containers provided	☐ ☐ ☐
6. All items stored appropriately	☐ ☐ ☐
7. Lab is reasonably hygienic and facilities are maintained in good condition	☐ ☐ ☐
Comments: _____	
_____	
_____	

B. Chemical Storage	**S U R**
1. Food and chemicals kept separate	☐ ☐ ☐
2. Chemicals stored in the open are kept to a minimum	☐ ☐ ☐
3. Glass containers are limited to one gallon size or smaller	☐ ☐ ☐
4. Flammable liquids in excess of 10 gal are stored in flammable liquid cabinet and maintained in minimal levels in laboratory.	☐ ☐ ☐
5. Acids and bases separated from flammable chemicals and each other	☐ ☐ ☐
6. Highly toxic chemicals and carcinogens secured	☐ ☐ ☐
7. Refrigerators used for storage of flammables are properly rated	☐ ☐ ☐
8. Flammables not stored along egress path	☐ ☐ ☐
9. Highly reactive chemicals disposed of prior to expiration date when no longer needed	☐ ☐ ☐
10. Chemicals stored in the proper environments/compatible containers	
11. Condition of containers is good -- no rust, crud, or ooze	☐ ☐ ☐
12. Labels clearly indicate contents and associated hazard	☐ ☐ ☐
Comments: _____	☐ ☐ ☐
_____	
_____	

C. Chemical handling

	S	U	R
1. Stored chemicals organized according to compatibility	☐	☐	☐
2. Ethers identified by date of receipt and latest date for disposal	☐	☐	☐
3. All chemical containers clearly labeled with contents	☐	☐	☐
4. Only chemicals for current experiments accessible to students	☐	☐	☐
5. Chemicals stored at safe levels, in cabinets or on stable shelving	☐	☐	☐
6. Containers present for used chemicals, and wastes	☐	☐	☐
7. Chemical wastes labeled properly and segregated prior to disposal	☐	☐	☐
8. Gas cylinders strapped firmly in place, stored cylinders capped	☐	☐	☐
9. Work generating toxic and hazardous fumes performed in hoods	☐	☐	☐
10. Vessels used under vacuum are taped or of appropriate construction	☐	☐	☐

Comments: _____
_____
_____

C**. Personal Protective Equipment**

	S	U	R
11. Appropriate clothing is worn to labs including close-toed shoes, shirts with sleeves and no shorts.	☐	☐	☐
12. Safety glasses are worn	☐	☐	☐
13. Gloves appropriate to the chemical used are worn when appropriate	☐	☐	☐
14. Additional protective equipment is available	☐	☐	☐
15. If noise interferes with normal speech, ear protectors used	☐	☐	☐

Comments: _____
_____
_____

D. Ventilation

	S	U	R
1. Laboratory hoods or other local ventilation present	☐	☐	☐
2. Sash is in working order	☐	☐	☐
3. Fume-generating apparatus at least 20 mc behind face of hoods	☐	☐	☐
4. Gas and electrical shut-offs are outside the hood	☐	☐	☐
5. Hood interior is clean, uncluttered, and free of storage	☐	☐	☐
6. Laboratory at negative pressure with respect to corridors	☐	☐	☐
7. Hoods located in low-traffic, draft-free areas	☐	☐	☐
8. Hood face velocity low reading (minimum 70 fpm) _____ sash height _____	☐	☐	☐
9. Hood face velocity avg reading (minimum 100 fpm) _____sash height _____	☐	☐	☐
10. Hood face velocity avg reading (minimum 60 fpm)(no employee)____sash_____	☐	☐	☐
11. Low-velocity warning alarms on hoods	☐	☐	☐
12. Fume hoods used for designated purposes	☐	☐	☐
13. Hoods suitable for frequency and type of use required	☐	☐	☐

Comments: _____
_____
_____

E. **Waste Management**	S U R
1. All waste is contained within tightly closed containers	☐ ☐ ☐
2. Approved chemical waste labels are present and marked correctly	☐ ☐ ☐
3. Waste containers monitored for compatibility of chemicals	☐ ☐ ☐
4. Hallways, maintenance corridors, etc., are free of waste	☐ ☐ ☐
5. Amount of flammable liquid waste less than five gallons	☐ ☐ ☐
6. Corrosive liquids stored in non-metal containers	☐ ☐ ☐
7. Lab occupants are knowledgeable of waste disposal procedures as described in the Chemical Hygiene Plan	☐ ☐ ☐
Comments: _____	
_____	
_____	

F. **Emergency**	S U R
1. "In Case of Emergency" notices current and posted outside door	☐ ☐ ☐
2. All exits are clearly marked and unobstructed	☐ ☐ ☐
3. First Aid Kits, if present, are stocked	☐ ☐ ☐
4. Safety shower and eyewash fountain locations clearly marked and unobstructed	☐ ☐ ☐
5. Fire extinguisher(s) accessible, fully charged	☐ ☐ ☐
6. Fire blanket(s) accessible	☐ ☐ ☐
7. Protective equipment (goggles, face masks, gloves, aprons, etc.) readily available	☐ ☐ ☐
8. Evacuation route marked	☐ ☐ ☐
9. Master utility cutoffs (check if present) ¨ Gas ¨ Water	☐ ☐ ☐
10. Smoke Detector present(storage areas)	☐ ☐ ☐
Comments: _____	
_____	
_____	

G. Compressed Gas	S U R
1. Manual shut-off valves provided at all points of supply and use	☐ ☐ ☐
2. Permanent piping systems properly identified	☐ ☐ ☐
3. Gases with health hazard of 2 or greater kept in vented enclosures	☐ ☐ ☐
4. Oxygen and flammable gases stored separately	☐ ☐ ☐
5. All cylinders are secured	☐ ☐ ☐
6. "In Use" labels present	☐ ☐ ☐
7. Gas cylinders, not in use, are capped	☐ ☐ ☐
Comments: _____	
_____	
_____	

H. Mechanical	S U R
1. Machine guarding, emergency stop, and lock-out controls in place	☐ ☐ ☐
2. Cutting instruments (razor blades, knives, etc.) sheathed	☐ ☐ ☐
3. Syringes properly secured and disposed	☐ ☐ ☐
Comments: _____	
_____	
_____	

I. **Electrical**	S U R
1. Electrical equipment double insulated or grounded	☐ ☐ ☐
2. Cords and plugs in good condition (not pinched/broken/covered)	☐ ☐ ☐
3. All electrical outlets grounded	☐ ☐ ☐
4. No circuits overloaded	☐ ☐ ☐
5. Circuit breakers properly labeled	☐ ☐ ☐
6. Wiring appropriate for usage	☐ ☐ ☐
7. Electrical cords and equipment positioned away from water & heat	☐ ☐ ☐
8. Motors in labs with flammable vapors are non-sparking	☐ ☐ ☐
9. Lighting adequate; Lights in hoods protected from vapor.	☐ ☐ ☐
Comments: _____	
_____	
_____	

J. **Radiation Safety**	S U R
1. All users approved by Radiation Safety Officer	☐ ☐ ☐
2. "Radioactive Material" signs appropriately posted	☐ ☐ ☐
3. Pipetting performed correctly	☐ ☐ ☐
4. Protective clothing used (lab coats, gloves, etc.)	☐ ☐ ☐
5. Appropriate radioactive waste receptacles used (Liquid/Solid)	☐ ☐ ☐
6. Personnel wearing "Film Badge"	☐ ☐ ☐
7. Radionuclide inventory current and available to workers for update	☐ ☐ ☐
Comments: _____	
_____	
_____	

K**. Exit Interview**	S U R
1. All staff and students are aware of procedures in case of:	
a. fire	☐ ☐ ☐
b. chemical spill	☐ ☐ ☐
c. injury	☐ ☐ ☐
d. power outage	☐ ☐ ☐
e. other emergencies	☐ ☐ ☐
2. All staff are familiar with the contents of the Chemical Hygiene Plan	☐ ☐ ☐
3. All staff and students are aware of locations of MSDS	☐ ☐ ☐
4. Are special safety procedures/equipment/devices needed in this lab	☐ ☐ ☐
5. Are explosive materials used in laboratory	☐ ☐ ☐
6. Are there any utilities in this laboratory that are not working	☐ ☐ ☐
7. Is there any way the safety personnel can better serve your needs	☐ ☐ ☐
** If any answer to items 4-7 above is yes, please explain in comment section **	
Comments: _____	
_____	
_____	

APPENDIX E

EMPLOYEE TRAINING PROGRAM OUTLINES

GENERAL EMPLOYEE TRAINING PROGRAM OUTLINE

Palomar Community College is committed to providing workers with information and training that ensures their awareness of the chemical hazards used in their work area. This information will be provided when an employee is initially assigned to a work area where hazardous chemicals are present and before assignments involving new exposure situations. More detailed information will be given in formal training sessions as needed.

1. **CONTENTS OF THE OCCUPATIONAL EXPOSURE STANDARD AND ITS APPENDICES**
2. **LOCATION, AVAILABILITY AND DETAILS OF THE CHEMICAL HYGIENE PLAN**
3. **PELS FOR THE HAZARDOUS SUBSTANCES TO WHICH EMPLOYEES ARE EXPOSED**
4. **SIGNS AND SYMPTOMS ASSOCIATED WITH EXPOSURES TO HAZARDOUS CHEMICALS USED IN THE LABORATORY**
5. **LOCATION AND AVAILABILITY OF KNOWN REFERENCE MATERIAL ON THE CHEMICAL HAZARDS, AND THEIR SAFE HANDLING, STORAGE, AND DISPOSAL**
6. **METHODS AND OBSERVATIONS THAT MAY BE USED TO DETECT THE PRESENCE OR RELEASE OF A HAZARDOUS CHEMICAL**
7. **MEASURES EMPLOYEES CAN TAKE TO PROTECT THEMSELVES FROM HAZARDS**
8. **PHYSICAL AND HEALTH HAZARDS IN THE WORK AREA**
9. **SAFETY DATA SHEETS**
10. **SPILLS AND EMERGENCIES IN THE LABORATORY**

SPECIFIC STUDENT AND EMPLOYEE TRAINING PROGRAM OUTLINES
PHOTOGRAPHY OPERATIONS

DARKROOM SAFE PRACTICES

While the majority of the black and white chemicals are in the range of non-toxic to slightly toxic to most people, black and white developers and color chemicals are in the range of slightly toxic to toxic, especially if these developers or color chemicals are ingested, inhaled or come in contact with bare skin.

To protect yourself from possible bronchitis, sinusitis, increased allergic sensitivity, skin rashes and a host of other more serious damage (that primarily comes from long term and consistent unsafe exposure), please read the following rules for handling photo chemicals in the labs. It is vital to your health that you follow these rules!

It is also vital to your health that if you have bronchitis, sinusitis, allergic-sensitivity, are pregnant or planning to be so soon, or are taking any medication (especially lithium carbonate based!) that you consult your doctor to make certain that it is safe for you to work around photographic chemistry.

Please advise your instructor if you have any medical history that may cause complications due to the presence of photographic chemicals. If you are pregnant, for example, especially if you are in the first tri-semester, you probably should not be around color chemistry. Please check with your doctor if you have the slightest doubt about your sensitivity to chemicals now, or if you notice even a slight change in your health during the course of this photo class. We all want you to stay healthy and live a long, productive life as an artist.

DARKROOM RULES:

1. You must wear gloves or use tongs when processing black and white paper. The only place you may use bare hands is to remove prints from the water bath or to wash prints. Developers are toxic, especially if absorbed through the skin over long periods of time.

2. When processing color you must use gloves for both film and paper processing. Color chemicals are very toxic!!! You may use bare hands to wash prints after they are out of the processor, but you should wear gloves to hang film. Stabilizer has formaldehyde in it !!! .

3. Your instructor may ask you to bring a cloth towel (bath size and fluffy preferred) to the lab if you are going to work. A towel helps greatly in cutting down chemical contamination only if you regularly use it to dry your hands, and if you take it home each week and wash it to remove toxic build up of chemicals.

4. Only qualified lab assistants or an instructor may mix up chemistry. If you need chemicals mixed seek out a qualified lab assistant or an instructor.

5. Clean up any chemical spills immediately. Flood the area with cold water and wipe up with paper towels, cleaning until you are certain the chemicals are gone. Chemistry dries, turns to powder, gets on clothes and books, and then into your lungs or it is absorbed into your skin.

6. No eating or drinking in the lab.

7. If you use gloves or tongs, wash your gloves with soap before you remove them, then wash them inside and out with soap and hang to dry. Whether you use gloves or tongs, wash your hands thoroughly with soap before smoking, drinking or eating.

IN CASE OF EMERGENCY:

INHALATION OF CHEMISTRY: get person to fresh air, call 911 and send someone for the school doctor.

INGESTION OF CHEMISTRY: call poison control (941-411) and tell them what the person ingested and follow their directions to help the person. Check the SDS (Safety Data Sheets) for a complete breakdown of any chemicals we use if poison control needs more data. DO NOT induce vomiting unless poison control tells you to.

ELECTRICAL SHOCK: if necessary, turn off power at main switch in fuse box (Call 911, send someone for the school doctor).

CHEMICALS SPLASHED INTO EYES: Immediately flood the eyes with cold water and continue to flood them for 15 minutes. Seek medical attention immediately.

CHEMICALS SPLASHED ON SKIN: Immediately flood skin with water until chemical is washed away. Seek medical attention immediately if you sense you need it, or if any change in skin condition occurs.

Attached is a brief outline of the hazards and precautions for most of the chemicals you may come in contact with this semester. Please read the data carefully so you are familiar with the potential hazards, their precautions and prevention.

California Poison Control: 1-800-222-1222

Emergency: 911

DARKROOM HAZARDS

Very toxic products include:

BLACK AND WHITE DEVELOPERS

Hazards: Skin and eye irritants. Can cause allergic reaction and allergic sensitivity. Especially hazardous in stock mixing stage.

Precautions: To mix stock solutions wear goggles, gloves and respirator or dust mask. Use gloves when mixing working solutions. Avoid skin contact with powders and solution.

COLOR DEVELOPERS

Hazards: Much more toxic and hazardous than black and white developers. Extreme care in handling is necessary. Can cause severe skin allergies, asthma and if absorbed by the skin, nervous system poisoning and permanent damage.

Precautions: If you are pregnant do not use color chemistry. If you are allergy prone avoid prolonged exposure to color chemicals since they can cause allergic sensitization. If taking lithium carbonate based medicine you should not have contact with color chemistry. If any of these three situations exist for you, see your doctor and follow his advice in terms of taking color photography.

All color chemical stock mixing must be done in a well-ventilated room by a qualified individual. Use goggles and gloves for all chemical mixing. Some chemical mixing may also require a respirator.

STOP BATH

Hazards: Concentrate is highly toxic by skin contact, inhalation or ingestion. Continued inhalation of working solution can cause severe sinusitis and bronchitis.

Precautions: Only qualified lab assistants and instructors can mix stop bath. If you use at home, use goggles, gloves and a respirator designed for acids. Always measure water first, then add acid. If you splash stock solution on your skin, flush immediately and thoroughly with cold water. If you splash stock in eyes, flush immediately for fifteen minutes with cold water and seek immediate medical attention.

Slightly toxic products include:

FIXER

Hazards: Not significantly hazardous, although may cause irritation of skin and allergies.

Precautions: If splashed on your skin rinse thoroughly with cold water. If splashed in your eyes flush immediately and for fifteen minutes with cold water and seek medical attention.

COLOR BLEACH, FIXER AND STABILIZER

Hazards: Slightly hazardous. May irritate your skin, eyes and respiratory passages with repeated exposure.

Precautions: Avoid skin contact. If splashed on your skin flush immediately and thoroughly with cold water. If splashed in your eyes, flush immediately with cold water for fifteen minutes. Seek immediate medical attention.

Avoid overheating these and any color chemicals as toxic gases form above 105°F (degrees). Always use gloves and goggles when handling color chemicals. If allowed, dispose of color chemicals one at a time down the sink drain, followed by a one–two minute flush with cold water to avoid mixing chemicals and creating toxic gases above the P-Trap in the drain. For Cibachrome, follow manufacturer’s suggested disposal techniques.

NOTE: Toners are not covered thoroughly in this handout. Some toners are highly toxic, some are mildly so. Consult the manufacturer's information, directions and outline for use and advice. Some toners, for example, release hydrogen sulfide gas (poisonous) when mixed with acids found in stop bath or fixers, so never mix acid with toners. Always wash prints thoroughly before you tone them.

If you decide to tone prints, make sure you do so safely and in a well ventilated space. Follow the manufacturer's directions carefully. If you plan to do any toning at school see the lab assistants or instructors first.

BASIC SAFETY PROCEDURES SUMMARY

1. Read and follow all instructions and safety recommendations provided by the manufacturer before undertaking any process. This includes mixing, handling, disposal, and storage.

2. Become familiar with all the inherent dangers associated with any chemicals being used. When acquiring chemicals, ask about proper handling and safety precautions.

3. Know the antidote for the chemicals you are using. Prominently display the telephone numbers for poison control and emergency treatment centers in your working area and near the telephone.

4. Many chemicals can be flammable. Keep them away from any source of heat or open flame to avoid a possible explosion or fire. Keep a fire extinguisher that can be used for both chemical and electrical fires in the work area.

5. Work in a well-ventilated space. Hazardous chemicals should be mixed under a vented hood or outside.

6. Protect yourself. Wear thin, disposable plastic gloves, safety glasses, and a plastic apron. Use a disposable face mask or respirator when mixing chemicals or if you have had any previous allergic reactions. If you have any type of reaction, consult a physician immediately and suspend work with all photographic processes.

7. Follow mixing instructions precisely.

8. Keep all chemicals off your skin, out of your mouth, and away from your eyes. If you get any chemicals on your skin, flush the area immediately with cool running water.

9. Do not eat, drink, or smoke while handling chemicals.

10. Always pour acids slowly into water; never pour water into acids. Do not mix or pour chemicals at eye level, as a splash could be harmful. Wear protective eye wear when mixing acids.

11. Avoid touching any electrical equipment with wet hands. Install shockproof outlets in your darkroom.

12. Follow instructions for proper disposal of all chemicals. Wash yourself and any equipment that has come into contact with any chemicals. Launder darkroom towels after each session. Dispose of gloves and masks to avoid future contamination. Keep your work space clean and uncontaminated.

13. Store all chemicals properly. Use safety caps or lock up chemicals to prevent other people and pets from being exposed to their potential dangers. Store chemicals in a cool dry area away from any direct sunlight.

14. If you are pregnant or have any pre-existing health problems, seek medical advice before attempting any chemical process in photography.

15. Remember, people have varying sensitivities to chemicals. If you have had allergic reactions to any chemicals, you should pay close attention to the effects that darkroom chemicals have on you, and you should be extra careful about following all safety procedures.

These guidelines are designed to ensure that you have a long and safe adventure in uncovering the many possibilities that are available in the realm of photography. Remember that your eyes, lungs, and skin are porous membranes and can absorb chemical vapors. It is your job to protect yourself.

APPENDIX F

APPROVED METHODS OF CONTROL OF INCOMPATIBLE WASTE STREAMS

Examples of Approved Methods of Control of Incompatible Waste Streams

Below are two examples of approved methods of control of incompatible waste streams from instructional laboratories. Where these methods are not practicable as written, specific written modifications suitable to each lab's operations should be established. In every case, handling of all used laboratory chemicals should be based upon written procedure and the procedure should allow for the segregation of those chemicals by compatibility, type and/or hazard. Wastes should be removed from the laboratories to a central waste storage area daily, prior to the next laboratory experiment, and from the central waste storage area at regular intervals to long term storage (not to exceed 180 days). Each faculty member is responsible for the proper handling of the wastes generated in their respective labs.

Please understand that these approved systems are examples only and other methods that provide the same measure of protection may be utilized.

Student-Determined Method

The Student-Determined method of waste determination allows the student some minimal latitude to separate waste streams when more than one type of waste may be generated from an experiment. Several redundant systems are in place to help ensure that students within the laboratories do not inadvertently mix incompatible wastes while performing lab work. These include:

a) Only the appropriate waste container(s) for the potential waste product(s) will be available to the student during the lab period. For example, if there are no organic flammable wastes in the experiment, there will not be a container available to the student for disposal of organic flammable wastes. The student will only need to determine the individual waste characteristics of the chemical to be disposed, when there is more than one waste receptacle necessary to complete the current experiment. Where this occurs, the student will have clear written instruction from the laboratory manual, citing the label-color of the appropriate receptacle for each waste product being produced. ***The lab instructor must also provide clear instruction on this subject prior to the experiment***.

b) Waste disposal containers will be color coded and clearly marked with the hazard class. This will not only help the lab technicians to segregate waste streams properly but will also prompt the instructor and even the students to double-check that the particular waste product that day is being directed to the appropriate waste stream.

c) Instructors are required to provide specific instruction to the students on the various waste streams, consequences of mixing incompatible chemicals, color coding of labels and specific disposal protocol prior to initiating any lab work (at the start of each semester) and briefly, before each experiment.

d) Lab manuals will provide detailed waste disposal instructions for each experiment, including the color-coding of expected waste(s).

e) Clear postings will be placed near each waste container that will explain the color-coded waste disposal instructions.

Only trained, laboratory technicians will remove the waste containers from the instructional laboratories and add these waste products to bulk containers in storage. These technicians will test each container for pH prior to transport and record this data in a log book. If litmus testing provides information contrary to the container label, the litmus testing, not the container label, will be utilized in determining the appropriate waste stream of the product. Examples of proper labeling for this method are given in a separate section below.

Pre-Determined Method

Where all wastes from an experiment can be safely mixed and lab instructors have predetermined the characteristics of this waste, the lab instructors or lab technicians may affix pre-written labels on waste containers for the students use. Where this occurs, lab technicians will still confirm the final pH of the waste product prior to transferring the container to the proper location within the storage area. Only trained, laboratory technicians will remove the waste containers from the instructional laboratories for storage.

Container Labeling- Student Determined Method

Five separate waste groups have been identified and selected for separation and independent labeling when using the Student-Determined method. These are listed as follows:

INORGANIC CORROSIVE HAZARDOUS WASTE: (Color code-yellow and black) These yellow labels will signify inorganic, strongly acidic waste products with a pH between 0 and 3.

INORGANIC NEUTRAL WASTE: (Color code-light blue and black) These light blue labels will signify inorganic, pH-neutral waste products with a pH between 3 and 11.

INORGANIC ALKALINE WASTE: (Color code-purple and black) These purple labels will signify inorganic, alkaline waste products with a pH between 11 and 14.

INORGANIC OXIDIZING OR HALOGENATED WASTE: (Color code-green and black) These green labels will signify inorganic oxidizing or halogenated waste products (pH to be measured and recorded).

ORGANIC FLAMMABLE WASTE : (Color code-red and yellow) These red labels will signify organic, flammable waste products (pH to be measured and recorded).

Container Labeling- Pre-Determined Method

The example below is of a Pre-Determined Method label. All portions of the label are completed by the laboratory instructor or laboratory technician prior to the experiment except the final pH of the product, to be determined by the laboratory technician at the time the container is to be transferred to the approved storage area.

Hazardous Waste

State and federal law prohibits improper disposal, if found, contact the nearest police or public safety authority or the U.S. Environmental Protection Agency or the California Department of Health Services.

Generator Name: Palomar Community College
Address: 1140 West Mission Rd San Marcos, CA 92069. Phone # (760) 744-1150
EPA ID number: OBTAIN FROM CH OFFICER
Accumulation Start Date:__10_/_15_/_2014_
Technician Names:
Physical State: __Solid; _x_Liquid
Hazardous Properties:__Flammable; __Toxic; _X_ Corrosive; __Reactive;
Other:_____

Contents: (Experiment #6). Ammonium carbonate, Ammonium phosphate, Ammonium sulfate, hydrochloric Acid, barium chloride, calcium chloride, lithium chloride, Sodium chloride, potassium chloride, strontium chloride, Sodium chloride, sodium bromide, sodium chloride, Hexane, nitrate acid, sodium iodide and potassium iodide.

Confirmed pH___

Handle With Care! **Contains Hazardous or Toxic Wastes**

Example College Science Department
Hazardous Waste List
08/13/2014

No.	Contents	pH	Amount	Expt #	Class
C-01	Hydrochloric acid (HCl), Iron (Fe) Sulfur (S), Iron (II) sulfide (FeS)	8	90 oz	1	200L
C-02	Sulfuric acid (H2SO4), Sodium hydroxide (NaOH),Nitric acid (HNO3), Hydrochloric acid (HCl), Acetone (CH3COCH3), Methanol (CH3OH), Zinc (Zn)	10	65 oz	2	200L
C-03	Sulfuric acid (H2SO4), Sodium hydroxide (NaOH),Nitric acid (HNO3), Hydrochloric acid (HCl), Acetone (CH3COCH3), Methanol (CH3OH), Zinc (Zn)	10	60 oz	2	200L
C-04	Sulfuric acid (H2SO4), Sodium hydroxide (NaOH),Nitric acid (HNO3), Hydrochloric acid (HCl), Acetone (CH3COCH3), Methanol (CH3OH), Zinc (Zn)	10	62 oz	2	200L
C-05	Sulfuric acid (H2SO4), Sodium hydroxide (NaOH),Nitric acid (HNO3), Hydrochloric acid (HCl), Acetone (CH3COCH3), Methanol (CH3OH), Zinc (Zn)	10	55 oz	2	200L
C-06	Sulfuric acid (H2SO4), Sodium hydroxide (NaOH),Nitric acid (HNO3), Hydrochloric acid (HCl), Acetone (CH3COCH3), Methanol (CH3OH), Zinc (Zn)	10	60 oz	2	200L
C-07	Sulfuric acid (H2SO4), Sodium hydroxide (NaOH),Nitric acid (HNO3), Hydrochloric acid (HCl), Acetone (CH3COCH3), Methanol (CH3OH), Zinc (Zn)	10	60 oz	2	200L
C-08	Methanol (CH3OH), ethanol (C2H5OH), Cobalt chloride (CoCl2), Red cabbage juice, Sodium Bicarbonate (NaHCO3), Vinegar (CH3COOH), Ammonia (NH3), Lemon juice, 7-up	5	60 oz	activity# 4	201L
C-09	Ammonium chloride (NH4Cl), Hydrochloric acid (HCl), Ammonium hydroxide (NH4OH), Ethanol (C2H5OH), phenolphthalein, Sodium hydroxide (NaOH), Nitric acid (HNO3), Magnesium chloride (MgCl2), Cobalt chloride (CoCl2), Potassium cromate (K2CrO4), Silver nitrate (AgNO3), Ethylenediaminethetraacetic (Na4EDTA),	9	85 oz	1	201L
C-10	Methanol (CH3OH), ethanol (C2H5OH), Cobalt chloride (CoCl2), Red cabbage juice, Sodium Bicarbonate	8	64 oz	activity# 4	201L
C-11	Ammonium chloride (NH4Cl), Sodium hydroxide (NaOH), Cobalt chloride (CoCl2), Iodine (I2), Benzyl alcohol (C6H5CH2OH), Hexane (C6H14), Magnesium (Mg), Calcium oxide (CaO), Hydrochloric acid (HCl)	3	100 oz	#100 online	100L
C-12	Nikel sulfate (NiSO4), Ethylenediamine, Ethanol (C2H5OH), Methyl red, Hydrochloric acid (HCl), Sodium hydroxide (NaOH), Sulfuric acid (H2SO4)	7	64 oz	6	201L

C-13	Sodium hydroxide (NaOH), crystal violet,	7	55 oz	5	201L
C-14	Sodium hydroxide (NaOH), crystal violet,	7	90 oz	5	201L
C-15	Sodium hydroxide (NaOH), crystal violet,	7	50 oz	5	201L
C-16	Phenolphthalein, Sodium hydroxide (NaOH), Ammonium hydroxide (NH4OH), Hydrochloric acid (HCl), Acetic acid (HC2H3O2)	2	62-oz	3	201L
C-17	Aluminum potassium sulfate, Acetone, Copper sulfate, Cobalt (II) chloride, Magnesium Sulfate, Calcium chloride.	7	36 oz	10	152L
C-18	Ethanol (C2H5OH), 2-propanol (C3H7OH), Cyclohexanol (C6H11OH), t-butyl alcohol (CH3)3COH, Phenol (C6H5OH),Potassium Chromate (K2Cr2O7), Sulfuric Acid (H2SO4), Iron (III) Chloride (FeCl3)	3	20 oz	Alcohols & Phenols	130L
C-19	Iodine (I2), Potassium idodide (KI), Benedict's solution, Seliwanoff's solution, Starch, Sucrose (C12H22O11), Fructose (C6H12O6), Glucose (C6H12O6), Lactose (C6H12O6)	6	15 oz	Carbohydrat	130L
C-20	Ethyl alcohol (C2H5OH), sugar (C12H22O11), Sulfuric acid (H2SO4), Nitric acid (HNO3), Copper (II) sulfate (CuSO4), Iron (Fe)	3	32 oz	1	152L
C-21	Aspirin (C9H8O4), Phosphoric acid (H3PO4), Iron (III) chloride (FeCl3), Acetic anhydride (CH3CO)2O, Ethyl acetate (CH3COOC2H5), Salicylic acid (C6H4OHCOOH), Potassium iodide (KI), Iodine (I2), Hexane (C6H14), Ibuprofen (C13H18O2), Actaminophen (C8H9NO2), Naproxen (C14H14O3), Caffeine (C8H10N4O2),	3	34 oz	Aspirin & other Analgesics	130L
C-22	Methyl alcohol (CH3OH), Iodine (I2), sucrose (C12H22O11), Amy alcohol, (C5H11OH), Copper (Cu), Ammonium bicarbonate (NH4HCO3), Potassium bicarbonate (KHCO3), Sodium carbonate (Na2CO3), Sodium Sulfate (Na2SO4), Hydrochloric Acid (HCl), Calcium Nitrate Ca(NO3)2, Copper (ll) nitrate Cu(NO3)2, Ammonium hydroxide (NH4OH), Acetone (CH3COCH3), Ethanol (C2H5OH), 2 - propanol (C3H7OH), Hexane (C6H14)	8	60 oz	5	152L
C-23	Sodium Iodide (NaI), Sodium Chloride (NaCl), Sodium Sulfate (Na2SO4), Silver nitrate (AgNO3), Ammonium hydroxide (NH4OH), Nitric acid (HNO3), Barium nitrate Ba(NO3)2,	8	36 oz	7	152L

C-24	Ammonium chloride (NH4Cl), Hydrochloric acid (HCl), Ammonium hydroxide (NH4OH), Ethanol (C2H5OH), phenolphthalein, Sodium hydroxide (NaOH), Nitric acid (HNO3), Magnesium chloride (MgCl2), Cobalt chloride (CoCl2), Potassium cromate (K2CrO4), Silver nitrate (AgNO3), Ethylenediaminethetraacetic (Na4EDTA),	7	25 -oz	1	201L
C-25	Aniline (C6H7N), N-Methylaniline (C7H9N), Trimethylamine (C6H15N), Hydrochloric acid (HCl), Sodium hydroxide (NaOH), Acetamide (CH3CONH2), Benzamide (C7H7NO)	4	25 oz	Amines & Amides	130L
C-26	Iodine (I2), Potassium idodide (KI), Benedict's solution, Seliwanoff's solution, Starch, Sucrose (C12H22O11), Fructose (C6H12O6), Glucose (C6H12O6), Lactose (C6H12O6)	7	40 oz	Carbohydrat	130L
C-27	Calcium Chloride (CaCl2), Potassium Nitrate (KNO3)	7	64 oz	Calorimetr y	152L
C-28	Potassium iodide (KI), Sodium chloride (NaCl), Copper (II) sulfate (CuSO4), Hydrochloric acid (HCl)	2	40 oz	8	201L
C-29	Hydroxylamine (HONH3), Potassium permanganate (KMnO4), Hydrochloric acid (HCl), Ferric sulfate (Fe2(SO4)3	3	90 oz	Practical Lab	201L
C-30	Hydroxylamine (HONH3), Potassium permanganate (KMnO4), Hydrochloric acid (HCl), Ferric sulfate (Fe2(SO4)3	3	96 oz	Practical Lab	201L
C-31	Potassium iodide (KI), Sodium chloride (NaCl), Copper (II) sulfate (CuSO4), Hydrochloric acid (HCl)	3	96-oz	8	201L
C-32	Potassium nitrate (KNO3)	3	25 oz	7	201L
C-33	Sodium hydroxide, potassium Hydroxide phthalate, phenolphthalein and vinegar.	10	64 oz	7	152L
C-34	Hydroxylamine (HONH3), Potassium permanganate (KMnO4), Hydrochloric acid (HCl), Ferric sulfate (Fe2(SO4)3	2	40 oz	Practical Lab	201L
C-35	Potassium permanganate, Iodine, hexane, methanol, acetone, heptane, ethanol, Sodium chloride, sodium acetate trhydrate.	7	50 oz	11	152L
C-36	Aluminum potassium sulfate, Acetone, Copper sulfate, Cobalt (II) chloride, Magnesium Sulfate, Calcium chloride.	7	10 oz	10	152L

C-37	Ammonium carbonate (NH4)2CO3, Ammonium phosphate (NH4)2HPO4, Ammonium sulfate (NH4)2SO4, hydrochloric acid (HCl), Barium chloride (BaCl2), Calcium chloride (CaCl2), Lithium Chloride (LiCl), Potassium chloride (KCl), Sodium chloride (NaCl), Strontium chloride (SrCl2), Sodium bromide (NaBr), Sodium iodide (NaI), Hexane (C6H14), Nitric acid (HNO3), Chlorine water (bleach), Potassium iodide (KI)	2	50 oz	6	152L
C-38	Ethanol (C2H5OH), Diethyl ether (C2H5OC2H5), Milk, Acetic acid (CH3COOH), Nitric acid (HNO3), Albumin, Copper(II) sulfate (CuSO4), Ninhydrin reagent, Sodium hydroxide (NaOH), Sodium nitrate (NaNO3), tyrosine (C19H11NO3), Gelatin, Glycine (NH2CH2COOH), Silver nitrate (AgNO3), Milk.	10	30 oz	Peptites & Proteins	130L
C-39	Ammonium carbonate (NH4)2CO3, Ammonium phosphate (NH4)2HPO4, Ammonium sulfate (NH4)2SO4, hydrochloric acid (HCl), Barium chloride (BaCl2), Calcium chloride (CaCl2), Lithium Chloride (LiCl), Potassium chloride (KCl), Sodium chloride (NaCl), Strontium chloride (SrCl2), Sodium bromide (NaBr), Sodium iodide (NaI), Hexane (C6H14), Nitric acid (HNO3), Chlorine water (bleach), Potassium iodide (KI)	2	32 oz	6	152L
C-40	Iodine (I2), Potassium idodide (KI), Benedict's solution, Seliwanoff's solution, Starch, Sucrose (C12H22O11), Fructose (C6H12O6), Glucose (C6H12O6), Lactose (C6H12O6)	3	32 oz	Carbohydrat	130L
C-41	Bromine (Br2), Cyclohexane (C6H12), Calcium Chloride (CaCl2), Iron (III) Chloride (FeCl3), Magnesium Chloride (MgCl2), Sodium Hydroxide (NaOH), Phenolphthalein, Ethanol (C2H5OH), Olive oil, Soap, Shortering.	7	60 oz	#Soap	130L
C-42	Hi-C Grape, Hi-C Orange, Hi-C apple, Celite, Iodine (I2), Hydrochloric acid (HCl), Potassium iodide (KI), starch	3	80 oz	Vitamins	130L
C-43	Copper(II) sulfate (CuSO4), Sodium hydrogen carbonate (NaHCO3), Copper (Cu), Magnesium (Mg), Calcium (Ca), Hydrochloric acid (HCl), Silver nitrate (AgNO3), copper(II) nitrate Cu(NO3)2, Aluminum nitrate Al(NO3)3, Potassium carbonate (K2CO3), Sodium phosphate (Na3PO4), Nitric acid (HNO3), Sulfuric acid (H2SO4), Phosphoric acid (H3PO4), Sodium hydroxide (NaOH), Phenolphthalein, Acetone (C3H6O), Sulfur (S)	8	30 oz	8	152L
C-44	Methylene chloride (CH2Cl2), Hexane (C6H14), Ethanol (C2H5OH), Methanol (CH3OH), 1-Propanol (C3H7OH), 2-Propanol (C3H7OH)	7	25 oz	3	152L
C-45	Sulfur, Magnesium andCopper wire.	7	10 oz	9	152L

C-46	Acetone (CH3COCH3), Ethyl ether (C2H5OC2H5)	7	55 oz	Glycerophos-	130L
C-47	Nikel sulfate (NiSO4), Ethylenediamine, Ethanol (C2H5OH), Methyl red, Hydrochloric acid (HCl), Sodium hydroxide (NaOH), Sulfuric acid (H2SO4)	8	45 oz	6	201L
C-48	Vitamins:A, B, C, D, E; folic acid, starch, Methylene chloride (CH2Cl2), Hi-C Orange, Lemonade, Acetic acid (CH3COOH), Iodine (I2), Potassium iodide (KI)	2	40 oz	#Vitamins	130L
C-49	Phenolphthalein, Sodium hydroxide (NaOH), Ammonium hydroxide (NH4OH), Hydrochloric acid (HCl), Acetic acid (HC2H3O2)	3	64-oz	3	201L
C-50	Copper (II) sulfate (CuSO4), Sodium chloride (NaCl), Sodium hydroxide (NaOH), Sodium thiosulfate (Na2S2O3), Ammonium chloride (NH4Cl)	8	64 oz	14	200L
C-51	Hexane (C6H14), Ethanol (C2H5OH), Hydrochloric acid (HCl), Potassium iodide (KI), Iodine (I2), Potassium permanganate (KMnO4), Sucrose	4	2.5L	11	200L
C-52	Hexane (C6H14), Ethanol (C2H5OH), Hydrochloric acid (HCl), Potassium iodide (KI), Iodine (I2), Potassium permanganate (KMnO4), Sucrose	4	2.5L	11	200L
C-53	Hexane (C6H14), Ethanol (C2H5OH), Hydrochloric acid (HCl), Potassium iodide (KI), Iodine (I2), Potassium permanganate (KMnO4), Sucrose	10	2.5L	11	200L
C-54	Citric acid (H3C6H5O7), Hydrochloric acid (HCl), Baking soda (NaHCO3), Magnessium (Mg)	7	90 oz	7	200L
C-55	Methanol (CH3OH), Ethanol (C2H5OH)), 1-propanol (C3H7OH), 1-butanol (C4H9OH), n-pentane (C5H12), n-hexane (C6H14)	7	20 oz	12	200L
C-56	Hydrochloric acid (HCl), Sodium chloride (NaCl), Calcium chloride (CaCl2), Strontium chloride (SrCl2), Lithium chloride (LiCl), Potassium chloride (KCl), Barium chloride (BaCl2)	4	64 oz	8	200L
C-57	Ammonium chloride (NH4Cl), Sodium hydroxide (NaOH), Acetic acid (CH3COOH), Colbalt chloride (CoCl2), Potassium chromate (K2CrO4), Sodium acetate (CH3COONa), Hydrochloric acid (HCl)	2	30 oz	Equilibrium	100L
C-58	Glycerol (C3H8O3), Isopropanol (C3H7OH)	7	10 oz	#8	100L
C-59	Glycerol (C3H8O3), Isopropanol (C3H7OH)	7	50 oz	Density	100L
C-60	Ammonium chloride (NH4Cl), Sodium hydroxide (NaOH), Cobalt chloride (CoCl2), Iodine (I2), Benzyl alcohol (C6H5CH2OH), Hexane (C6H14), Magnesium (Mg), Calcium oxide (CaO), Hydrochloric acid (HCl)	7	64 oz	#100 online	100L
C-61	Copper(II) sulfate (CuSO4), Barium chloride (BaCl2), Magnesium sulfate (MgSO4), Sodium sulfate (Na2SO4)	8	10 oz	10	200L

C-62	Sodium chloride (NaCl), Calcium chloride (CaCl2), Alumium chloride (AlCl3),	8	64 oz	4	200L
C-64	Aluminum (Al), Hydrochloric acid (HCl)	4	50 oz	5	200L
C-65	Aluminum (Al), Hydrochloric acid (HCl)	4	60 oz	5	200L
C-68	Methyl alcohol (CH3OH), Iodine (I2), sucrose (C12H22O11), Amy alcohol, (C5H11OH), Copper (Cu), Ammonium bicarbonate (NH4HCO3), Potassium bicarbonate (KHCO3), Sodium carbonate (Na2CO3), Sodium Sulfate (Na2SO4), Hydrochloric Acid (HCl), Calcium Nitrate Ca(NO3)2, Copper (II) nitrate Cu(NO3)2, Ammonium hydroxide (NH4OH), Acetone (CH3COCH3), Ethanol (C2H5OH), 2 - propanol (C3H7OH), Hexane (C6H14)	7	60 oz	5	152L
C-70	Ammonium carbonate (NH4)2CO3, Ammonium phosphate (NH4)2HPO4, Ammonium sulfate (NH4)2SO4, hydrochloric acid (HCl), Barium chloride (BaCl2), Calcium chloride (CaCl2), Lithium Chloride (LiCl), Potassium chloride (KCl), Sodium chloride (NaCl), Strontium chloride (SrCl2), Sodium bromide (NaBr), Sodium iodide (NaI), Hexane (C6H14), Nitric acid (HNO3), Chlorine water (bleach), Potassium iodide (KI)	2	80 oz	6	152L
C-76	Sulfuric acid (H2SO4), Sodium hydroxide (NaOH),Nitric acid (HNO3), Hydrochloric acid (HCl), Acetone (CH3COCH3), Methanol (CH3OH), Zinc (Zn)	10	60 oz	2	200L
C-84	Hydrochloric acid (HCl),Sodium bicarbonate (NaHCO3), Thymol blue, Phenolphthalein,	8	70 oz	3	200L
C-85	Hydrochloric acid (HCl),Sodium bicarbonate (NaHCO3), Thymol blue, Phenolphthalein,	8	70 oz	3	200L

APPENDIX G

CALIFORNIA HEALTH AND SAFETY CODE SECTION 117600 THROUGH 118360 (MEDICAL WASTE)

Medical Waste Management Act

California Health and Safety Code
Sections 117600 - 118360

California Department of Public Health
Medical Waste Management Program
1616 Capitol Avenue, MS-7405
P. O. Box 997377
Sacramento, CA 95899-7377

Medical Waste Management Act
California Health and Safety Code
Sections 117600 – 118360

Table of Contents

Chapter 1 - General Provisions

117600 - Citation of part
This part shall be known and may be cited as the Medical Waste Management Act.

117605 - Preempt
This part does not preempt any local ordinance regulating infectious waste, as that term was defined by Section 25117.5 as it read on December 31, 1990, if the ordinance was in effect on January 1, 1990, and regulated both large and small quantity generators. Any ordinance may be amended in a manner that is consistent with this part.

117610 - Regulations
The department shall adopt regulations that will establish and ensure statewide standards for uniformity in the implementation and administration of this part and that will promote waste minimization and source reduction.

117615 - Local Ordinance
Notwithstanding Section 117605, with the approval of the director, and in the interest of public health, a local ordinance providing more stringent requirements than specified in this part may be implemented for a specified time period.

117620 - Initiate Program
The department and any local enforcement agency initially electing to implement a medical waste management program pursuant to this part shall initiate that program and begin enforcement of its provisions on or before April 1, 1991, except for medical waste programs operating under Section 117605.

Chapter 2 - Definitions

117625 - Definitions
Unless the context requires otherwise, the definitions in this article govern the construction of this part.

117630 - Biohazard Bag
“Biohazard bag” means a disposable red bag that is impervious to moisture and has a strength sufficient to preclude ripping, tearing, or bursting under normal conditions of usage and handling of the waste-filled bag. A biohazard bag shall be constructed of material of sufficient single thickness strength to pass the 165-gram dropped dart impact resistance test as prescribed by Standard D 1709-85 of the American Society for Testing and Materials and certified by the bag manufacturer.

117635 - Biohazardous Waste
“Biohazardous waste” means any of the following:

(a) Laboratory waste, including, but not limited to, all of the following:

(1) Human or animal specimen cultures from medical and pathology laboratories.

(2) Cultures and stocks of infectious agents from research and industrial laboratories.

(3) Wastes from the production of bacteria, viruses, spores, discarded live and attenuated vaccines used in human health care or research, discarded animal vaccines, including Brucellosis and Contagious Ecthyma, as identified by the department, and culture dishes and de-vices used to transfer, inoculate, and mix cultures.

(b) Human surgery specimens or tissues removed at surgery or autopsy, which are suspected by the attending physician and surgeon or dentist of being contaminated with infectious agents known to be contagious to humans.

(c) Animal parts, tissues, fluids, or carcasses suspected by the attending veterinarian of being contaminated with infectious agents known to be contagious to humans.

(d) Waste, which at the point of transport from the generator's site, at the point of disposal, or thereafter, contains recognizable fluid blood, fluid blood products, containers or equipment containing blood that is fluid, or blood from animals known to be infected with diseases which are highly communicable to humans.

(e) Waste containing discarded materials contaminated with excretion, exudate, or secretions from humans or animals that are required to be isolated by the infection control staff, the attending physician and surgeon, the attending veterinarian, or the local health officer, to protect others from highly communicable diseases or diseases of animals that are highly communicable to humans.

(f)

(1) Waste which is hazardous only because it is comprised of human surgery specimens or tissues which have been fixed in formaldehyde or other fixatives, or only because the waste is contaminated through contact with, or having previously contained, chemotherapeutic agents, including, but not limited to, gloves, disposable gowns, towels, and intravenous solution bags and attached tubing which are empty. A biohazardous waste which meets the conditions of this paragraph is not subject to Chapter 6.5 (commencing with Section 25100) of Division 20.

(2) For purposes of this subdivision, "chemotherapeutic agent" means an agent that kills or prevents the reproduction of malignant cells.

(3) For purposes of this subdivision, a container, or inner liner removed from a container, which previously contained a chemotherapeutic agent, is empty if the

container or inner liner removed from the container has been emptied by the generator as much as possible, using methods commonly employed to remove waste or material from containers or liners, so that the following conditions are met:

(A) If the material which the container or inner liner held is pourable, no material can be poured or drained from the container or inner liner when held in any orientation, including, but not limited to, when tilted or inverted.

(B) If the material which the container or inner liner held is not pourable, no material or waste remains in the container or inner liner that can feasibly be removed by scraping.

(g) Waste that is hazardous only because it is comprised of pharmaceuticals, as defined in Section 117747. Notwithstanding subdivision (a) of Section 117690, medical waste includes biohazardous waste that meets the conditions of this subdivision. Biohazardous waste that meets the conditions of this subdivision is not subject to Chapter 6.5 (commencing with Section 25100) of Division 20.

117640 - Common Storage Facility
"Common storage facility" means any designated accumulation area that is onsite and is used by small quantity generators otherwise operating independently for the storage of medical waste for collection by a registered hazardous waste hauler.

117645 - Container
"Container" means the rigid container in which the medical waste is placed prior to transporting for purposes of storage or treatment.

117650 - Enforcement Agency
"Enforcement agency" means the department or the local agency administering this part.

117655 - Enforcement Officer
"Enforcement officer" means the director, or agents or registered environmental health specialists appointed by the director, and all local health officers, directors of environmental health, and their duly authorized registered environmental health specialists and environmental health specialist trainees, or the designees of the director, local health officers, or the directors of environmental health.

117657 - Fund
"Fund" means the Medical Waste Management Fund created pursuant to Section 117885.

117660 - Hazardous Waste Hauler
"Hazardous waste hauler" means a person registered as a hazardous waste hauler pursuant to Article 6 (commencing with Section 25160) and Article 6.5 (commencing with Section 25167.1) of Chapter 6.5 of Division 20 and Chapter 30 (commencing with Section 66001) of Division 4 of Title 22 of the California Code of Regulations.

117662 - Health Care Professional
"Health care professional" means any person licensed or certified pursuant to Division 2 (commencing with Section 500) of the Business and Professions Code; any person licensed pursuant to the Osteopathic Initiative Act, as set forth in Chapter 8 (commencing with Section 3600) of Division 2 of the Business and Professions Code, or pursuant to the Chiropractic Initiative Act, as set forth in Chapter 2 (commencing with Section 1000) of Division 2 of the Business and Professions Code; and any person certified pursuant to Division 2.5 (commencing with Section 1797).

117665 - Highly Communicable Diseases
"Highly communicable diseases" means diseases, such as those caused by organisms classified by the federal Centers for Disease Control as Biosafety Level IV organisms, that, in the opinion of the infection control staff, the department, local health officer, attending physician and surgeon, or attending veterinarian, merit special precautions to protect staff, patients, and other persons from infection. "Highly communicable diseases" does not include diseases such as the common cold, influenza, or other diseases not representing a significant danger to nonimmunocompromised persons.

117670 - Household Waste
"Household waste" means any material, including garbage, trash, and sanitary wastes in septic tanks and medical waste, that is derived from households, farms, or ranches. Household waste does not include trauma scene waste.

117671 – Home-generated Sharps Waste
"Home-generated sharps waste" means hypodermic needles, pen needles, intravenous needles, lancets, and other devices that are used to penetrate the skin for the delivery of medications derived from a household, including a multifamily residence or household.

117672 - Industrial Hygienist
"Industrial hygienist" means a person who has met the educational requirements of an industrial hygiene certification organization, as defined in subdivision (c) of Section 20700 of the Business and Professions Code, and who has had at least one year in the comprehensive practice of industrial hygiene, as defined in subdivision (a) of Section 20700 of the Business and Professions Code.

117675 - Infectious Agent
"Infectious agent" means a type of microorganism, bacteria, mold, parasite, or virus, including, but not limited to, organisms managed as Biosafety Level II, III, or IV by the federal Centers for Disease Control and Prevention, that normally causes, or significantly contributes to the cause of, increased morbidity or mortality of human beings.

117680 - Large Quantity Generator
"Large quantity generator" means a medical waste generator, other than a trauma scene waste management practitioner, that generates 200 or more pounds of medical waste in any month of a 12-month period.

117685 - Local Agency
"Local agency" means the local health department, as defined in Section 101185, or the local comprehensive environmental agency established in accordance with Section 101275, of a county that has elected to adopt a local ordinance to administer and enforce this part, pursuant to Chapter 3 (commencing with Section 117800).

117690 - Medical Waste
(a) "Medical waste" means waste which meets both of the following requirements:
(1) The waste is composed of waste which is generated or produced as a result of any of the following actions:

(A) Diagnosis, treatment, or immunization of human beings or animals.

(B) Research pertaining to the activities specified in subparagraph (A).

(C) The production or testing of biologicals.

(D) The accumulation of properly contained home-generated sharps waste that is brought by a patient, a member of the patient's family, or by a person authorized by the enforcement agency, to a point of consolidation approved by the enforcement agency pursuant to Section 117904 or authorized pursuant to Section 118147.

(E) Removal of a regulated waste, as defined in Section 5193 of Title 8 of the California Code of Regulations, from a trauma scene by a trauma scene waste management practitioner.

(2) The waste is either of the following:

(A) Biohazardous waste.

(B) Sharps waste.

(b) For purposes of this section, "biologicals" means medicinal preparations made from living organisms and their products, including, but not limited to, serums, vaccines, antigens, and anti-toxins.

(c) Medical waste includes trauma scene waste.

117695 - Treated Medical Waste
Medical waste that has been treated in accordance with Chapter 8 (commencing with Section 118215) and that is not otherwise hazardous, shall thereafter be considered solid waste as defined in Section 40191 of the Public Resources Code and not medical waste.

117700 - Not Medical Waste
Medical waste does not include any of the following:

(a) Waste generated in food processing or biotechnology that does not contain an infectious agent as defined in Section 117675.

(b) Waste generated in biotechnology that does not contain human blood or blood products or animal blood or blood products suspected of being contaminated with infectious agents known to be communicable to humans.

(c) Urine, feces, saliva, sputum, nasal secretions, sweat, tears, or vomitus, unless it contains fluid blood, as provided in subdivision (d) of Section 117635.

(d) Waste which is not biohazardous, such as paper towels, paper products, articles containing nonfluid blood, and other medical solid waste products commonly found in the facilities of medical waste generators.

(e) Hazardous waste, radioactive waste, or household waste, including, but not limited to, home-generated sharps waste, as defined in Section 117671.

(f) Waste generated from normal and legal veterinarian, agricultural, and animal livestock management practices on a farm or ranch.

117705 - Medical Waste Generator
"Medical waste generator" means any person whose act or process produces medical waste and includes, but is not limited to, a provider of health care, as defined in subdivision (d) of Section 56.05 of the Civil Code. All of the following are examples of businesses that generate medical waste:

(a) Medical and dental offices, clinics, hospitals, surgery centers, laboratories, research laboratories, unlicensed health facilities, those facilities required to be licensed pursuant to Division 2 (commencing with Section 1200), chronic dialysis clinics, as regulated pursuant to Division 2 (commencing with Section 1200), and education and research facilities.

(b) Veterinary offices, veterinary clinics, and veterinary hospitals.

(c) Pet shops.

(d) Trauma scene waste management practitioners.

117710 - Medical Waste Management Plan
"Medical waste management plan" means a document that is completed by generators of medical waste pursuant to Sections 117935 and 117960, on forms prepared by the enforcement agency.

117715 - Medical Waste Permit
"Medical waste permit" means a permit issued by the enforcement agency to a medical waste treatment facility.

117720 - Medical Waste Registration
"Medical waste registration" means a registration issued by the enforcement agency to a medical waste generator.

117725 - Medical Waste Treatment Facility

(a) "Medical waste treatment facility" means all adjacent land and structures, and other appurtenances or improvements on the land, used for treating medical waste or for associated handling and storage of medical waste. Medical waste treatment facilities are those facilities treating waste pursuant to subdivision (a) or (c) of Section 118215. A medical waste treatment method approved pursuant to subdivision (d) of Section 118215 may be designated as a medical waste treatment facility by the department.

(b) "Adjacent," for purposes of subdivision (a), means real property within 400 yards from the property boundary of the existing medical waste treatment facility.

117730 - Mixed Waste
"Mixed waste" means mixtures of medical and non-medical waste. Mixed waste is medical waste, except for all of the following:

(a) Medical waste and hazardous waste is hazardous waste and is subject to regulation as specified in the statutes and regulations applicable to hazardous waste.

(b) Medical waste and radioactive waste is radioactive waste and is subject to regulation as specified in the statutes and regulations applicable to radioactive waste.

(c) Medical waste, hazardous waste, and radioactive waste is radioactive mixed waste and is subject to regulation as specified in the statutes and regulations applicable to hazardous waste and radioactive waste.

117735 - Offsite
"Offsite" means any location that is not onsite.

117740 - Onsite

(a) "Onsite" means a medical waste treatment facility, or common storage facility on the same or adjacent property as the generator of the medical waste being treated.

(b) "Adjacent," for purposes of subdivision (a), means real property within 400 yards from the property boundary of the existing medical waste treatment facility.

117742 - Parent Organization
"Parent organization" means an organization that employs or contracts with health care professionals who provide health care services at a location other than at a health care facility specified in subdivision (a) of Section 117705.

117745 - Person
"Person" means an individual, trust, firm, joint stock company, business concern, partnership, association, limited liability company, and corporation, including, but not limited to, a government corporation. "Person" also includes any city, county, district, commission, the state or any department, agency, or political subdivision thereof, the Regents of the University of California, any interstate body, and the federal government or any department or agency thereof to the extent permitted by law.

117747 - Pharmaceutical

(a) "Pharmaceutical" means a prescription or over-the-counter human or veterinary drug, including, but not limited to, a drug as defined in Section 109925 or the Federal Food, Drug, and Cosmetic Act, as amended, (21 U.S.C.A. Sec. 321(g)(1)).

(b) For purposes of this part, "pharmaceutical" does not include any pharmaceutical that is regulated pursuant to either of the following:

(1) The federal Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C.A. Sec. 6901 et seq.).

(2) The Radiation Control Law (Chapter 8 [commencing with Section 114960] of Part 9).

117750 - Sharps Container
"Sharps container" means a rigid puncture-resistant container that, when sealed, is leak resistant and cannot be reopened without great difficulty.

117755 - Sharps Waste
"Sharps waste" means any device having acute rigid corners, edges, or protuberances capable of cutting or piercing, including, but not limited to, all of the following:

(a) Hypodermic needles, hypodermic needles with syringes, blades, needles with attached tubing, syringes contaminated with biohazardous waste, acupuncture needles, and root canal files.

(b) Broken glass items, such as Pasteur pipettes and blood vials contaminated with biohazardous waste.

(c) Any item capable of cutting or piercing that is contaminated with trauma scene waste.

117760 - Small Quantity Generator
"Small quantity generator" means a medical waste generator, other than a trauma scene waste management practitioner, that generates less than 200 pounds per month of medical waste.

117765 - Storage
"Storage" means the holding of medical wastes, in accordance with Chapter 9 (commencing with Section 118275), at a designated accumulation area, offsite point of consolidation, transfer station, other registered facility, or in a vehicle detached from its means of locomotion.

117770 - Tracking Document
"Tracking document" means the medical waste tracking document specified in Section 118040.

117775 - Transfer Station

(a) "Transfer station" means any offsite location where medical waste is loaded, unloaded, stored, or consolidated by a registered hazardous waste hauler, or a holder of a limited quantity hauling exemption granted pursuant to Section 118030, during the normal course of transportation of the medical waste.

(b) "Transfer station" does not include any onsite facility, including, but not limited to, common storage facilities, facilities of medical waste generators employed for the purpose of consolidation, or onsite treatment facilities.

117776 - Trauma Scene.

(a) "Trauma scene" means a location soiled by, or contaminated with, human blood, human body fluids, or other residues from the scene of a serious human injury, illness, or death.

(b) For purposes of this section, a location may include, but is not limited to, a physical structure that is not fixed geographically, such as mobile homes, trailers, or vehicles.

117777 - Trauma Scene Waste
"Trauma scene waste" means waste that is a regulated waste, as defined in Section 5193 of Title 8 of the California Code of Regulations, and that has been removed, is to be removed, or is in the process of being removed, from a trauma scene by a trauma scene waste management practitioner.

117778 - Trauma Scene Waste Management Practitioner
"Trauma scene waste management practitioner" means a person who undertakes as a commercial activity the removal of human blood, human body fluids, and other associated residues from the scene of a serious human injury, illness, or death, and who is registered with the department pursuant to Chapter 9.5 (commencing with Section 118321).

117780 - Treatment
"Treatment" means any method, technique, or process designed to change the biological character or composition of any medical waste so as to eliminate its potential for causing disease, as specified in Chapter 8 (commencing with Section 118215).

Chapter 3 - Powers and Duties

117800 - Local Agency
A local agency may implement a medical waste management program by the adoption of an ordinance or resolution by the local governing body, in accordance with this part.

117805 - Notify Department
Except as provided in subdivision (a) of Section 117810, a local agency that elects to implement a medical waste management program shall notify the department within 90 days from the effective date of the act enacting this part.

117810 - Implementation

(a) If a local agency does not elect to implement a medical waste management program, the local agency may elect to contract with another local agency to implement a medical waste management program or to implement it at a later date. This election shall be made by the local governing body, that shall take effect 90 days after a notice of election is filed with the department.

(b) A local agency that elects to implement a medical waste management program shall continue to implement that program until the local governing body terminates the election by resolution or ordinance or the department revokes the authority of the local agency to administer a medical waste management program. The local agency shall file the notice of termination with the department at least 180 days prior to the termination date.

117815 - Program Consistency
Any local agency that has elected to implement a medical waste management program shall maintain a program that is consistent with Section 117820 and the regulations adopted pursuant to that section. With the approval of the department, the local agency may administer or enforce this part with respect to any person.

117820 - Medical Waste Management Program
A medical waste management program shall include, but not be limited to, all of the following:

(a) Issuing medical waste registrations pursuant to Chapter 5 (commencing with Section 117950) and permits pursuant to Chapter 7 (commencing with Section 118130).

(b) Processing and reviewing the medical waste management plans and inspecting onsite treatment facilities in accordance with Chapter 4 (commencing with Section 117925) for all small quantity medical waste generators required to be registered.

(c) Conducting an evaluation, inspection, or records review for all facilities or persons issued a large quantity medical waste registration pursuant to Chapter 5 (commencing with Section 117950) or issued a permit for an onsite medical waste treatment facility pursuant to Section 118130.

(d) Inspecting medical waste generators in response to complaints or emergency incidents, or as part of an investigation or evaluation of the implementation of the medical waste management plan.

(e) Inspecting medical waste treatment facilities in response to a complaint or as part of an investigation or emergency incident.

(f) Taking enforcement action for the suspension or revocation of medical waste permits issued by the local agency pursuant to this part.

(g) Referring or initiating proceedings for civil or criminal prosecution of violations specified in Chapter 10 (commencing with Section 118335).

(h) Reporting in a manner determined by the department so that the statewide effectiveness of the program can be determined.

117825 - Registration and Permit Fees
Each local enforcement agency that elects to implement the medical waste management program may prescribe, by resolution or ordinance, the registration and permit fees necessary to pay its reasonable expenses to administer the program.

117830 - Enforcement Agency

(a) A local agency electing to implement a medical waste management program is the enforcement agency for the jurisdiction where it is located and so designated by the department.

(b) In any local jurisdiction where the local agency does not elect to implement a medical waste management program, the department is the enforcement agency.

(c) Nothing in this chapter shall prevent a district attorney, city attorney, or city prosecutor from bringing any enforcement action for violation of this chapter.

117835 - Department's Database
The department shall establish and maintain a data-base of persons registered under Chapter 4 (commencing with Section 117925) and persons registered under Chapter 5 (commencing with Section 117950) for whom the department is the enforcement agency.

117840 - Intent of the Legislature
It is the intent of the Legislature that the program carried out pursuant to this part be fully supported from the fees received pursuant to this part.

117845 - Department shall Implement
The department shall implement this part so as to maximize the funds that may be received from the federal government.

117850 - Share Information
Information may be shared between the department and the Environmental Protection Agency.

117855 - Withdrawal
If the department finds that a local enforcement agency is not consistently fulfilling its responsibilities, the department shall notify the agency of the particular reasons for finding that the agency is not fulfilling its responsibilities and of the department's intention to withdraw its designation if, within a time to be specified in that notification, but in no event less than 30 days, the agency does not take the corrective action specified by the department.

117860 - Department Becomes Enforcement Agency
If the department withdraws its designation of a local enforcement agency, the department shall become the enforcement agency within the jurisdiction of the local enforcement agency.

117870 - Department Identifies Significant Violations
If the department identifies significant violations of minimum requirements that were not identified and resolved through previous inspections by the local enforcement agency, the department shall do all of the following:

(a) Conduct a performance review of the agency within 120 days.

(b) Prepare a written performance report within 60 days of the review.

(c) Require the submission of a plan of correction by the agency within 90 days of receiving the report.

117875 - Withdrawal
The department shall withdraw a local enforcement agency's designation pursuant to Section 117860 if it determines that the enforcement agency has failed to submit an adequate plan of correction or has failed to implement the plan.

117880 - Fees
If the department becomes the enforcement agency, it may charge the fees specified in this part.

117885 - Fund
(a) There is in the State Treasury the Medical Waste Management Fund, that shall be administered by the director. Money deposited in the fund shall be available to the department, upon appropriation by the Legislature, for the purposes of this part.

(b) In addition to any other funds transferred by the Legislature to the Medical Waste Management Fund, the following shall be deposited in the fund:

(1) Fees, penalties, interest earned, and fines collected by, or on behalf of, the department pursuant to this part.

(2) Funds granted by the federal government for purposes of carrying out this part.

(c) This section shall become operative on July 1, 1993.

117890 - Large Quantity Generator (LQG) Registration
No large quantity generator shall generate medical waste unless the large quantity generator is registered with the enforcement agency pursuant to this part.

117895 - Small Quantity Generator (SQG) Registration
A small quantity generator that treats medical waste onsite by steam sterilization, incineration, or microwave technology shall register with the enforcement agency pursuant to this part.

117900 - Medical Waste Hauler Registration
No person shall haul medical waste unless the person meets either of the following requirements:

(a) The person is registered pursuant to Article 6 (commencing with Section 25160) and Article 6.5 (commencing with Section 25167.1) of Chapter 6.5 of Division 20 and Chapter 30 (commencing with Section 66001) of Division 4 of Title 22 of the California Code of Regulations.

(b) The person has an approved limited-quantity exemption granted pursuant to Section 118030.

117903 - Treat Medical Waste
No person shall treat medical waste unless the person is permitted by the enforcement agency as required by this part or unless the treatment is performed by a medical waste generator and is a treatment method approved pursuant to subdivision (d) of Section 118215.

117904 - Consolidation
(a) In addition to the consolidation points authorized pursuant to Section 118147, the enforcement agency may approve a location as a point of consolidation for the collection of home-generated sharps waste, which, after collection, shall be transported and treated as medical waste.

(b) A consolidation location approved pursuant to this section shall be known as a “home-generated sharps consolidation point.”

(c) A home-generated sharps consolidation point is not subject to the requirements of Chapter 9 (commencing with Section 118275), to the permit or registration requirements of this part, or to any permit or registration fees, with regard to the activity of consolidating home-generated sharps waste pursuant to this section.

(d) A home-generated sharps consolidation point shall comply with all of the following requirements:

(1) All sharps waste shall be placed in sharps containers.

(2) Sharps containers ready for disposal shall not be held for more than seven days without the written approval of the enforcement agency.

(e) An operator of a home-generated sharps consolidation point approved pursuant to this section shall not be considered the generator of that waste.

(f) The medical waste treatment facility which treats the sharps waste subject to this section shall maintain the tracking documents required by Sections 118040 and 118165 with regard to that sharps waste.

117905 - Offsite Treatment
The department is the enforcement agency for offsite treatment facilities.

117908 - Common Storage Facility
The accumulated medical waste of more than one medical waste generator shall not be stored in a common storage facility unless that facility is registered with the enforcement agency.

117910 - Technical Assistance & Guidance
The department shall provide ongoing technical assistance and guidance to local enforcement agencies to assist them in their decision making processes. This assistance shall include, but is not limited to, providing all of the following:

(a) Technical studies and reports.

(b) Copies of innovative facility operation plans.

(c) Investigative findings and analysis of new waste management practices and procedures.

Chapter 4 - Small Quantity Generator Requirements

117915 - Containment and Storage
Containment and storage of medical waste shall be in accordance with Chapter 9 (commencing with Section 118275).

117918 - Treatment
Treatment of medical waste shall be in accordance with Chapter 8 (commencing with Section 118215).

117920 - Registration
The fee schedule specified in Section 117923 shall be for the issuance of medical waste registrations and for conducting inspections pursuant to this chapter when the department

serves as the enforcement agency for small quantity generators. This fee schedule shall be adjusted annually in accordance with Section 100425. On or before January 1, 1993, the department may adjust by regulation the fees specified in Section 117923 to reflect the actual costs of implementing this chapter. Local enforcement agencies shall set fees that shall be sufficient to cover their costs in implementing this part with regard to small quantity generators required to be registered pursuant to Section 117925.

117923 - Fees

(a) The registration and inspection fee for small quantity generators using onsite treatment, including an autoclave, incinerator, or microwave technology, to treat medical waste is one hundred dollars ($100), that shall be paid once every two years.

(b) The annual permit fee for a common storage facility permitted pursuant to Section 117928 is the amount specified in the following schedule:

(1) For storage facilities serving 10 or fewer generators, the permit fee is one hundred dollars ($100).

(2) For storage facilities serving 11 or more generators, but not more than 50 generators, the permit fee is two hundred fifty dollars ($250).

(3) For storage facilities serving more than 50 generators, the permit fee is five hundred dollars ($500).

117924 - Collect Fees

(a) When the department is the enforcement agency, the department shall impose and cause the collection of an annual medical waste generator fee in an amount not to exceed twenty-five dollars ($25) on small quantity generators of medical waste, except for those small quantity generators that are required to register pursuant to Section 117925 and those generators generating only biohazardous waste as defined in subdivision (g) of Section 117635. Nothing in this part shall prevent the department from contracting with entities other than the department for these fee collection activities or from entering into agreements with medical waste transporters or providers of medical waste mail-back systems for the collection of these fees, if the department deter-mines that such a fee collection arrangement would be cost-effective.

(b) If the department determines to enter into a contract with a medical waste transporter or provider of medical waste mail-back systems for the collection of the fees, the department shall do all of the following:

(1) Establish that not more than 5 percent of the fees collected may be recovered by the medical waste transporter or provider of medical waste mail-back systems as administrative costs for the collection of those fees.

(2) Establish that the administrative costs for the collection of the fees shall be the same for all medical waste transporters and providers of medical waste mail-back systems.

(3) Prohibit any medical waste transporter or provider of medical waste mail-back systems from waiving the generator fee without the written approval of the department and only if the medical waste generator has made a written request for the waiver.

(4) Require the medical waste transporter or provider of medical waste mail-back systems to report the fees collected pursuant to subdivision (a) to the department.

(5) Prohibit the medical waste transporter or provider of medical waste mail-back systems from assuming the role of the department as an enforcement agent for purposes of collecting the medical waste generator fees.

(6) Require medical waste transporters or providers of medical waste mail-back systems to include the following language in at least 12-point type on their invoices to medical waste generators. “Pursuant to Section 117924 of the California Health and Safety Code, the State Department of Health Services has contracted with us to collect your annual medical waste generator fee. The department may offset our costs of collection and administration in an amount that may not exceed 5 percent of the fee collected. We may not waive the fee without written approval of the department, and only if you have made a written request for the waiver.”

117925 - Onsite Treatment

(a) Each small quantity generator using onsite steam sterilization, incineration, or microwave technology to treat medical waste shall register with the enforcement agency. Small quantity generators owning or operating a medical waste treatment facility shall also apply for a permit for that treatment facility pursuant to Chapter 7 (commencing with Section 118130).

(b) Small quantity generators using onsite treatment, as specified in subdivision (a), that operate as a business in the same building, or that are associated with a group practice in the same building, may register as one generator.

(c) Small quantity generators using onsite treatment, as specified in subdivision (a), as specified in subdivision (b), operating in different buildings on the same or adjacent property, or as approved by the enforcement agency, may register as one generator.

(d) “Adjacent,” for purposes of subdivision (c), means real property within 400 yards from the property boundary of the primary registration site.

117928 - Common Storage Facility

(a) Any common storage facility for the collection of medical waste produced by small quantity generators operating independently, but sharing common storage facilities, shall have a permit issued by the enforcement agency.

(b) A permit for any common storage facility specified in subdivision (a) may be obtained by any one of the following:

(1) A provider of health care as defined in subdivision (d) of Section 56.05 of the Civil Code.

(2) The registered hazardous waste transporter.

(3) The property owner.

(4) The property management firm responsible for providing tenant services to the medical waste generators.

117930 - Treat Onsite

Small quantity generators that treat waste onsite, pursuant to subdivision (a) of Section 117925, shall register with the enforcement agency prior to the commencement of treatment.

117933 - Common Storage Facility Permit

Common storage facilities subject to Section 117928 shall obtain a permit from the enforcement agency on or before April 1, 1991, where the storage of medical waste in the common storage facility began prior to that date. In those cases where the storage of medical waste begins after April 1, 1991, permits shall be obtained pursuant to this chapter prior to commencement of storage of medical waste in the common storage facility.

117935 - Medical Waste Management Plan

Any small quantity generator required to register with the enforcement agency pursuant to Section 117930 shall file with the enforcement agency a medical waste management plan, on forms prescribed by the enforcement agency containing, but not limited to, all of the following:

(a) The name of the person.

(b) The business address of the person.

(c) The type of business.

(d) The types, and the estimated average monthly quantity, of medical waste generated.

(e) The type of treatment used onsite.

(f) The name and business address of the registered hazardous waste hauler used by the generator for backup treatment and disposal, for waste when the onsite treatment

method is not appropriate due to the hazardous or radioactive characteristics of the waste, or the name of the registered hazardous waste hauler used by the generator to have untreated medical waste removed for treatment and disposal.

(g) A statement indicating that the generator is hauling the medical waste generated in his or her business pursuant to Section 118030 and the name and any business address of the treatment and disposal facilities to which the waste is being hauled, if applicable.

(h) The name and business address of the registered hazardous waste hauler service provided by the building management to which the building tenants may subscribe or are required by the building management to subscribe and the name and business address of the treatment and disposal facilities used, if applicable.

(i) A statement certifying that the information provided is complete and accurate.

117938 - Biennial Inspection

(a) Small quantity generators using onsite steam sterilization, incineration, or microwave technology to treat medical waste are subject to biennial inspection of that onsite treatment facility by the enforcement agency and may be subject to the permitting requirements for onsite medical waste treatment facilities as determined by the enforcement agency.

(b) The inspection and permitting requirements of subdivision (a) do not apply when onsite steam sterilization is not used for the treatment or disposal of medical waste.

117940 - Medical Waste Generator Registration

(a) Each enforcement agency shall follow procedures consistent with this chapter in registering medical waste generators.

(b) Each medical waste generator registration issued by the enforcement agency shall be valid for two years.

(c) An application for renewal of the registration shall be filed with the enforcement agency on or before the expiration date.

(d) Generators shall submit within 30 days an updated application form when any of the information specified in subdivisions (a) to (i), inclusive, of Section 117935 changes.

117943 - Treatment and Tracking Records

A medical waste generator required to register pursuant to this chapter shall maintain individual treatment, and tracking records, if applicable, for three years, or for the period specified in the regulations, and shall report or submit to the enforcement agency, upon request, both of the following:

(a) Treatment operating records.

(b) An emergency action plan complying with regulations adopted by the department.

117945 - Information Documentation and Transportation Records
Small quantity generators who are not required to register pursuant to this chapter shall maintain on file in their office all of following:

(a) An Information document stating how the generator contains, stores, treats, and disposes of any medical waste generated through any act or process of the generator.

(b) Records of any medical waste transported offsite for treatment and disposal, including the quantity of waste transported, the date transported, and the name of the registered hazardous waste hauler or individual hauling the waste pursuant to Section 118030. The small quantity generator shall maintain these records for not less than two years.

Chapter 5 - Large Quantity Generator Requirements

117950 - Registration

(a) Each large quantity generator, except as specified in subdivisions (b) and (c), shall register with the enforcement agency. Large quantity generators owning or operating a medical waste treatment facility shall also apply for a permit for that treatment facility pursuant to Chapter 7 commencing with Section 118130).

(b) Large quantity generators operating as a business in the same building, or that are associated with a group practice in the same building, may register as one generator.

(c) Large quantity generators as specified in subdivision (a), operating in different buildings on the same or adjacent property, or as approved by the enforcement agency, may register as one generator.

(d) “Adjacent,” for purposes of subdivision (c), means real property within 400 yards from the property boundary of the primary registration site.

117955 - Registration Dates
Large quantity generators subject to Section 117950 shall register with the enforcement agency on or before April 1, 1991, if the generation of medical waste began prior to that date. In those cases where the generation of medical waste begins after April 1, 1991, registration shall be completed pursuant to this chapter prior to commencement of the generation of medical waste.

117960 - Medical Waste Management Plan
Any large quantity generator required to register with the enforcement agency pursuant to Section 117950 shall file with the enforcement agency a medical waste management plan, on forms prescribed by the enforcement agency containing, but not limited to, all of the following:

(a) The name of the person.

(b) The business address of the person.

(c) The type of business.

(d) The types, and the estimated average monthly quantity, of medical waste generated.

(e) The type of treatment used onsite, if applicable. For generators with onsite medical waste treatment facilities, including incinerators or steam sterilizers or other treatment facilities as determined by the enforcement agency, the treatment capacity of the onsite treatment facility.

(f) The name and business address of the registered hazardous waste hauler used by the generator to have untreated medical waste removed for treatment, if applicable.

(g) The name and business address of the registered hazardous waste hauler service provided by the building management to which the building tenants may subscribe or are required by the building management to subscribe, if applicable.

(h) The name and business address of the offsite medical waste treatment facility to which the medical waste is being hauled, if applicable.

(i) An emergency action plan complying with regulations adopted by the department.

(j) A statement certifying that the information provided is complete and accurate.

117965 - Annual Inspection
Large quantity generators shall be subject to at least annual inspection by the enforcement agency.

117970 - Medical Waste Generator Registration

(a) Each enforcement agency shall follow procedures consistent with this chapter in registering medical waste generators.

(b) Each medical waste registration issued by the enforcement agency shall be valid for one year.

(c) An application for renewal of the registration shall be filed with the enforcement agency not less than 90 days prior to the expiration date. Failure to meet this requirement shall result in an assessment of a late fee.

(d) Generators shall submit within 30 days an updated application form when any of the information specified in subdivisions (a) to (j), inclusive, of Section 117960 changes.

117971 – Inspection and Enforcement Cost Recovery
In addition to the fees collected pursuant to Section 117995, the department, in the implementation of this part, shall recover its actual costs for services related to large quantity medical waste generator followup inspections and enforcement activities necessary to ensure compliance with this part. In no event shall the department charge more than the actual costs incurred by the department.

117975 - Treatment and tracking Records
A medical waste generator required to register pursuant to this chapter shall maintain individual treatment, and tracking records, if medical waste is removed from the generator's site for treatment, for three years or for the period specified in the regulations.

117980 - Containment and Storage
Containment and storage of medical waste shall be in accordance with Chapter 9 (commencing with Section 118275).

117985 - Treatment
Treatment of medical waste shall be in accordance with Chapter 8 (commencing with Section 118215).

117990 - Fees
The fee schedule specified in Section 117995 shall be for the issuance of medical waste registrations and onsite medical waste treatment facility permits when the department serves as the enforcement agency for large quantity generators. This fee schedule shall be adjusted annually in accordance with Section 100425. On or before January 1, 1993, the department may adjust by regulation the fees specified in Section 117995 to reflect the actual costs of implementing this chapter. Local enforcement agencies shall set fees that shall be sufficient to cover their costs in implementing this part with regard to large quantity generators.

117995 - Collect Fees
The registration and annual permit fee for large quantity generators shall be set in following amounts:

(a)

(1) A general acute care hospital, as defined in subdivision (a) of Section 1250, that has one or more beds, but not more than 99 beds, shall pay six hundred dollars ($600), a facility with 100 or more beds, but not more than 199 beds, shall pay eight hundred sixty dollars ($860), a facility with 200 or more beds, but not more than 250 beds shall pay one thousand one hundred dollars ($1,100), and a facility with 251 or more beds shall pay one thousand four hundred dollars ($1,400).

(2) In addition to the fees specified in paragraph (1), a general acute care hospital which is providing onsite treatment of medical waste shall pay an annual medical waste treatment facility inspection and permit fee of three hundred dollars ($300), if the facility has one or more beds but not more than 99 beds, five hundred dollars ($500), if the facility has 100 or more beds but not more than 250 beds, and one thousand dollars ($1,000), if the facility has 251 or more beds.

(b) A specialty clinic, providing surgical, dialysis, or rehabilitation services, as defined in subdivision (b) of Section 1204, shall pay three hundred fifty dollars ($350).

(c) A skilled nursing facility, as defined in subdivision (c) of Section 1250, that has one or more beds, but not more than 99 beds shall pay two hundred seventy-five dollars ($275), a facility with 100 or more beds, but not more than 199 beds shall pay three hundred fifty dollars ($350), and a facility with 200 or more beds shall pay four hundred dollars ($400).

(d) An acute psychiatric hospital, as defined in subdivision (b) of Section 1250, shall pay two hundred dollars ($200).

(e) An intermediate care facility, as defined in subdivision (d) of Section 1250, shall pay three hundred dollars ($300).

(f) A primary care clinic, as defined in Section 1200.1, shall pay three hundred fifty dollars ($350).

(g) A licensed clinical laboratory, as defined in paragraph (3) of subdivision (a) of Section 1206 of the Business and Professions Code, shall pay two hundred dollars ($200).

(h) A health care service plan facility, as defined in subdivision (f) of Section 1345, shall pay three hundred fifty dollars ($350).

(i) A veterinary clinic or veterinary hospital shall pay two hundred dollars ($200).

(j) A large quantity generator medical office shall pay two hundred dollars ($200).

(k) In addition to the fees specified in subdivisions (b) to (j), inclusive, a large quantity generator of medical waste which is providing onsite treatment of medical waste shall pay an annual medical waste treatment facility inspection and permit fee of three hundred dollars ($300).

(l) The department may collect annual fees and issue permits on a biennial basis.

Chapter 6 - Medical Waste Haulers

118000 - Transportation of Medical Waste

(a) Except as otherwise exempted pursuant to Section 118030, all medical waste transported to an offsite medical waste treatment facility shall be transported in accordance with this chapter by a registered hazardous waste transporter issued a registration certificate pursuant to Chapter 6 (commencing with Section 118000) and Article 6.5 (commencing with Section 25167.1) of Chapter 6.5 of Division 20. A hazardous waste transporter transporting medical waste shall have a copy of the

transporter's valid hazardous waste transporter registration certificate in the transporter's possession while transporting medical waste. The transporter shall show the certificate, upon demand, to any enforcement agency personnel or authorized employee of the Department of the California Highway Patrol.

(b) Except for small quantity generators transporting medical waste pursuant to Section 118030, medical waste shall be transported to a permitted offsite medical waste treatment facility or a permitted transfer station in leak-resistant and fully enclosed rigid secondary containers that are then loaded into an enclosed cargo body.

(c) A person shall not transport medical waste in the same vehicle with other waste unless the medical waste is separately contained in rigid containers or kept separate by barriers from other waste, or unless all of the waste is to be handled as medical waste in accordance with this part.

(d) Medical waste shall only be transported to a permitted medical waste treatment facility or to a transfer station or another registered generator for the purpose of consolidation before treatment and disposal, pursuant to this part.

(e) Facilities for the transfer of medical waste shall be annually inspected and issued permits in accordance with the regulations adopted pursuant to this part.

(f) Any persons manually loading or unloading containers of medical waste shall be provided by their employer at the beginning of each shift with, and shall be required to wear, clean and protective gloves and coveralls, changeable lab coats, or other protective clothing. The department may require, by regulation, other protective devices appropriate to the type of medical waste being handled.

118005 - Transportation of Trauma Scene Waste

(a) Notwithstanding any other provision of this chapter, trauma scene waste may be transported by a trauma scene management practitioner registered pursuant to Section 118321.1.

(b) The exemption specified in Section 118030 for limited quantity hauling shall not apply to the transportation of trauma scene waste.

(c)

(1) A business that has contracted with, or that currently employs, a person whose services may include the cleanup of trauma scene waste in the manner specified in Section 118321.6 may apply, on forms provided by the department, to the department for an exemption from the requirements of Section 118321.1. This exemption shall be known as an incidental trauma scene waste hauling permit, and shall authorize the person to transport, by herself or himself, trauma scene waste that is collected in the manner specified in Section 118321.6 to a permitted medical waste transfer station or a permitted medical waste offsite treatment facility, or to a

health care facility, previously designated by mutual agreement, for consolidation with the facility's existing medical waste stream.

(2) An application for an incidental trauma scene waste hauling permit shall be accompanied by a fee of twenty-five dollars ($25) and the incidental trauma scene waste hauling permit shall be valid for one cleanup event. The application shall identify any person who will transport trauma scene waste for the business pursuant to paragraph (1).

118025 - Registration
All medical waste shall be hauled by either a registered hazardous waste hauler or by a person with an approved limited-quantity exemption granted pursuant to Section 118030.

118027 - Unknowingly Transports
Any person who is authorized to collect solid waste, as defined in Section 40191 of the Public Resources Code, who unknowingly transports medical waste to a solid waste facility, as defined in Section 40194 of the Public Resources Code, incidental to the collection of solid waste is exempt from this chapter with regard to that waste.

118029 - Information Requirements
(a) On or before September 1, 1993, and each year thereafter on or before July 1, a registered hazardous waste transporter which transports medical waste shall so notify the department, and provide the following information:

(1) Business name, address, and telephone number.

(2) Name of owner, operator, and contact person.

(3) Hazardous waste transporter registration number.

(4) Vehicle manufacturer name, vehicle model year, vehicle identification number, and the license plate number of each vehicle transporting medical waste.

(b) For transporters that begin transporting medical waste after September 1, 1993, notification to the department, and provision of the information required by subdivision (a) shall be provided to the department prior to transporting medical waste.

(c) On or before September 1, 1993, each registered hazardous waste transporter, and each provider of medical waste mail back systems, as defined in subdivision (b) of Section 118245, shall provide to the department a list of all medical waste generators serviced by that person during the previous 12 months. That list shall include the business name, business address, mailing address, telephone number, and other information as required by the department to collect annual fees pursuant to Section 117924. When the transportation of registered hazardous waste by a medical waste transporter or the provision of a medical waste mail back system begins after September 1, 1993, the initial list shall be provided to the department within 10 days of the close of

the earliest calendar quarter ending September 30, December 31, March 31, or June 30, or as otherwise required by the department.

(d) Subsequent to providing the initial list pursuant to subdivision(c), registered hazardous waste transporters and providers of medical waste mail back systems shall submit to the department any changes made to the most recent list every three months, within 10 days of the close of the calendar quarters ending September 30, December 31, March 31, and June 30, or as otherwise required by the department.

118030 - Limited Quantity Hauling Exemption (LQHE)

(a) A medical waste generator or parent organization that employs health care professionals who generate medical waste may apply to the enforcement agency for a limited-quantity hauling exemption, if the generator or health care professional meets all of the following requirements:

(1) The generator or health care professional generates less than 20 pounds of medical waste per week, transports less than 20 pounds of medical waste at any one time, and the generator or parent organization has on file one of the following:

(A) If the generator or parent organization is a small quantity generator required to register pursuant to Chapter 4 (commencing with Section 117915), a medical waste management plan prepared pursuant to Section 117935.

(B) If the generator or parent organization is a small quantity generator not required to register pursuant to Chapter 4 (commencing with Section 117915), the information document maintained pursuant to subdivision (a) of Section 117945.

(C) If the parent organization is a large quantity generator, a medical waste management plan prepared pursuant to Section 117960.

(2) The generator or health care professional who generated the medical waste transports the medical waste himself or herself, or directs a member of his or her staff to transport the medical waste, to a permitted medical waste treatment facility, a transfer station, a parent organization, or another health care facility for the purpose of consolidation before treatment and disposal.

(3) Except as provided in paragraph (4), the generator maintains a tracking document, as specified in Section 118040.

(4)

(A) Notwithstanding paragraph (3), if a health care professional who generates medical waste returns the medical waste to the parent organization, a single-page form or multiple entry log may be substituted for the tracking document, if the form or log contains all of the following information:

(i) The name of the person transporting the medical waste.

(ii) The number of containers and type of medical waste. This subparagraph does not require any generator to maintain a separate medical waste container for every patient or to maintain records as to the specified source of the medical waste in any container.

(iii) The date that the medical waste was returned.

(B) This paragraph does not prohibit the use of a single document to verify the return of more than one container over a period of time, if the form or log is maintained in the files of the parent organization once the page is completed.

(b) The limited-quantity hauling exemption authorized by this section is valid for a period of one year.

(c) An application for an initial or a renewal of a limited-quantity hauling exemption shall be accompanied by a fee of twenty-five dollars ($25). The application shall identify each person who will transport medical waste for the transporter. If the generator or parent organization identifies more than four persons who will be transporting medical waste, the generator or parent organization shall pay an additional fee of five dollars ($5) for each person, up to a maximum additional fee of twenty-five dollars ($25).

118035 - Transfer of Medical Waste

For the purpose of transferring medical waste prior to reaching a permitted medical waste treatment facility, medical waste shall not be unloaded, reloaded, or transferred to another vehicle at any location, except at a permitted medical waste transfer station or in the case of a vehicle breakdown or other emergency.

118040 - Tracking Records

(a) Except with regard to sharps waste consolidated by a home-generated sharps consolidation point approved pursuant to Section 117904, a hazardous waste transporter or generator transporting medical waste shall maintain a completed tracking document of all medical waste removed for treatment or disposal. A hazardous waste transporter or generator who transports medical waste to a facility, other than the final medical waste treatment facility, shall also maintain tracking documents which show the name, address, and telephone number of the medical waste generator, for purposes of tracking the generator of medical waste when the waste is transported to the final medical waste treatment facility. At the time that the medical waste is received by a hazardous waste transporter, the transporter shall provide the medical waste generator with a copy of the tracking document for the generator's medical waste records. The transporter or generator transporting medical waste shall maintain its copy of the tracking document for three years.

(b) The tracking document shall include, but not be limited to, all of the following information:

(1) The name, address, telephone number, and registration number of the transporter, unless transported pursuant to Section 118030.

(2) The type and quantity of medical waste transported.

(3) The name, address, and telephone number of the generator.

(4) The name, address, telephone number, permit number, and the signature of an authorized representative of the permitted facility receiving the medical waste.

(5) The date that the medical waste is collected or removed from the generator's facility, the date that the medical waste is received by the transfer station, the registered large quantity generator, or point of consolidation, if applicable, and the date that the medical waste is received by the treatment facility.

(c) Any hazardous waste transporter or generator transporting medical waste in a vehicle shall have a tracking document in his or her possession while transporting the medical waste. The tracking document shall be shown upon demand to any enforcement agency personnel or officer of the Department of the California Highway Patrol. If the medical waste is transported by rail, vessel, or air, the railroad corporation, vessel operator, or airline shall enter on the shipping papers any information concerning the medical waste that the enforcement agency may require.

(d) A hazardous waste transporter or a generator transporting medical waste shall provide the facility receiving the medical waste with the original tracking document.

(e) Each hazardous waste transporter and each medical waste treatment facility shall provide data periodically and in a format as determined by the department.

(f) Medical waste transported out of state shall be consigned to a permitted medical waste treatment facility in the receiving state. If there is no permitted medical waste treatment facility in the receiving state or if the medical waste is crossing an international border, the medical waste shall be treated in accordance with Chapter 8 (commencing with Section 118215) prior to being transported out of the state.

118045 - Transfer Station Permit

(a) The department shall charge an application fee for a permit for a transfer station equal to one hundred dollars ($100) for each hour which the department spends on processing the application, but not more than ten thousand dollars ($10,000), or as provided in the regulations adopted by the department.

(b) In addition to the fee specified in subdivision (a), the annual permit fee for a transfer station issued a permit pursuant to subdivision (e) of Section 118000 is two thousand dollars ($2,000), or as provided in the regulations adopted pursuant to this part.

Chapter 7 - Medical Waste Treatment Facility Permits

118130 - Permits
All offsite medical waste treatment facilities and transfer stations shall be permitted and inspected by the department. All onsite medical waste treatment facilities shall be permitted and inspected by the enforcement agency.

118135 - Permit Dates
On or before April 1, 1991, each person operating a medical waste treatment facility shall obtain a permit pursuant to this chapter from the department. If the medical waste treatment facility begins operation after April 1, 1991, the permit shall be obtained pursuant to this article prior to commencement of the treatment facility's operation.

118140 - Accepting Medical Waste
A health care facility accepting medical waste for treatment from the physicians and surgeons who are on the staff of the facility and who are small quantity generators shall be classified as an onsite treatment facility and shall be permitted and inspected by the enforcement agency.

118145 - Adjacent Small Quantity Generators
A health care facility accepting medical waste for treatment from small quantity generators that are adjacent to the facility shall be classified as an onsite treatment facility and shall be permitted and inspected by the enforcement agency.

118147 - Consolidation
Notwithstanding any other provision of this chapter, a registered medical waste generator, which is a facility specified in subdivisions (a) and (b) of Section 117705, may accept home-generated sharps waste, to be consolidated with the facility's medical waste stream, subject to all of the following conditions:

(a) The generator of the sharps waste, a member of the generator' s family, or a person authorized by the enforcement agency transports the sharps waste to the medical waste generator's facility.

(b) The sharps waste is accepted at a central location at the medical waste generator's facility.

(c) A reference to, and a description of, the actions taken pursuant to this section are included in the facility's medical waste management plan adopted pursuant to Section 117960.

118150 - Compliance
(a) Each enforcement agency shall follow procedures that are consistent with this chapter, and the regulations adopted pursuant to this chapter, when issuing medical waste permits.

(b) Each person operating a medical waste treatment facility pursuant to a hazardous waste facilities permit or grant of interim status pursuant to Article 9 (commencing with Section 25200) of Chapter 6.5 of Division 20, as of January 1, 1991, shall be considered to have the medical waste permit required by this article until January 1, 1992, unless the enforcement agency with jurisdiction over its activities has taken final action prior to January 1, 1992, on an application for a permit pursuant to this article.

(c) Each medical waste facility subject to subdivision (b) shall operate in accordance with the standards and procedures contained in this chapter, and on and after January 1, 1991, is not subject to the standards and procedures contained in Chapter 6.5 (commencing with Section 25100) of Division 20.

118155 - Permits

Any person required to obtain a permit pursuant to this part shall file with the enforcement agency an application, on forms prescribed by the department, containing, but not limited to, all of the following:

(a) The name of the applicant.

(b) The business address of the applicant.

(c) The type of treatment provided, the treatment capacity of the facility, a characterization of the waste treated at this facility, and the estimated average monthly quantity of waste treated at the facility.

(d) A disclosure statement, as provided in Section 25112.5, except for onsite medical waste treatment facilities.

(e) Evidence satisfactory to the enforcement agency that the operator of the medical waste treatment facility has the ability to comply with this part and the regulations adopted pursuant to this part.

(f) Any other information required by the enforcement agency for the administration or enforcement of this part or the regulations adopted pursuant to this part.

118160 - Permit Requirements

(a) Prior to issuing or renewing a permit for an offsite medical waste treatment facility pursuant to Section 118130, the department shall review the compliance history of the applicant, under any local, state, or federal law or regulation governing the control of medical waste or pollution, including, but not limited to, the Clean Air Act (42 U.S.C. Sec. 7401 et seq.).

(b) The department shall, pursuant to this section, deny a permit, or specify additional permit conditions, to ensure compliance with applicable regulations, if the department determines that in the three-year period preceding the date of application the applicant

has violated laws or regulations identified in subdivision (a) at a facility owned or operated by the applicant, and the violations demonstrate a recurring pattern of noncompliance or pose, or have posed, a significant risk to public health and safety or to the environment.

(c) In addition to any other information required to be submitted for the permitting of a facility pursuant to Section 118130, an applicant who has owned or operated a facility regulated by the department shall provide a description of all violations described in subdivision (a), that occurred at any facility permitted and owned or operated by the applicant in the state in the three years prior to the date of application.

(d) In making the determination of whether to deny a permit or to specify additional permit conditions pursuant to subdivision (b), the department shall take both of the following into consideration:

(1) Whether a permit denial or permit condition is appropriate or necessary given the severity of the violation.

(2) Whether the violation has been corrected in a timely fashion.

118165 - Treatment Records

On and after April 1, 1991, all persons operating a medical waste treatment facility shall maintain individual records for a period of three years and shall report or submit to the enforcement agency upon request, all of the following information:

(a) The type of treatment facility and its capacity.

(b) All treatment facility operating records.

(c) Copies of the tracking documents for all medical waste it receives for treatment from offsite generators or from hazardous waste haulers.

118170 - Duration of Permit

(a) A medical waste permit issued by the enforcement agency to a medical waste treatment facility shall be valid for five years.

(b) An application for renewal of the permit shall be filed with the enforcement agency not less than 90 days prior to the expiration date. If a permittee fails to make a timely application for renewal, the medical waste permit shall expire on the expiration date.

118175 - Conditions for Granting Permit

(a) A medical waste permit may be renewed if the enforcement agency finds the permittee has been in substantial compliance with this part and the regulations adopted pursuant to this part during the preceding permitted period or that the permittee corrected previous violations in a timely manner.

(b) Upon approval of the enforcement agency, a permit may be transferred from one subsidiary to another subsidiary of the same corporation, from a parent corporation to one of its subsidiaries, or from a subsidiary to a parent corporation.

118180 - Permit Validity
A person required to obtain a medical waste permit shall, at all times, possess a valid permit for each facility in operation. A medical waste permit shall terminate prior to its expiration date if suspended or revoked pursuant to Section 118350 or, notwithstanding Section 118355, if either of the following occurs:

(a) The permittee sells or otherwise transfers the facility, except as specified in subdivision (b) of Section 118175.

(b) The permittee surrenders the permit to the enforcement agency because the permittee ceases operation.

118185 - Permit Procedures
The enforcement agency shall issue a medical waste permit upon evaluation, inspection, or records review of the applicant if the applicant is in substantial compliance with this part and the regulations adopted pursuant to this part and the applicant has corrected any previous violations. A decision to issue or not to issue the permit shall be made by the enforcement agency within 180 days of the time that the application is deemed complete, unless waived by the applicant.

118190 - Permit Conditions
When issuing, renewing, or revising any treatment facility permit, the enforcement agency may prohibit or condition the handling or treatment of medical waste to protect the public health and safety.

118195 - Denial of Permit
An enforcement agency shall inform an applicant for a medical waste permit, in writing, upon the denial of any application for the permit. Within 20 days after the enforcement agency mails the notice, the applicant may present a written petition for a hearing to the enforcement agency. Upon receipt by the enforcement agency of the petition in proper form, the petition shall be set for hearing. If the department is the enforcement agency, the proceedings shall commence with the filing of a statement of issues and shall be conducted in accordance with Chapter 5 (commencing with Section 11500) of Part 1 of Division 3 of Title 2 of the Government Code, and the department has all the powers granted to a department in that chapter. If the department is not the enforcement agency, the hearings shall be held in accordance with the ordinance adopting the medical waste management program.

118200 - Inspection
The enforcement agency shall evaluate, inspect, and review the records of medical waste treatment facilities for compliance with this part.

118205 - Fees
The fee schedule specified in Section 118210 shall cover the issuance of medical waste treatment facility permits and an inspection program, when the department serves as the enforcement agency. This fee schedule shall be adjusted annually in accordance with Section 100425. On or before January 1, 1993, the department may adjust by regulation the fees specified in Section 118210 to reflect the actual costs of implementing this chapter. Local enforcement agencies shall set fees that shall be sufficient to cover their costs in implementing this part with regard to large quantity generators.

118210 – Collect Fees

(a) The department shall charge an annual permit fee for an offsite medical waste treatment facility equal to either one hundred twenty-seven ten thousandths of a cent ($0.0127) for each pound of medical waste treated or twelve thousand dollars ($12,000), whichever is greater. The department may collect annual fees and issue permits on a biennial basis.

(b) The department shall charge an initial application fee for each type of treatment technology at an offsite medical waste treatment facility equal to one hundred dollars ($100) for each hour the department spends processing the application, but not more than fifty thousand dollars ($50,000), or as provided in the regulations adopted by the department.

Chapter 8 - Treatment

118215 - Methods

(a) Except as provided in subdivisions (b) and (c), a person generating or treating medical waste shall ensure that the medical waste is treated by one of the following methods, thereby rendering it solid waste, as defined in Section 40191 of the Public Resources Code, prior to disposal:

(1)

(A) Incineration at a permitted medical waste treatment facility in a controlled-air, multi-chamber incinerator, or other method of incineration approved by the department which provides complete combustion of the waste into carbonized or mineralized ash.

(B) Treatment with an alternative technology approved pursuant to paragraph (3), which, due to the extremely high temperatures of treatment in excess of 1300 degrees Fahrenheit, has received express approval from the department.

(2) Steam sterilization at a permitted medical waste treatment facility or by other sterilization, in accordance with all of the following operating procedures for steam sterilizers or other sterilization:

(A) Standard written operating procedures shall be established for biological indicators, or for other indicators of adequate sterilization approved by the department, for each steam sterilizer, including time, temperature, pressure, type of waste, type of container, closure on container, pattern of loading, water content, and maximum load quantity.

(B) Recording or indicating thermometers shall be checked during each complete cycle to ensure the attainment of 121* Centigrade (250* Fahrenheit) for at least one-half hour, depending on the quantity and density of the load, to achieve sterilization of the entire load. Thermometers shall be checked for calibration annually. Records of the calibration checks shall be maintained as part of the facility's files and records for a period of three years or for the period specified in the regulations.

(C) Heat-sensitive tape, or another method acceptable to the enforcement agency, shall be used on each biohazard bag or sharps container that is processed onsite to indicate the attainment of adequate sterilization conditions.

(D) The biological indicator Bacillus stearothermophilus, or other indicator of adequate sterilization as approved by the department, shall be placed at the center of a load processed under standard operating conditions at least monthly to confirm the attainment of adequate sterilization conditions.

(E) Records of the procedures specified in subparagraphs (A), (B), and (D) shall be maintained for a period of not less than three years.

(3)

(A) Other alternative medical waste treatment methods which are both of the following:

(i) Approved by the department.

(ii) Result in the destruction of pathogenic micro-organisms.

(B) Any alternative medical waste treatment method proposed to the department shall be evaluated by the department and either approved or rejected pursuant to the criteria specified in this subdivision.

(b) A medical waste may be discharged to a public sewage system without treatment if it is not a biohazardous waste of a type described in either subdivision (a) or (b) of Section 117635, it is liquid or semiliquid, and its discharge is consistent with waste discharge requirements placed on the public sewage system by the California regional water quality control board with jurisdiction.

(c)

(1) A medical waste that is a biohazardous waste of a type described in subdivision (a) of Section 117635 may be treated by a chemical disinfection if the medical waste is liquid or semi-liquid and the chemical disinfection method is recognized by the National Institutes of Health, the Centers for Disease Control and Prevention, or the American Biological Safety Association, and if the use of chemical disinfection as a treatment method is identified in the site's medical waste management plan.

(2) If the waste is not treated by chemical disinfection, in accordance with paragraph (1), the waste shall be treated by one of the methods specified in subdivision (a).

(3) Following treatment by chemical disinfection, the medical waste may be discharged to the public sewage system if the discharge is consistent with waste discharge requirements placed on the public sewage system by the California regional water control board, and the discharge is in compliance with the requirements imposed by the owner or operator of the public sewage system. If the chemical disinfection of the medical waste causes the waste to become a hazardous waste, the waste shall be managed in accordance with the requirements of Chapter 6.5 (commencing with Section 25100) of Division 20.

118220 - Anatomical Parts

Recognizable human anatomical parts, with the exception of teeth not deemed infectious by the attending physician and surgeon or dentist, shall be disposed of by interment or in accordance with paragraph (1) or paragraph (3) of subdivision (a) of Section 118215, unless otherwise hazardous.

118222 - Waste Requiring Specified Methods

(a) Biohazardous waste that meets the conditions of subdivision (f) of Section 117635 shall be treated pursuant to paragraph (1) or paragraph (3) of subdivision (a) of Section 118215 prior to disposal.

(b) Biohazardous waste that meets the conditions specified in subdivision (g) of Section 117635 shall be treated pursuant to paragraph (1) or paragraph (3) of subdivision (a) of Section 118215 prior to disposal.

118225 - Sharps Waste

(a) Sharps waste shall be rendered noninfectious prior to disposal by one of the following methods:

(1) Incineration.

(2) Steam sterilization.

(3) Disinfection using an alternative treatment method approved by the department.

(b) Sharps waste rendered noninfectious pursuant to this section may be disposed of as solid waste if the waste is not otherwise hazardous.

(c) Onsite medical waste treatment facilities treating sharps waste pursuant to paragraph (2) or (3) of subdivision (a) shall ensure that, prior to disposal, the treated sharps waste is destroyed or that public access to the treated sharps waste is prevented.

118230 - Incineration
An operator of a hazardous waste incinerator permitted pursuant to Section 25200 may also accept medical waste for incineration.

118235 - Emergency Action Plan
Each medical waste treatment facility issued a medical waste permit shall provide the enforcement agency with an emergency action plan that the facility shall follow to ensure the proper disposal of medical waste in the event of equipment breakdowns, natural disasters, or other occurrences.

118240 - Animal Carcasses
Notwithstanding Section 9141of the Food and Agricultural Code, animals that die from infectious diseases shall be treated in accordance with Section 118215 if, in the opinion of the attending veterinarian or local health officer, the carcass presents a danger of infection to humans.

118245 - Fees for Alternative Treatment Technologies and Mail-Back Systems

(a) The department shall charge an application fee for evaluation of an alternative treatment technology pursuant to subdivision (d) of Section 118215 of two thousand five hundred dollars ($2,500) and shall charge an additional fee equal to one hundred dollars ($100) per hour for each hour which the department spends on processing the application, but not more than a total of five thousand dollars ($5,000), or as provided in the regulations adopted by the department.

(b) The department shall charge an application fee of one thousand dollars, ($1,000) for evaluation and approval of the use of a medical waste mail back system, which sends medical waste generated in this state to an out-of-state facility for treatment and disposal pursuant to subdivision (f) of Section 118040.

Chapter 9 - Containment and Storage

118275 - Medical Waste Segregation and Storage
To containerize or store medical waste, a person shall do all of the following:

(a) Medical waste shall be contained separately from other waste at the point of origin in the producing facility. Sharps containers may be placed in biohazard bags or in containers with biohazard bags.

(b) Biohazardous waste, except biohazardous waste as defined in subdivision (g) of Section 117635, shall be placed in a red biohazard bag conspicuously labeled with the words “Biohazardous Waste” or with the international biohazard symbol and the word “BIOHAZARD.”

(c) Sharps waste shall be contained in a sharps container pursuant to Section 118285.

(d)

(1) Biohazardous waste, which meets the conditions of subdivision (f) of Section 117635 because it is contaminated through contact with, or having previously contained, chemo-therapeutic agents, shall be segregated for storage, and, when placed in a secondary container, that container shall be labeled with the words “Chemotherapy Waste”, “CHEMO”, or other label approved by the department on the lid and on the sides, so as to be visible from any lateral direction, to ensure treatment of the biohazardous waste pursuant to Section 118222.

(2) Biohazardous waste, which meets the conditions of subdivision (f) of Section 117635 because it is comprised of human surgery specimens or tissues which have been fixed in formaldehyde or other fixatives, shall be segregated for storage and, when placed in a secondary container, that container shall be labeled with the words “Pathology Waste”, “ PATH”, or other label approved by the department on the lid and on the sides, so as to be visible from any lateral direction, to ensure treatment of the biohazardous waste pursuant to Section 118222.

(e) Sharps waste, which meets the conditions of subdivision (f) of Section 117635, shall be placed in sharps containers labeled in accordance with the industry standard with the words “Chemo-therapy Waste”, “Chemo”, or other label approved by the department, and segregated to ensure treatment of the sharps waste pursuant to Section 118222.

(f) Biohazardous waste, which are recognizable human anatomical parts, as specified in Section 118220, shall be segregated for storage and, when placed in a secondary container for treatment as pathology waste, that container shall be labeled with the words “Pathology Waste”, “PATH”, or other label approved by the department on the lid and on the sides, so as to be visible from any lateral direction, to ensure treatment of the biohazardous waste pursuant to Section 118222.

(g) Biohazardous waste, which meets the conditions specified in subdivision (g) of Section 117635, shall be segregated for storage and, when placed in a container or secondary container, that container shall be labeled with the words “INCINERATION ONLY” or other label approved by the department on the lid and on the sides, so as to be visible from any lateral direction, to ensure treatment of the biohazardous waste pursuant to Section 118222.

(h) A person may consolidate into a common container all of the wastes in this section provided that the consolidated waste is treated by an extremely high heat technology

approved pursuant to subparagraph (B) of paragraph (1) of subdivision (a) of Section 118215. The container shall be labeled with the biohazardous waste symbol and the words "HIGH HEAT ONLY" or other label approved by the department on the lid and on the sides, so as to be visible from any lateral direction, to ensure treatment of the biohazardous waste pursuant to this subdivision.

118280 - Containment and Storage

To containerize biohazard bags, a person shall do all of the following:

(a) The bags shall be tied to prevent leakage or expulsion of contents during all future storage, handling, or transport.

(b) Biohazardous waste, except biohazardous waste as defined in subdivision (g) of Section 117635, shall be bagged in accordance with subdivision (b) of Section 118275 and placed for storage, handling, or transport in a rigid container which may be disposable, reusable, or recyclable. Containers shall be leak resistant, have tight-fitting covers, and be kept clean and in good repair. Containers may be recycled with the approval of the enforcement agency. Containers may be of any color and shall be labeled with the words “Biohazardous Waste” or with the international biohazard symbol and the word “BIOHAZARD” on the lid and on the sides so as to be visible from any lateral direction. Containers meeting the requirements specified in Section 66840 of Title 22 of the California Code of Regulations, as it read on December 31, 1990, may also be used until the replacement of the containers is necessary or existing stock has been depleted.

(c) Biohazardous waste shall not be removed from the biohazard bag until treatment as prescribed in Chapter 8 (commencing with Section 118215) is completed, except to eliminate a safety hazard, or by the enforcement officer in performance of an investigation pursuant to Section 117820. Biohazardous waste shall not be disposed of before being treated as prescribed in Chapter 8 (commencing with Section 118215).

(d)

(1) Except as provided in paragraph (5), a person generating biohazardous waste shall comply with the following requirements:

(A) If the person generates 20 or more pounds of biohazardous waste per month, the person shall not contain or store biohazardous or sharps waste above 0 degrees Centigrade (32 degrees Fahrenheit) at any onsite location for more than seven days without obtaining prior written approval of the enforcement agency.

(B) If a person generates less than 20 pounds of biohazardous waste per month, the person shall not contain or store biohazardous waste above 0 degrees Centigrade (32 degrees Fahrenheit) at any onsite location for more than 30 days.

(2) A person may store biohazardous or sharps waste at or below 0 degrees Centigrade (32 degrees Fahrenheit) at an onsite location for not more than 90 days without obtaining prior written approval of the enforcement agency.

(3) A person may store biohazardous or sharps waste at a permitted transfer station at or below 0 degrees Centigrade (32 degrees Fahrenheit) for not more than 30 days without obtaining prior written approval of the enforcement agency.

(4) A person shall not store biohazardous or sharps waste above 0 degrees Centigrade (32 degrees Fahrenheit) at any location or facility which is offsite from the generator for more than seven days before treatment.

(5) Notwithstanding paragraphs (1) to (4), inclusive, if the odor from biohazardous or sharps waste stored at a facility poses a nuisance, the enforcement agency may require more frequent removal.

(e) Waste that meets the definition of biohazardous waste in subdivision (g) of Section 117635 shall not be subject to the limitations on storage time prescribed in subdivision (d). A person may store that biohazardous waste at an onsite location for not longer than 90 days when the container is ready for disposal or, unless prior written approval from the enforcement agency or the department is obtained. The container shall be emptied at least once per year unless prior written approval from the enforcement agency or the department is obtained. A person may store that biohazardous waste at a permitted transfer station for not longer than 30 days without obtaining prior written approval from the enforcement agency or the department. A person shall not store that biohazardous waste at any location or facility that is offsite from the generator for more than 30 days before treatment.

(f) The containment and storage time for wastes consolidated in a common container pursuant to subdivision (h) of Section 118275 shall not exceed the storage time for any category of waste set forth in this section.

118285 - Sharps Waste

To containerize sharps waste, a person shall do all of the following:

(a) Place all sharps waste into a sharps container.

(b) Tape closed or tightly lid full sharps containers ready for disposal to preclude loss of contents.

(c) Store sharps containers ready for disposal for not more than thirty days without the written approval of the enforcement agency.

(d) Label sharps containers with the words “sharps waste” or with the international biohazard symbol and the word “BIOHAZARD”.

118286 – Management of Home-generated Sharps Waste

(a) On or after September 1, 2008, no person shall knowingly place home-generated sharps waste in any of the following containers:

(1) Any container used for the collection of solid waste, recyclable materials, or greenwaste.

(2) Any container used for the commercial collection of solid waste or recyclable materials from business establishments.

(3) Any roll-off container used for the collection of solid waste, construction, and demolition debris, greenwaste, or other recyclable materials.

(b) On or after September 1, 2008, home-generated sharps waste shall be transported only in a sharps container, or other containers approved by the enforcement agency, and shall only be managed at any of the following:

(1) A household hazardous waste facility pursuant to Section 25218.13.

(2) A "home-generated sharps consolidation point" as defined in subdivision (b) of Section 117904.

(3) A medical waste generator's facility pursuant to Section 118147.

(4) A facility through the use of a medical waste mail-back container approved by the department pursuant to subdivision (b) of Section 118245.

118290 - Common Storage Facility

Any small quantity generator who has properly containerized the medical waste according to the requirements of this article may store the waste in a permitted common storage facility.

118295 - Wash and Decontaminate Containers

A person shall thoroughly wash and decontaminate reusable rigid containers for medical waste by a method approved by the enforcement agency each time they are emptied, unless the surfaces of the containers have been completely protected from contamination by disposable liners, bags, or other devices removed with the waste. These containers shall be maintained in a clean and sanitary manner. Approved methods of decontamination include, but are not limited to, agitation to remove visible soil combined with one of the following procedures:

(a) Exposure to hot water of at least 82 degrees Centigrade (180 degrees Fahrenheit) for a minimum of 15 seconds.

(b) Exposure to chemical sanitizer by rinsing with, or immersion in, one of the following for a minimum of three minutes:

(1) Hypochlorite solution (500 ppm available chlorine).

(2) Phenolic solution (500 ppm active agent).

(3) Iodoform solution (100 ppm available iodine).

(4) Quaternary ammonium solution (400 ppm active agent).

118300 - Spill Decontamination
Any leak or spill of a medical waste by a medical waste generator, hazardous waste hauler, or treatment facility shall be decontaminated by procedures adopted by the department.

118305 - Solid Waste
A person shall not use reusable pails, drums, dumpsters, or bins used for medical waste for the containment of solid waste, or for other purposes, except after being decontaminated by the procedures specified in Section 118295 and removal of all medical waste labels.

118307 – Interim Storage Area
Medical waste that is stored in an area prior to transfer to the designated accumulation area, as defined in Section 118310, shall be stored in an area that is either locked or under direction supervision or surveillance. Intermediate storage areas shall be marked with the international biohazardous symbol or the signage described in Section 118310. These warning signs shall be readily legible from a distance of five feet.

118310 – Designated Accumulation Area
A designated accumulation area used for the storage of medical waste containers prior to transportation or treatment shall be secured so as to deny access to unauthorized persons and shall be marked with warning signs on, or adjacent to, the exterior of entry doors, gates, or lids. The storage area may be secured by use of locks on entry doors, gates, or receptacle lids. The wording of warning signs shall be in English, “CAUTION—BIOHAZARDOUS WASTE STORAGE AREA—UNAUTHORIZED PERSONS KEEP OUT,” and in Spanish, “CUIDADO—ZONA DE RESIDUOS—BIOLOGICOS PELIGROSOS—PROHIBIDA LA ENTRADA A PERSONAS NO AUTORIZADAS,” or in another language, in addition to English, determined to be appropriate by the infection control staff or enforcement agency. A warning sign concerning infectious waste, as that term was defined by Section 25117.5 as it read on December 31, 1990, that sign having been installed before April 1, 1991, meets the requirements of this section, until the sign is changed and as long as the sign is not moved. Warning signs shall be readily legible during daylight from a distance of at least 25 feet. Any enclosure or designated accumulation area shall provide medical waste protection from animals and natural elements and shall not provide a breeding place or a food source for insects or rodents.

118315 - Trash Chutes
A person shall not use a trash chute to transfer medical waste.

118320 - Compactors or Grinders

(a) Except as provided in subdivision (b), compactors or grinders shall not be used to process medical waste until after the waste has been treated pursuant to Chapter 8 (commencing with Section 118215) and rendered solid waste.

(b)

(1) Grinding or compacting may be used when it is an integral part of an alternative treatment method approved by the department.

(2) A compactor may be used to compact medical waste if the type of medical waste compactor proposed to be used is evaluated by the department, and approved by the department prior to its use pursuant to the following criteria:

(A) The compactor operates without the release of liquids or pathogenic microorganisms from the medical waste during placement of the medical waste into, or removal of the medical waste from, the compactor units, and during the compaction process.

(B) The compacted medical waste will not release liquids or pathogens during any sub-sequent handling and no residual waste will be left in the compactor unit after the process is completed.

(C) Compactor operations and maintenance personnel will not be at any substantial in-creased risk of exposure to pathogens.

(D) The compactor has been demonstrated not to have any adverse effects on any treatment method. If only specific treatment methods are compatible with the compaction process, the department shall condition its approval of the compactor for use only in conjunction with treatment methods, with regard to which no adverse effects have been demonstrated.

(c) Medical waste in bags or other containers shall not be subject to compaction by any compacting device and shall not be placed for storage or transport in a portable or mobile trash compactor, except as allowed pursuant to subdivision (b).

Chapter 9.5 - Trauma Scene Waste Management

118321 - Citation of Part

(a) This chapter shall be known, and may be cited, as the Trauma Scene Waste Management Act.

(b) The Legislature hereby finds and declares that it is in the interests of the health and safety of the public and the solid waste industry to regulate the handling and treatment of

waste that, but for contamination with large quantities of human blood or body fluids as a result of death, serious injury, or illness, would be solid waste.

(c) The Legislature further finds and declares that, in the interest of safe and uniform management of trauma scene waste, practitioners of trauma scene management should be subject to regulation by the department.

118321.1 - Registration and Fees

(a) A trauma scene waste management practitioner shall register with the department on forms provided by the department.

(b) Notwithstanding subdivision (a), a person who possessed a local business license as of January 1, 1997, and performs trauma scene waste management activities may continue to do so until April 1, 1998, subject to both of the following conditions:

(1) The department has been notified of the trauma scene waste management activities.

(2) Registration as a trauma scene waste management practitioner is completed on or before April 1, 1998.

(c) The department shall register a trauma scene waste management practitioner and issue a trauma scene waste hauling permit to a trauma scene waste management practitioner who submits a completed application form and the registration fee, upon approval of the application by the department.

(d) A registered trauma scene waste management practitioner is exempt from the registration requirements imposed pursuant to Chapter 6 (commencing with Section 118025) or Article 6.5 (commencing with Section 25167.1) of Chapter 6.5 of Division 20 upon haulers of medical waste.

(e) Registered trauma scene waste management practitioners shall pay an annual fee of two hundred dollars ($200) to the department for deposit in the fund. The fee revenues deposited in the fund pursuant to this subdivision may be expended by the department, upon appropriation by the Legislature, for the implementation of this chapter.

118321.2 - List of Practitioners

(a) The department shall maintain an inventory of registered trauma scene waste management practitioners.

(b) The department shall submit a list of registered trauma scene waste management practitioners to all local agency health officers and directors of environmental health, county administrators, and county sheriffs, and shall make the list available, upon request, to other public agencies and to the public.

118321.3 - Department Duties

(a) Notwithstanding Section 117650, the department shall be the sole enforcement agency with regard to the management of trauma scene waste.

(b) The department, working with the trauma scene waste management industry and the health care industry, shall establish the following standards:

(1) Documentation of personal protection required to be provided for, and used by, workers in accordance with the California Occupational and Safety Administration's bloodborne pathogen standards.

(2) Technologies and chemicals appropriate to the task of cleanup and disinfecting.

(c) The department may adopt regulations pursuant to which trauma scene waste management practitioners shall document both of the following:

(1) Identification of trauma scene waste within the scope of this chapter.

(2) Compliance with disposal requirements, including, but not limited to, tracking the transportation of trauma scene waste.

(d) The department shall adopt procedures to provide information to trauma scene waste management practitioners recommending procedures for removing trauma scene waste from trauma scenes.

118321.4 - Transporter Deemed Generator

As specified in Section 117705, a trauma scene waste management practitioner who transports trauma scene waste shall be deemed the generator of the trauma scene waste for purposes of this part.

118321.5 - Removal, Transportation, and Storage

(a) Trauma scene waste shall be removed from the trauma scene immediately upon completion of the removal phase of a trauma scene waste removal operation.

(b) Trauma scene waste shall be transported to a permitted medical waste transfer station or treatment facility pursuant to subdivision (d) of Section 118000, or may be stored in a dedicated freezer at the business location of the trauma scene waste management practitioner for a period of not more than 14 days, or as otherwise approved by the department.

118321.6 - Limitations

(a) This chapter does not limit or abridge the jurisdiction of the Division of Occupational Safety and Health of the Department of Industrial Relations.

(b) This chapter does not prohibit a business from employing or contracting with a person to provide cleanup or consultative services, including those services provided by an

industrial hygienist, with respect to trauma scene waste if those services are incidental to the principal course and scope of services provided by the person.

Chapter 10 - Enforcement

118325 - Injunction for Violations
An enforcement agency, district attorney, city attorney, or city prosecutor may bring an action to enjoin the violation, or threatened violation, of this part or the regulations adopted pursuant to this part, in the superior court in the county where the violation occurred or is about to occur. Any proceeding under this section shall be in accordance with Chapter 3 (commencing with Section 525) of Title 7 of Part 2 of the Code of Civil Procedure, except that the enforcement agency, district attorney, city attorney, or city prosecutor is not required to allege facts necessary to show or tending to show the lack of an adequate remedy at law or irreparable damage or loss. With respect to any action brought pursuant to this section alleging actual violation of this part or the regulations adopted pursuant to this part, the court shall, if it finds the allegations to be true, issue its order enjoining the continuance of the violation.

118330 - Order for Compliance / Administrative Penalty
Whenever the enforcement agency determines that a violation or threatened violation of this part or the regulations adopted pursuant to this part has resulted, or is likely to result, in a release of medical waste into the environment, the agency may issue an order to the responsible person specifying a schedule for compliance or imposing an administrative penalty of not more than one thousand dollars ($1,000) per violation. Any person who, after notice and an opportunity for hearing, violates an order issued pursuant to this section is guilty of a misdemeanor. The department shall adopt regulations that specify the requirements for providing notice to persons to whom orders are issued and for administrative hearings and fines concerning these orders.

118335 - Inspection

(a) In order to carry out the purpose of this part, any authorized representative of the enforcement agency may do any of the following:

(1) Enter and inspect a facility for which a medical waste permit or registration has been issued, for which a medical waste permit or registration application has been filed, or that is subject to registration or permitting requirements pursuant to this part. Enter and inspect a vehicle for which a hazardous waste hauler registration has been issued or a limited-quantity exemption granted, for which an application has been filed for a hazardous waste hauler registration or a limited-quantity exemption, or that is subject to registration requirements pursuant to this part.

(2) Inspect and copy any records, reports, test results, or other information related to the requirements of this part or the regulations adopted pursuant to this part.

(b) The inspection shall be made with the consent of the owner or possessor of the facilities or, if consent is refused, with a warrant duly issued pursuant to Title 13 (commencing with Section 1822.50) of Part 3 of the Code of Civil Procedure. However, in the event of an emergency affecting the public health or safety, an inspection may be made without consent or the issuance of a warrant.

(c) Any traffic officer, as defined in Section 625 of the Vehicle Code, and any peace officer, as defined in Section 830.1 or 830.2 of the Penal Code, may enforce Chapter 6 (commencing with Section 118000) and this chapter, and for purposes of enforcing these chapters, traffic officers and these peace officers are authorized representatives of the department.

118340 - Unauthorized Actions / Criminal Penalty

(a) No person shall transport, store, treat, dispose, or cause the treatment or disposal of medical waste in a manner not authorized by his or her permit or registration, this part, or the regulations adopted pursuant to this part.

(b) Any person who stores, treats, disposes, or causes the treatment or disposal of medical waste in violation of this part or the regulations adopted pursuant to this part is guilty of a public offense as follows:

(1) For a small quantity generator, a first offense is an infraction and is punishable by a fine of not more than one thousand dollars ($1,000).

(2) For a person other than a small quantity generator, a first offense is a misdemeanor punishable by a fine of not less than two thousand dollars ($2,000), or by up to one year in county jail, or by both the fine and imprisonment.

(c) A person who is convicted of a second or subsequent violation of subdivision (a) within three years of the prior conviction shall be punished by imprisonment in the county jail for not more than one year or by imprisonment in state prison for one, two, or three years or by a fine of not less than five thousand dollars ($5,000), or more than twenty-five thousand dollars ($25,000), or by both the fine and imprisonment. This section shall not apply unless any prior conviction is charged in the accusatory pleading and admitted by the defendant or found to be true by the trier of fact. If the defendant is a corporation that operates medical facilities in more than one geographic location, this subdivision shall apply only if the offense involves an adjacent facility involved in the prior conviction.

(d) Any person who knowingly treats or disposes, or causes the treatment or disposal of, medical waste in violation of this part shall be punished by imprisonment in the county jail for not more than one year or by imprisonment in the state prison for one, two, or three years, or by a fine of not less than five thousand dollars ($5,000), or more than twenty-five thousand dollars ($25,000), or by both the fine and imprisonment.

(e) This section does not apply to a person transporting medical waste who is required to be a registered hazardous waste transporter. Those persons are subject to penalties for

violations pursuant to Article 8 (commencing with Section 25180) of Chapter 6.5 of Division 20.

118345 - False Statements / Failure to Register

(a) Any person who intentionally makes any false statement or representation in any application, label, tracking document, record, report, permit, registration, or other document filed, maintained, or used for purposes of compliance with this part that materially affects the health and safety of the public is liable for a civil penalty of not more than ten thousand dollars ($10,000) for each separate violation or, for continuing violations, for each day that the violation continues.

(b) Any person who fails to register or fails to obtain a medical waste permit in violation of this part, or otherwise violates any provision of this part, any order issued pursuant to Section 118330, or any regulation adopted pursuant to this part, is liable for a civil penalty of not more than ten thousand dollars ($10,000) for each violation of a separate provision of this part or, for continuing violations, for each day that the violation continues.

Chapter 11 - Suspension or Revocation

118350 - Grounds for Suspension or Revocation

The enforcement agency may suspend, amend, or revoke any medical waste permit issued by the enforcement agency for any of the following reasons:

(a) Violation by the permittee of any of the provisions of this part or any regulation adopted pursuant to this part.

(b) Violation of any term or condition of the permit.

(c) Aiding, abetting, or permitting the violation specified in subdivision (a) or (b) or interference in the performance of the duty of the enforcement officer.

(d) Proof that the permittee has intentionally made false statements, or failed to disclose fully all relevant facts, in any material regard, on the application for a medical waste permit.

(e) The conviction of a permittee, or the person in charge of the activity subject to the medical waste permit, of any crime that is substantially related to the qualifications or duties of the permittee or the person in charge of the activity, or that is substantially related to the functions that are subject to the medical waste permit. For purposes of this section, a conviction means a plea or verdict of guilty or a conviction following a plea of nolo contendere. An action to revoke or suspend the medical waste permit may be taken when the time for appeal has elapsed or the judgment of conviction has been affirmed on appeal. That action may also be taken when an order granting probation is made suspending the imposition of sentence, notwithstanding any subsequent order pursuant

to Section 1203.4 of the Penal Code. The enforcement agency shall take into account all competent evidence of rehabilitation furnished by the permittee or person in charge of the permitted activity.

(f) A change in any condition that requires either a temporary or permanent modification, reduction, or termination of the permitted operation to bring it into compliance with the requirements of this part and the regulations adopted pursuant to this part.

118355 - Proceedings
Proceedings conducted by the department for the suspension or revocation of a medical waste permit shall commence with the filing of any accusation and shall be conducted in accordance with Chapter 5 (commencing with Section 11500) of Part 1 of Division 3 of Title 2 of the Government Code, and the department shall have all the powers granted to a department in that chapter.

118360 - Temporary Permit Suspension
The enforcement agency may temporarily suspend a medical waste permit prior to any hearing, when it has determined that this action is necessary to protect the public welfare. The enforcement agency shall notify the permittee of the temporary suspension and the effective date thereof and, at the same time, shall serve the permittee with an accusation. Upon receipt of a notice of defense by the permittee, the matter shall, within 15 days, be set for hearing. The hearing shall be held as soon as possible, but not later than 30 days after receipt of the notice. The temporary suspension shall remain in effect until the hearing is completed and the enforcement agency has made a final determination on the merits. However, the temporary suspension is vacated if the enforcement agency fails to make a final determination on the merits within 60 days after the original hearing has been completed.

APPENDIX H

LIST OF SELECT CARCINOGENS

Carcinogens Listed in the Eleventh Report

Part A. Known to be Human Carcinogens.

Bold entries indicate new or changed listing in *The Report on Carcinogens, Eleventh Edition.*

Part B. Reasonably Anticipated to be a Human Carcinogen.

(Continued)

Part B. Reasonably Anticipated to be a Human Carcinogen. *(Continued)*

(Continued)

Part B. Reasonably Anticipated to be a Human Carcinogen. *(Continued)ß*

Bold entries indicate new or changed listing in *The Report on Carcinogens, Eleventh Edition.*