



DEPARTMENT OF THE NAVY  
NAVAL MEDICAL RESEARCH CENTER DETACHMENT

LIMA, PERU  
UNIT NUMBER 3800  
APO AA 34041 - 3800

IN REPLY REFER TO

NMRCINST 5100.5  
18 Feb 2003

NMRCINST 5100.5

From: Officer-in-Charge, U.S. Naval Medical Research Center  
Detachment Lima, Peru

Subj: HAZARDOUS MATERIALS CONTROL AND MANAGEMENT (HMC&M) PROGRAM

Ref: (a) OPNAVINST 4110.2  
(b) OPNAVINST 5090.1 Series  
(c) OPNAVINST 5100.23 Series  
(d) NAVSUPINST 5100.27  
(e) NAVSUPINST 4500 (CHIL)  
(f) DODINST 6050.5M (HMIS)  
(g) NAVSUPINST 6050.5M  
(h) 29 CFR 1910.1200  
(i) NESO CHAPTER 20  
(j) LIFE SAFETY CODE 101  
(k) WRAIR/NMRC Chemical Safety & Environmental Protection  
Program Guide

Encl: (1) Responsibilities  
(2) Sample of Material Safety Data Sheet (MSDS)  
(3) Command Authorized Use List For Hazardous Materials  
(4) Chemical Waste Disposal Plan

1. Purpose. The purpose of this instruction is to provide general guidelines and regulations, set forth responsibilities regarding the safe use, handling, storage and disposal of hazardous materials at the U.S. Naval Medical Research Center Detachment Lima, Peru (NMRC).

2. Cancellation. NAMRIDINST 5100.

3. Background. Due to diversity of research interests at NMRC, tremendous varieties of biological, chemicals, materials and compounds exist at the Unit, all of which may pose a hazard to personnel and/or equipment. References (a) through (j) provide specific guidance and directives for a functional Hazardous Material/Hazardous Waste Program. The specific hazard from a particular agent may be due to:

a. Actions of the agent itself;

b. Actions of the agent in combination with one or more other agents;

c. Actions of the waste produced by that agent; and

d. Actions of those agents with an expired shelf life, or any combination of the four.

4. Policy. It is the policy of this Unit to provide NMRCD personnel with protection from hazardous materials, provide management, provide disposal guidelines and provide appropriate equipment. Responsibilities of NMRCD personnel are specifically addressed in enclosure (1).

5. Action.

a. Labels.

(1) All hazardous material containers will be labeled, tagged or marked with the following:

(a) Identity of all ingredients.

(b) Associated hazards or warnings.

(2) Signs, placards or other written materials may be placed next to individual stationary process containers instead of affixing the label to the container.

(3) Portable containers into which hazardous materials are transferred from labeled containers need not be labeled if the material is intended for immediate, total use.

(4) Existing labels on incoming containers of hazardous materials shall not be removed or defaced unless the container is immediately relabeled with updated information.

(5) Labels or other forms of warning will be in English.

(6) Laboratory supervisors will ensure proper labeling requirements are met and contact chemical manufacturers or distributors for any discrepancies noted in improper labeling.

(7) Chemicals will not be used if containers are improperly labeled.

b. Material Safety Data Sheets (MSDS)

(1) A MSDS will be available for each hazardous chemical in use. The MSDS library will be maintained and updated every 90 days in the Supply Department. Individual work spaces will have current MSDS's available 24 hours a day for hazardous chemicals used in each individual laboratory.

(2) Each MSDS will be in English. A Spanish text version of the MSDS will also be provided if one is available.

(3) The MSDS will be formulated and contain information shown enclosure (2).

c. Hazardous Material Authorized User List (AUL).

(1) The Command AUL, enclosure (3), will be available and posted in each laboratory and in the Supply Department.

(2) Hazardous Materials listed on the AUL will be reviewed annually to determine continued use. The utilizing Laboratory/Department Head will submit a written report to the Officer-in-Charge for the continued use of the hazardous material(s).

(3) The AUL must include the stock number and item name for stock numbered items purchased via the stock system or the product name and manufacturer name as they appear on the product label/MSDS for items not purchased via the stock system.

(4) The AUL will identify the procedures for which each HM is allowed to be used.

(5) A safety and Health review shall be conducted for any HM proposed for addition to the Command AUL. This review will be conducted by representatives of the Command Safety Committee prior to any ordering of initial supplies. The reviewing committee will submit their recommendations to the Officer-in-Charge for final approval or disapproval.

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(6) Command HM AUL should include whether the material is an extremely hazardous substance, hazardous substance, or toxic chemical as defined in chapter 4 of OPNAVINST 5090.1b of 1 Nov 94.

(7) Maintain MSDS for all HM either actually located on the facility in Lima and Iquitos or allowed to be brought on these facilities.

(8) Ensure HM is uniquely identified for reference, retrieval, and cross reference between the label, MSDS, AUL and inventory.

(9) All HM must be labeled with:

(a) The original HAZCOM compliant manufacturer's label or an exact copy of the HAZCOM compliant manufacturer's label, or

(b) Standard DOD Hazardous Chemical Warning Labels (DD 2521 or DD 2522), or

(c) A label developed by the command that contains the following information from the MSDS: the manufacturer's name, product identity, and hazard warning.

d. Employee Education.

(1) Employees will be provided with information and training on any hazardous chemicals or procedures involving hazardous chemicals in their work area at the time of initial assignment, and whenever a new hazard is introduced.

(2) Employees will be informed of possible hazardous chemical exposure involved in non-routine tasks (e.g. chemical hazards of cleaning compounds, possible chemical exposure during maintenance procedures, etc.).

(3) Employee training will include:

(a) Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area (visual appearance, odors being released or personal monitoring required).

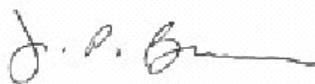
(b) The physical and health hazards of the chemicals in the work area.

(c) Protective measures to be used by employees to limit their exposure to the hazards. This includes specific operating procedures, personal protective gear to be worn and emergency spill clean-up procedures.

(d) The details of the hazardous materials training include the explanation for the labeling system, MSDS availability and how employees can obtain hazard information.

(4) An employee education will be performed by the immediate laboratory supervisor at the time of check-in. A general hazardous material training will be conducted annually by the Safety Officer.

e. Visitors to NMRCD. All visiting scientists, visitors, or other contractors, who are working in an area at NMRCD, where exposure or contact to a hazardous chemical is possible must be informed by the area supervisor of any hazardous chemicals they may be exposed to and precautionary measures to limit exposure.



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**RESPONSIBILITIES**

1. The Officer-in-Charge has the overall responsibility for the Hazardous Material Program at NMRC and shall:

a. Ensure that the effective Hazardous Material Program is implemented and conducted in accordance with references (a) through (j).

b. Ensure that a Chemical Hygiene Officer is appointed in writing to manage the Hazardous Materials Program.

2. The Chemical Hygiene Officer shall be designated as the Hazardous Material Program Coordinator and shall:

a. Evaluate the locations where hazardous materials are stored, used and disposed to ensure compliance with applicable regulations. This includes hood certifications.

b. Ensure proper protective gear is available and properly utilized by personnel.

c. Be responsible for maintaining an accurate inventory of hazardous materials in the Command. The inventory is to be performed by each department quarterly.

d. Ensure that copies of MSDS's of all Chemicals at NMRC are maintained in the Supply Department. A sample MSDS is provided by enclosure (2).

e. Coordinate with proper authorities the orderly disposal of hazardous materials and waste.

3. The Command Safety Officer shall:

a. Provide assistance and support to the Chemical Hygiene Officer in the management of the HMC&M Program.

b. Administer and update the HMC&M Program.

c. Ensure compliance with the OSHA Hazard Communication Standard, Title 29 Code of Federal Regulations 1910.

Enclosure (1)

- e. Provide oversight of hazardous waste disposal.
- f. Perform periodic inspections of the hazardous Waste Storage areas.
- g. Maintain proper Hazardous Waste (HW) spill response equipment.
- h. Intervene in matters which pose immediate threat to life or health or threaten damage to equipment or buildings.
- i. Ensure an annual program review is conducted.
- j. Ensure that general training in hazardous communications is conducted and documented at least annually.
- k. Periodically review chemical supply requisitions to ensure no improper chemicals are ordered.

4. The Supply Department Supervisor shall:

- a. Ensure the department fully complies with the provisions of this instruction.
- b. Ensure the Department's Safety Committee member is appointed as the Departmental Hazardous Materials Representative.
- c. Minimize open procurement of hazardous materials.
- d. Ensure timely submission of supply requisitions to avoid hazardous materials stockpiling or running short.

5. The Department Head shall:

- a. Ensure the department fully complies with the provisions of this instruction.
- b. Ensure that the Departmental Safety Committee member is appointed as the Departmental Hazardous Materials Representative.

Enclosure (1)

6. The Department Safety Coordinator shall:

a. Assume the Hazardous Material Representative role for the department.

b. Ensure immediate access for all personnel to spill kits used in combating any incidents/accidents involving hazardous materials.

c. In the event of very large spill, ensure immediate orderly evacuation of non-essential personnel from the area - if required.

d. Coordinate response spills. If the spill is large (greater than one liter as a general rule), ensure that the department head and the Safety Officer is notified immediately.

e. Ensure that the MSDS list is current in the MSDS library within the department and all personnel are aware of their availability.

f. Be responsible for a quarterly inventory of Hazardous Material in the department.

g. Coordinate hazardous waste material disposal with the Chemical Hygiene Officer.

7. Investigators shall:

a. Ensure the proper use, storage, labeling and disposal of hazardous material.

b. Ensure subordinate personnel and visitors are adequately informed of the materials currently in use.

c. Ensure that ordering of hazardous material is such that it does not create a stockpiling nor interrupt research interest. The setting of high and low levels of individual chemicals is strongly encouraged. Problems encountered with ordering chemicals should be directed to the Supply Supervisor.

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d. Know the location of spill kits and their proper use.

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e. Inform the supervisor of the Animal Care Facility of any potential hazards from hazardous materials used in animals in experimental protocols. Any use of hazardous material used in the animals must be approved in advance.

e. Ensure that personnel who handle hazardous material, have no medical conditions which would limit contact with specific hazardous chemicals. Investigators are to check medical warnings on the MSDS for certain restrictions.

8. Each Laboratory Worker shall:

a. Use good safety practices whenever around hazardous materials, including but not limited to:

(1) Proper Storage.

(2) Using Hazardous Material in well ventilated areas.

(3) Not transferring hazardous material to unlabeled and/or improper containers (including cabinets and refrigerators)

(4) Good laboratory housekeeping practices.

(5) Proper use of personal protective equipment including gloves, lab-coats, film badges, etc.

(6) **NEVER** pipette by mouth.

(7) No eating, drinking, smoking, chewing or storing food in the laboratory spaces.

b. Report any discrepancies and direct any questions regarding hazardous materials to the proper person (s).

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Enclosure (1)

SAMPLE MSDS IS PLACED HERE

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Enclosure (2)



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**BASIC INFORMATION OF A MATERIAL DATA SAFETY SHEET (MSDS)**

1. **Background.** Working with hazardous material in the laboratory requires a great deal of caution. An accident or miscalculation can have serious consequences. But to work safely laboratory employees need to know as much as possible about the hazardous materials they may encounter. Material Safety data Sheets (MSDS) will provide information on everything from hazardous ingredients to what personal protective equipment should be used when handling that particular material.

2. **Purpose.** The Occupational Safety and Health Agency (OSHA) Hazard Communication Standard requires that MSDS's be supplied to users of hazardous substances, contain information designed to protect the user. MSDS's contain information to include hazardous ingredients, necessary personal protective equipment needed while working with substance, special emergency procedures in case of spill, exposure or direct contact.

3. **MSDS'S.** All MSDS's must contain the same basic information. However, there is no standard format, the presentation of this information can be different and can it be confusing. The MSDS is divided into a number of sections: production identification, ingredients, physical data, fire and explosive hazards, reactivity data, health hazards, spill/leak and disposal procedures, personal protection information, special precautions and other comments.

a. Product identification. Identification must correspond to the commercial label and contain product name, manufacturer and the date the MSDS was prepared. The MSDS must also contain other names (synonyms), physical characteristics - such as molecular weight, CAS number, manufacturer's name address and telephone number. A 24-hour emergency telephone number.

b. Ingredients. The MSDS is only required to list hazardous ingredients that make up more than 1% of the substance, if there is evidence that it could be released from a mixture in concentrations exceeding established limits of

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exposure, it presents explosion or other "physical hazards". Carcinogens are an exception where as they only need to comprise 0.10% of the substance. Both chemical and common names must be given.

c. Physical Data. Provides information which help to describe the substance. Indicates what the substance looks and smell like. Provides boiling and melts points. Provides descriptive information such as specific gravity, pH level, solubility, vapor density and odor threshold.

d. Fire and Explosion Hazards. A very important section detailing "flashpoint information (the temperature at which a substance's vapors will ignite). Contain the upper and lower explosion limits. Additional information can include: auto-ignition temperature, flammability class (NFPA) and firefighting procedures.

e. Reactivity Data. This section deals with conditions and other chemicals that can cause dangerous reactions describing how the chemical reacts under high temperatures or pressures, identifies chemical incompatibilities, addresses the chemical's stability, potential for decomposition, possibility of hazardous polymerization

f. Health Hazards. MSDS's will provide information on those substances suspected or known to be health hazards. Chemicals are considered to be health hazards if they are: **carcinogenic, toxic, reproductive hazards, irritants, corrosives, a sensitizer, able to damage the blood or circulatory system and are able to damage lungs, skin, eyes or mucous membranes.** This section will also contain information regarding long-term exposure by providing "exposure limit" or "raw toxicity" data.

g. Spill/Leak and Disposal Procedures. Provides helpful information about precautions and spill clean-up. It is especially important to know what to do if chemical come into contact with your body. Water is normally the first line of defense. It will provide directions for first aid and emergency procedures for four routes of entry: skin - contact by absorption and injection, eyes, ingestion and inhalation.

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h. Personal Protective Information. This section will list proper protective measures when working with the chemical to include engineering controls - fume hoods or other ventilation, etc., safe work practices and personal protective equipment (PPE) that should be used.

i. Special Precautions/Other Comments. This section provides important handling and storage information. Lists special storage requirements, assists with selecting the correct packing containers, and includes Department of Transportation (DOT) shipping information such as "Hazard Class" and UN number.

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Enclosure (2)

(COMMAND AUTHORIZED USER LIST FOR HAZARDOUS MATERIALS)

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Enclosure (3)

## CHEMICAL WASTE DISPOSAL

1. The accumulation of chemical waste(s) will be generated in operations of widely different sizes and complexity with the amounts and varieties varying accordingly. This accumulation and or its improper disposal constitute a health and safety hazard to all concerned and the environment. Therefore those who generate hazardous wastes have a moral and legal obligation to see that waste is handled and disposed of in a manner which is in compliance with federal, local and Navy Regulations.

2. The NMRC Laboratories generate quantities of chemical or hazardous wastes materials through the course of actual experiment and diagnostic evaluations. The disposal of these materials is dependent upon which treatment method employed to destroy or detoxify these wastes. In order for the laboratories to dispose of hazardous the following guidelines must be followed:

a. Chemical/physical treatment methods must be implemented which destroy or detoxify the waste.

b. Chemical wastes shall be treated as it is produced.

c. The chemical/physical treatment method must be included as part of the experiment or diagnostic study standard operating procedure or protocol.

d. Investigators shall ensure and incorporate treatment methods as the end products of their experiments or diagnostic studies safe at the bench.

3. The purpose of this plan is to assist laboratory personnel in developing awareness for chemical hazards and in fulfilling their responsibilities to dispose of chemical wastes without personal injury, hazardous adulteration of drains, or contamination of ground, air or water.

a. Disposal of Chemical Waste.

(1) Individual hazardous properties of chemicals vary because of degree of toxicity, quantity, chemical state, etc.

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Determine the correct procedures and precautions necessary for recommended disposal of hazardous material/waste.

(2) Consult with the Chemical Hygiene Officer or Command Safety Officer prior to the disposal of any hazardous material/waste.

b. Collection.

(1) Deposit chemical waste in labeled containers compatible with the contents.

(2) Use original container when possible. Mark the date you begin to accumulate the waste and identify the waste on each container.

(3) Close containers during storage and separate incompatible wastes.

(4) Within 7 days, (beginning when first placing waste into the container) notify the Chemical Hygiene Officer to arrange disposal.

(5) The Supply Department shall document transactions related to waste disposal.

(6) The Chemical Hygiene Officer will retain document copies and log transactions in a waste disposal log.

c. Discarding chemical stocks. Discard HM that is expired, usable or missing labels. Small residual, diluted amounts of the following may be flushed into sewers:

- (1) Acid.
- (2) Caustic.
- (3) Sugar and other water-soluble organic matter.
- (4) Water soluble solvents.

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NOTE: Prior to putting other chemicals into sewers obtain guidance from the Chemical Hygiene Officer, Safety Officer or the Contract Maintenance Manager to avoid damage to sewer systems or human injuries.

d. Corrosive agents.

(1) Storage. Store amounts more than 100 g of solid or 100 ml of concentrated solution in corrosive lockers. Separate incompatible chemicals (e.g. acids and caustics). Store smaller amounts safely (e.g. in cabinets), away from eye level or where likely spilled.

(2) Benches. Keep only a one-day supply on working areas of a laboratory bench. Return to storage unused amounts and larger containers after dispensing a working amount.

(3) Other safety measures. Wear appropriate PPE. If exposed (eye, skin, inhaled or swallowed) begin emergency measures.

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Enclosure (4)