2023 CHP Template Updates

2023 template and this document can be found here

https://ehs.mit.edu/chemical-safety-program/chemical-hygiene/

P. 6 Part I
2.4 The Principal Investigator or Laboratory Supervisor's responsibilities
New Wording
L. Ensure employees who suspect they may have been exposed to a hazardous chemical, dial 100 from an MIT phone or 617-253-1212 from a cellular phone and ask for medical assistance. Such exposures may occur through accidental skin exposures, ingestion, or inhalation of the chemical.
Old Wording
L. Ensure employees who suspect they may have received an excessive exposure to a hazardous chemical report to the MIT Medical Department for assessment. Such exposures may occur through accidental inoculation, ingestion, or inhalation of the chemical.

P. 25 Part II
STEP 4: Be Prepared for Emergencies
New Wording
For all emergencies, contact Campus Police at 617-253-1212 or 100 from an MIT telephone.
An *MIT Emergency Response Guide* should be posted in every laboratory in an area accessible to all. This guide outlines the procedures to follow for most types of emergency situations. The MIT Emergency Response Guide is available electronically at https://ehs.mit.edu/about/emergency-management/ Carefully review the guidelines for handling medical emergencies, personal injury, chemical spills and fire in the laboratory. This information could save your or your lab mate's life. Only a subset of that information is repeated here.
...
A. Chemical Exposure and Contamination
Chemical Exposure: Chemical exposures may occur through accidental skin exposure, ingestion, or inhalation of the chemical. Follow appropriate first aid procedures as described in the safety data sheet of that specific chemical.
Chemical Contamination: If the victim or their clothes are chemically contaminated, put on appropriate personal protective equipment and remove victim's contaminated clothing. Using a chemical shower, eyewash, or sink in a safe area, flood contaminated body part(s) with large amounts of water for 15 minutes.
For hazardous chemical exposures and personal contamination incidents, call 100 from a MIT phone or 617-253-1212 from a cell phone. An alternative response for exposure to a particular hazard may be indicated in its written SOP only after consultation with EHS and MIT Medical.

Old Wording
For all accidents requiring emergency police, fire, or medical response, contact Campus Police at 617-253-1212 or 100 from an MIT telephone.

An *MIT Emergency Response Guide* should be posted in every laboratory in an area accessible to all. This guide outlines the procedures to follow for most types of emergency situations. The MIT Emergency Response Guide is available electronically at https://ehs.mit.edu/about/emergency-management/ Carefully review the guidelines for handling medical emergencies, personal injury, chemical spills and fire in the laboratory. This information could save your or your lab mate's life. Only a subset of that information is repeated here.

...

A. Chemical Contamination

If the victim or their clothes are chemically contaminated, put on appropriate personal protective equipment and remove victim's contaminated clothing. Using a chemical shower, eyewash, or sink in a safe area, flood contaminated body part(s) with large amounts of water for 15 minutes and seek medical assistance.

P. 31 Part II

3.2.11 Take additional precautions for work with corrosive substances.

New Wording

For hazardous chemical exposures and personal contamination incidents, call 100 from a MIT phone or 617-253-1212 from a cell phone. An alternative response for exposure to a particular hazard may be indicated in its written SOP only after consultation with EHS and MIT Medical.

Old Wording

Seek medical attention immediately in the event of a potentially injurious exposure.

P. 32 Part II

3.3.5 Take action to prevent skin contact.

New Wording

Contact with the skin is a frequent mode of chemical injury. Avoid all skin contact with particularly hazardous substances by using suitable protective apparel including the appropriate type of gloves or gauntlets (long gloves) and a suitable laboratory coat or apron that covers all exposed skin. Always wash your hands and arms with soap and water immediately after working with these materials. In the event of skin contact, the affected areas should be flushed with water and medical attention should be sought. To obtain medical attention, call 100 from a MIT phone or 617-253-1212 from a cell phone. An alternative response for an exposure may be indicated in a written SOP only after consultation with EHS and MIT Medical.

Old Wording

Contact with the skin is a frequent mode of chemical injury. *Avoid all skin contact with particularly hazardous substances* by using suitable protective apparel including the appropriate type of gloves or gauntlets (long gloves) and a suitable laboratory coat or

apron that covers all exposed skin. Always wash your hands and arms with soap and water immediately after working with these materials. In the event of accidental skin contact, the affected areas should be flushed with water and medical attention should be obtained as soon as possible.

P. 33 Part II
3.5 Special Precautions for Work with Hydrofluoric Acid
New Wording
Hydrofluoric acid (HF) is a *particularly hazardous substance*, like many acids, but has added dangers that make it especially dangerous to work with. HF is less dissociated than most acids and deeply penetrates the skin. Symptoms of exposure may be delayed for up to 24 hours, even with dilute solutions. HF burns affect deep tissue layers, are extremely painful, and disfiguring. The highly reactive fluoride ion circulates throughout the body and can cause multiple organ toxicity, including heart arrhythmias and death, if not treated. *Any* suspected exposure to HF should be immediately flooded with water, decontaminated with calcium gluconate gel, and receive medical attention immediately. To do so, call 100 from a MIT phone or 617-253-1212 from a cell phone. An alternative response for an exposure may be indicated in a written SOP only after consultation with EHS and MIT Medical.

Old Wording
Hydrofluoric acid (HF) is a *particularly hazardous substance*, like many acids, but has added dangers that make it especially dangerous to work with. HF is less dissociated than most acids and deeply penetrates the skin. Symptoms of exposure may be delayed for up to 24 hours, even with dilute solutions. HF burns affect deep tissue layers, are extremely painful, and disfiguring. The highly reactive fluoride ion circulates throughout the body and can cause multiple organ toxicity, including heart arrhythmias and death, if not treated. *Any* suspected exposure to HF should be immediately flooded with water, decontaminated with calcium gluconate gel, and treated at MIT Medical.

In case of:

- Large area of skin exposure (greater than the palm of the hand) and the HF concentration is greater than 5%
- Eye exposure
- Inhalation exposure
- Ingestion

Immediately call 100 or 617-253-1212, ask for Advanced Life Support (ALS) Ambulance, follow appropriate irrigation protocol and go directly to the hospital via ALS Ambulance.

P. 35 Part II

3.8 Special Precautions for Work with Cyanide Salts and Compounds
New Wording

Cyanides have a white crystalline or granular powder appearance and the dry salts are odorless but the reaction with atmospheric moisture may produce hydrogen cyanide which has a faint odor of bitter almonds. They are slightly soluble in water and when mixed with acids will produce lethal hydrogen cyanide gas. Cyanides are used in chemical synthesis and electroplating. A hazard assessment should be done addressing safe work practices, emergency procedures, roles and responsibilities and training prior to work.

Emergency procedures for cyanide exposure (see also Part IV section 3.4): For a medical emergency and treatment for *any* cyanide exposure (confirmed or suspected) dial 100 from any MIT phone or 617-253-1212 from a cell phone. When calling, it is critical to state that it is a potential cyanide exposure and to request an ambulance equipped with a CYANOKIT and capable of treating cyanide poisoning (See Laboratory Use of Cyanide Salts guidance https://ehs.mit.edu/chemical-safety-program/chemicals/).

Old Wording

Cyanides have a white crystalline or granular powder appearance and the dry salts are odorless but the reaction with atmospheric moisture may produce hydrogen cyanide which has a faint odor of bitter almonds. They are slightly soluble in water and when mixed with acids will produce lethal hydrogen cyanide gas. Cyanides are used in chemical synthesis and electroplating. A hazard assessment should be done addressing safe work practices, emergency procedures, roles and responsibilities and training prior to work.

Emergency procedures for cyanide exposure (see also Part IV section 3.4): For a medical emergency and treatment for a confirmed or suspected cyanide exposure we rely on emergency responders by dialing 100 or 617-253-1212 immediately to reach MIT Campus Police. When calling, it is critical to state that it is a potential cyanide exposure and to request a Cambridge Fire Dept. Paramedic Company ambulance service equipped with a CYANOKIT for first aid treatment of cyanide poisoning (See Laboratory Use of Cyanide Salts guidance https://ehs.mit.edu/chemical-safety-program/chemicals/).

2023 CHP Template Updates

2023 template and this document can be found here

https://ehs.mit.edu/chemical-safety-program/chemical-hygiene/

P. 57 Part IV
3.1 Medical Evaluation
New Wording

Employees or students who work with hazardous materials are entitled to a medical evaluation by an occupational medicine physician or occupational health nurse under the following circumstances:

- A spill, leak, explosion or other incident created a likelihood of exposure.
- The individual(s) develops signs/symptoms associated with hazardous chemicals to which they were exposed. (Note that acute (same-day) onset of symptoms should seek immediate medical attention by calling 100 from a MIT phone or 617-253-1212 from a cell phone. If non-life-threatening symptoms developed slowly over more than a couple days, an appointment may be made with Occupational Health as described below).
- The individual works with reproductive toxins.

In addition, an employee or student will be offered medical evaluation if it is determined after consulting EHS that:

- environmental monitoring results are routinely above action level or PEL (permissible exposure limit) for a hazardous substance for which there are monitoring/medical surveillance requirements; or
- a hazardous substance, for which there is a standard surveillance program, is instrinsic to a research program lasting for at least a year.

Appointments are made with Occupational Health by calling 617-253-8552 or by sending a message to an Occupational Health provider through HealthELife, the secure messaging system used by MIT Medical.

Information to Provide to the Clinician

At the time of the medical evaluation, the following information shall be provided to the clinician:

- Identity of the hazardous chemicals to which the individual may have been exposed;
- A description of the conditions under which the exposure occurred;
- A description of the signs and symptoms of exposure, if any; and
- A copy of the chemical information sheet (SDS, or Safety Data Sheet) shall be provided.

Clinician's Written Opinion

The MIT Medical Department and the Industrial Hygiene Program within the Environment, Health and Safety Office have a collaborative relationship in dealing with chemical and other work-related exposures that may result in the need for medical care. This collaborative relationship includes protecting patient information while ensuring that supervisors receive the information necessary to ensure that an individual's return to

work following medical treatment for a work-related exposure does not compromise the patient's health.

Old Wording
Employees or students who wish to discuss occupationally-related medical issues with the MIT Medical Department may do so. During this medical evaluation, the clinician will determine if a medical examination is necessary. Medical evaluations and examinations may be arranged by contacting the Medical Department, Occupational Medicine Service at 617-253-8552.

When a Medical Evaluation May be Necessary
Any employee who exhibits adverse health effects from a chemical or hazardous material exposure as a result of MIT-related research or work should report to the Medical Department immediately for a medical evaluation.

Employees or students who work with hazardous materials are entitled to a medical evaluation when any of the following conditions occur:

- The individual(s) develops signs/symptoms associated with hazardous chemicals to which they were exposed;
- Exposure monitoring results are routinely above action level or PEL (permissible exposure limit) for a substance for which there are monitoring/medical surveillance requirements; or
- A spill, leak, explosion or other incident creates a likelihood of exposure.

Information to Provide to the Clinician
At the time of the medical evaluation, the following information shall be provided to the clinician:

- Identity of the hazardous chemicals to which the individual may have been exposed;
- A description of the conditions under which the exposure occurred;
- A description of the signs and symptoms of exposure, if any; and
- A copy of the chemical information sheet (SDS, or Safety Data Sheet) shall be provided.

Clinician's Written Opinion
The MIT Medical Department and the Industrial Hygiene Program within the Environment, Health and Safety Office have a collaborative relationship in dealing with chemical and other work-related exposures that may result in the need for medical care. This collaborative relationship includes protecting patient information while ensuring that supervisors receive the information necessary to ensure that an individual's return to work following medical treatment for a work-related exposure does not compromise the patient's health.

P. 59 Part IV
3.4 First Aid Kits and Specific Hazard First Aid
New Wording

If your Department, Lab or Center (DLC) chooses to have first aid kits in labs, machine shops or other work spaces to treat minor traumatic injuries, then there are some additional requirements to address outlined in the First Aid Kit guidance at https://ehs.mit.edu/wp-content/uploads/EHS-0213.pdf. The guidance contains information on kit types, maintenance and training. In the event of medical emergencies or if you are not sure of severity of the injury or appropriate care call (617) 253-1212 or dial 100 from any MIT phone. An injury report must be completed when a first aid kit is used due to an injury/illness https://ehs.mit.edu/workplace-safety-program/occupational-injury-or-illness-reporting.

Work environments with specific potential health hazards such as Hydrofluoric Acid should be equipped with appropriate emergency equipment that is readily available and for which lab personnel have been trained. Contact the EHS Office 617-452-3477 for a hazard assessment and possible recommendation for such special supplies.
For a medical emergency and treatment for cyanide exposure (confirmed or suspected), dial 100 from any campus phone or 617-253-1212 from a cell phone to reach MIT Campus Police. When calling, it is critical to state that it is a potential cyanide exposure and to request an ambulance equipped with a CYANOKIT and capable of treating cyanide poisoning (See Laboratory Use of Cyanide Salts guidance https://ehs.mit.edu/chemical-safety-program/chemicals/).

Old Wording

If your Department, Lab or Center (DLC) chooses to have first aid kits in labs, machine shops or other work spaces to treat minor incidental injuries, then there are some additional requirements to address outlined in the First Aid Kit guidance at https://ehs.mit.edu/wp-content/uploads/EHS-0213.pdf. The guidance contains information on kit types, maintenance and training. Because medical attention can be reached within a reasonable time on the MIT Campus it is acceptable in most instances to rely on this if first aid is needed and make that part of an emergency plan. In the event of medical emergencies and if you are not sure of severity of the injury or appropriate care call (617) 253-1212 or dial 100 from any MIT phone. Injured personnel not requiring emergency assistance can call MIT's Medical Department Urgent Care in E23 at 617-253-1311 for advice on where to seek care. An injury report must be completed when a first aid kit is used due to an injury/illness https://ehs.mit.edu/workplace-safety-program/occupational-injury-or-illness-reporting.

Work environments with specific potential health hazards such as Hydrofluoric Acid should be equipped with appropriate emergency equipment and in certain limited cases, with medical supplies that are readily available and lab personnel trained for immediate application. Contact the EHS Office 617-452-3477 for a hazard assessment and

possible recommendation for such special supplies. For a medical emergency and treatment for a confirmed or suspected cyanide exposure we rely on emergency responders by dialing 100 or 617-253-1212 immediately to reach MIT Campus Police. When calling, it is critical to state that it is a potential cyanide exposure and to request a Cambridge Fire Dept. Paramedic Company ambulance service equipped with a CYANOKIT for first aid treatment of cyanide poisoning (See Laboratory Use of Cyanide Salts guidance https://ehs.mit.edu/chemical-safety-program/chemicals/).