



Forensic Laboratory Safety Manual	Approval Date: 10/04/2019
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**Las Vegas Metropolitan Police Department
Forensic Laboratory**
5605 W. Badura Ave. Ste. 120B
Las Vegas, NV 89118

SAFETY MANUAL





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NOTE: Hyperlinks were accurate at the time of manual publication.

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LVMPD FORENSIC LABORATORY SAFETY MANUAL

3.1 Title: **Introduction and General Safety**

3.1.1 **Introduction and Purpose**

Since personnel within the Forensic Laboratory routinely use and handle hazardous chemicals, biohazards, and potentially toxic substances in performing their normal duties, there exists a need to have a Laboratory Safety Manual to minimize the risks associated with conducting these types of activities.

The purpose of the Laboratory Safety Manual is to identify and evaluate potential physical and health hazards associated with working in the laboratory environment. This manual is a part of an overall Safety Program/Manual developed by the Las Vegas Metropolitan Police Department for the safety and health of all employees. The Las Vegas Metropolitan Police Department has outlined the overall departmental safety program in the LVMPD Safety Manual which is located at W:\Safety Detail Information\Risk Mgmt – Health & Safety Manual. The Laboratory Safety Manual does not supersede this program, but rather, specifies the requirements for the unique environment of the Laboratory.

The LVMPD Risk Management Section Safety Detail is responsible for maintaining and implementing the LVMPD Exposure Control Plan which is located at W:\Safety Detail Information\Risk Mgmt – Health & Safety Manual. This Plan is accessible to all employees.

3.1.2 **Responsibilities**

The LVMPD Safety Coordinator, under the supervision of the Risk Management Section Director, will provide support to the Laboratory with regard to safety programs and training, monitoring of working conditions, and responding to emergency conditions.

The Health and Safety Liaison assigned to the Laboratory has been selected to assist the Safety Coordinator with specific health and safety functions. The Health and Safety Liaison is under the direct supervision of the Laboratory Director or a Forensic Laboratory Manager/Supervisor. Typical functions include inspections, coordination of personal protective equipment, posting of emergency procedures, implementing hazard communication, bloodborne pathogen and other necessary safety programs. The position of Health and Safety Liaison is indicated with the symbol † on the Forensic Laboratory Organization Chart. The Detail/Unit Safety assistants are indicated with the symbol #.



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Employees have the responsibility to participate actively in their own safety. They must follow safe work practices at all times. They have the responsibility to learn and abide by the regulations and procedures applicable to their work tasks, to report all injuries / illnesses / exposures to their manager/supervisor promptly, and to use all necessary safety equipment. In addition, employees have the right to report unsafe working conditions to the appropriate authorities.

LVMPD Department Manual **5/110.02 - Health and Safety in the Workplace** has established a safety program. Any concerns associated with Laboratory safety can be brought to the attention of the Health and Safety Liaison for the Laboratory.

3.1.3 Regulations

Many regulations cited throughout the manual are too voluminous to be included in their entirety as part of this safety manual. Employees who desire to learn more about the regulations cited may do so by accessing them via the Internet at www.osha.gov or consulting with the Health and Safety Liaison.

3.1.4 Electrical Safety

Safety-related work practices shall be employed to prevent electric shock or other injuries resulting from either direct or indirect electrical contacts, when work is performed near or on equipment or circuits which are or may be energized.

Energized means connected to an energy source or containing residual or stored energy.

Such work practices shall protect employees against contact with energized circuit parts directly with any part of their body or indirectly through some other conductive object. The work practices that are used shall be suitable for the conditions under which the work is to be performed and for the voltage level of the exposed electric conductors or circuit parts.

The control of energy during servicing and/or maintenance of machines and equipment is achieved by unplugging (de-energizing) machines or equipment to prevent unexpected energization, start-up or release of stored energy in order to prevent injury to employees.

Energized equipment may only be serviced by qualified persons capable of working safely and who are familiar with the proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools.

Note: "Lock-out, Tag-out" (LOTO) procedures, as defined by OSHA 29 CFR 1910.147 do not apply to equipment in the Laboratory.



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Additional Electrical Safety Points:

- All electrical devices must be grounded (manufactured with a 3-wire cord and a 3-prong plug), double-insulated or UL approved. Never plug a 3-prong plug into a 2-prong adaptor.
- Frayed, damaged or altered electrical cords must not be used.
- Employees' hands may not be wet when plugging and unplugging electrical cords.
- Outlets must not be overloaded with electrical equipment. Broken outlets should not be utilized with electrical equipment.
- Electrical cords may not be extended across doorways, aisles or desk openings unless they are taped or otherwise fastened under desks or to the floor to prevent them from hanging across an opening. The use of staples to fasten wires is not allowed as the staples may penetrate the insulation on the cord.
- Electrical cords shall be connected to devices and fittings so that there is no strain on the plug or outlet. Electrical cords are finely stranded for flexibility, straining a cord can cause the strands of one wire to loosen from under terminal screws and touch another wire.
- Access to the main breaker and/or electrical panels must never be blocked.
- Where flammable materials are present, electrical equipment capable of igniting the material shall not be used, unless measures are taken to prevent hazardous conditions from developing.

3.1.5 Compressed Gases

Compressed gas cylinders come in a variety of shapes, sizes, colors and specifications. Cylinders are manufactured to exact specification to ensure safe containment of the gases during the filling, transportation, handling, storage and use under normal and recommended operating conditions. Gases are chemicals with physical and health hazards. See "Compressed Gas Classes and Safety Rules" posted near the compressed gas storage area.

Hazards associated with compressed gases include oxygen displacement, fires, explosions, and toxic gas exposures, as well as the physical hazards associated with high pressure systems. Special storage, use, and handling precautions are necessary in order to control these hazards.

Check all cylinders as they are received from the supplier. Verify all labels, tags and shipping papers.



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3.1.5.1 **General Cylinder Handling Rules:**

- Cylinders must always be transported by Laboratory staff with the hand cart provided for that purpose and not handled by the valve portion of the cylinder. The valve protection cap must always be on when moving the cylinder. Avoid dragging, rolling or sliding cylinders even for a short distance.
- Cylinders in the Laboratory must be chained or otherwise restrained at all times when stored, in use and even while being transported. Do not place cylinders where they can be accidentally knocked over.
- All cylinders connected to an instrument must be tagged as "In Use".
- Do not store cylinders near highly flammable solvents, combustible waste material, unprotected electrical connections, gas flames or other sources of ignition.
- Valves and regulators should be visually inspected for damage each time a cylinder is changed.
- Never tamper with the safety relief devices in valves or cylinders.
- Never attempt to repair or alter cylinders, valves or safety relief devices.
- Cylinders must be handled with extreme caution at all times to avoid dropping them or damaging the valves.
- Cylinders which are not in use must have valve protection caps kept over the valves. Do not tamper with or attempt to remove any valve or its related safety devices.
- Never attempt to use a cylinder without the correct regulator. The threads and fittings on regulators are designed to fit only compatible tanks. Never connect a line directly to a tank valve.
- When a cylinder is empty, the valve must be closed, the valve protection cap replaced and the tank labeled "Empty." Full tanks will be labeled as such.
- Cylinders are to be stored upright at all times.
- Keep the cylinders clear of all electrical circuits, extreme heat, flame and sparks.
- Flammable gas cylinders should not be opened more than ½ turn of the spindle. This reduces the risk of explosion and allows for the cylinder valve to be closed quickly to stop gas flow.



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- Do not force connections that do not fit.
- Cylinders must be closed at the cylinder valve, not at the regulator. Check to ensure that the cylinder valve is closed before disconnecting the regulator.
- To avoid damaging delicate instruments, regulators should be closed or set at the proper pressure before opening the cylinder valve. If there is any doubt about the proper pressure, consult the directions for the instrument or a staff member familiar with the instrument.
- When fittings, regulators, or lines are changed, test them for leaks with a liquid soap solution (such as Snoop) prior to being put into use. Never use a flame to detect flammable gas leaks.
- Cylinders must be segregated in hazard classes while in storage. Oxidizers must be separated from flammable gases.
- Aisle ways should be kept clear and good housekeeping practices should be followed.
- All cylinders must be labeled to indicate the contents. Labels must never be removed or defaced. If cylinder labeling is unclear, it should be marked "Contents Unknown" and returned to the supplier.
- Ensure that cylinders have proper labeling and are free from corrosion, bulges, cracks, dents, cuts, gouges, etc. before accepting them into the laboratory.
- **Please see the Breath Alcohol Technical Manual for general handling rules and safety information pertaining to the compressed gases used for the Breath Program.**

Note: Each employee shall determine that compressed gas cylinders under their control are in a safe condition to the extent that this can be determined by **visual** inspection.

3.1.5.2 Compressed Gas Tank Logbook

A logbook will be maintained near the compressed gas tank storage area. Upon use, each tank's type, lot number (if applicable), initial pressure at connection and date and time of connection will be recorded.

3.1.5.3 Cryogenic Liquids

- Primary hazards of cryogenics are fire, explosion, pressure build-up, embrittlement of structural materials, contact with and destruction of living tissue and asphyxiation.



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- According to the National Bureau of Standards Handbook 44, a cryogenic liquid is considered to be a liquid with a normal boiling point below -150°C .
- Safety glasses/face shields are required during transfer and handling of cryogenic liquids.
- Insulated gloves should ALWAYS be worn when handling anything that comes in contact with cryogenic liquids and vapor. Cryogenic gloves need to be loose-fitting so that they can be readily removed if liquid nitrogen splashes into them.
- All cryogenics should be used and stored in a ventilated area. A leak could cause an oxygen-deficient atmosphere.
- Do not drop solids/liquids into cryogenic liquids.
- Never place a cryogen on tile or laminated counters because the adhesive will be destroyed.
- Avoid breathing the vapor from any cryogenic liquid.
- Cryogenic containers must be made from materials suitable for cryogenic temperatures.
- The transfer of a cryogenic liquid into warm lines or containers should be done slowly.
- Never store a cryogen in a sealed, airtight container at a temperature above the boiling point of the cryogen; the pressure resulting from the production of gaseous carbon dioxide or nitrogen may lead to an explosion.

First Aid

- In case of exposure to cryogenics or dry ice, remove any clothing that is not frozen to the skin. Do NOT rub frozen body parts because tissue damage may result. Obtain medical assistance as soon as possible.
- Place the affected part of the body in a warm water bath (not above 40°C). Never use dry heat.

3.1.6 Ionizing Radiation

The X-Ray Fluorescence (XRF) Spectrometer (maintained by the Firearms Unit and the Chemistry Details) generates ionizing radiation [x-rays]. The instrument will only be operated by individuals who have received the appropriate safety training and will be used within the manufacturer's safety guidelines. The Forensic Laboratory will maintain the safety records. The Nevada State Board of Health requires that all operators shall wear an



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individually-issued dosimetric device on either the wrist or finger of the hand holding the XRF.

The following are recommended radiation safety guidelines:

- 1) Proper Usage - never point the instrument at another person or at any portion of your own body. Never hold a sample in your hand while it is being tested. The "deadman" trigger will remain activated during hand-held use.
- 2) Controlled Areas - the area of storage and use should be such as to limit potential exposure to x-rays. The area at least 6 feet beyond the sample should be unoccupied when energized.
- 3) Specific Controls - when in use, the instrument should remain in control of a safety trained operator.
- 4) Time-Distance-Shielding - the operator should minimize time around the energized instrument, maximize the distance from the instrument window and direct the x-rays into high density materials whenever possible.
- 5) Exposure Prevention - all reasonable measures including labeling, training and the concepts of time distance and shielding should be used to limit radiation exposure to as low as reasonably achievable [ALARA].
- 6) Personal Monitoring - a dosimetric device will be worn when using the instrument.

The instrument has a number of safety interlocks which will remain active whenever practical.

3.1.7 Alternate Light Sources

The Latent Print Detail and Biology/DNA Detail maintain different types of alternate light sources. These instruments may only be used by those individuals trained in the operation and safety of these instruments.

The following safety precautions are recommended by the manufacturers:

- 1) Eye protection – proper eye protection must be worn. Eye damage can occur from direct viewing, or reflected or refractive light hitting the eye.
- 2) Reflective surfaces – all unnecessary reflective surfaces (including exposed jewelry worn by the operator) must be removed. Avoid looking at reflections in shiny, spherical objects such as door knobs, mirrors, or any other surfaces that reflect light.



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- 3) Skin protection – skin can become damaged by exposure to direct or scattered radiation caused by these light sources. Proper protective gloves and clothing must be worn at all times.
- 4) Electrical shock – these instruments must be properly handled to avoid electrical shocks to the user and shorts in the systems. Do not use outdoors if it is wet. Make sure all connections are proper and undamaged. Carefully follow instructions when changing the lamp on the Spectrum 9000. Do not remove the outer covers of the TracER or the Spectrum 9000.
- 5) Ignition of volatile substances - the TracER laser may be powerful enough to ignite some volatile substances such as alcohol, gasoline, and ether.

3.1.8 Workplace Ergonomics

Issues regarding ergonomics in the workplace can be addressed by the LVMPD Safety Detail.

3.1.9 Miscellaneous Regulations

- 1) Power tools such as drills, electric saws, etc, shall only be used with the appropriate personal protective equipment.
- 2) Centrifuges must not be opened while turning.
- 3) Broken glass or other sharps must be disposed of only in those receptacles which have been designated and marked for that purpose.
- 4) Only the thick-walled glassware designed for use under vacuum may be used for that purpose.
- 5) Use of ladders. Review W:\Safety Detail Information\Ladders, Cranes, Hoists, Lifting Devices.



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3.2 Title: **Exposure Control Plan**

3.2.1 **General**

LVMPD has established a written Exposure Control Plan designed to eliminate or minimize employee exposure in compliance with OSHA Bloodborne Pathogen Standard 29 CFR 1910.1030. The complete LVMPD Exposure Control Plan is located at W:\Safety Detail Information\Risk Mgmt – Health & Safety Manual.

Employees with occupational exposure to blood or other potentially infectious materials (OPIM) shall comply with the procedures and work practices outlined in the Plan. This is an overview of that Plan.

Changes in engineering and work practice controls are identified through Occupational Injury/Illness/Exposure Reports, safety committee findings, safety inspections, etc. Implementation of these changes is initiated by the Health and Safety Liaison and will reflect new or modified tasks and procedures and new or revised employee positions with occupational exposure.

The Exposure Control Plan is a key document to assist LVMPD in implementing and ensuring compliance with the standard. LVMPD is committed to providing a safe and healthful work environment for the entire staff.

3.2.2 **Exposure Determination**

Personnel employed by the LVMPD within the Forensic Laboratory at any job classification may have a possibility of incurring an Occupational Exposure. Exposure Incident means a specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials that results from the performance of an employee's duties.

OSHA's Occupational Exposure to Bloodborne Pathogens standard requires that all employers prepare an exposure determination for its facility. This exposure determination will include all job classifications with potential exposures and all tasks and procedures in which occupational exposure occurs and are performed by employees listed in the at-risk job classifications.



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Jobs in which all employees will have occupational exposure to bloodborne pathogens:

- Forensic Scientist
- Forensic Lab Technologist
- Police Officer

Jobs in which some employees may have occupational exposure to bloodborne pathogens:

- Supervisor/Manager
- Lab Aide/Assistant
- Evidence Technician
- Administrative Assistant/LEST

Tasks and procedures in which occupational exposure to bloodborne pathogen occurs in the job classifications listed below:

- Laboratory analysis involving blood or other potentially infectious materials (OPIM)
- Contact with evidence with the possibility of blood or OPIM present.
- Transporting blood or OPIM
- Cleaning blood/OPIM spills.
- Maintaining and cleaning contaminated lab equipment

3.2.3 Compliance and Control

Universal Precautions will be observed by all employees in order to prevent contact with blood or OPIM. All human blood and certain human body fluids are treated as if known to be infectious.

Engineering and work practice controls shall be utilized to eliminate or minimize employee exposure to bloodborne pathogens.

3.2.3.1 Engineering Controls:

- Contaminated evidence which is large, cumbersome and/or impractical to package (e.g. chair) will be temporarily stored in an area of the Laboratory removed from routine traffic patterns if it cannot fit in the Laboratory evidence storage vaults.
- Regulated leak-proof and puncture resistant waste receptacles that can be closed will be labeled with biohazard labels and will be accessible at all locations used for cleaning, handling, storing, impounding or discarding regulated waste. If contamination occurs on the outside of the receptacle, it shall be placed inside a secondary receptacle. Designated biohazard cabinets and refrigerators will be supplied at specific work site locations for the storage of blood or OPIM.



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- Personal Protective Equipment (PPE) shall be available to each employee with additional equipment necessary to handle decontamination of small spills and contaminated surfaces.
- Units with personnel that have a need to dispose of contaminated syringes, needles, scalpel blades or other sharps will be provided with a labeled, closable, leak-proof and puncture resistant container which needs to be maintained upright.

3.2.3.2 Work Practice Controls

Specimens, Evidence and Property, Sharp Instruments, Hand Washing, Housekeeping/Disinfection and Laundry work place controls are detailed below in **3.2.3.2.1-3.2.3.2.5**.

3.2.3.2.1 Specimens, Evidence and Property

- Cabinets or refrigerators used to store blood or OPIM (wet or dry) will be clearly placarded as a BIOHAZARD. Cabinets and refrigerators marked as BIOHAZARD shall not be used for any other purpose such as storage of food and drink.
- Personnel shall refrain from eating, drinking, smoking, applying cosmetics or lip balm and handling of contact lenses in work areas where there is a reasonable likelihood of occupational exposure.
- Personnel must ensure that any personal cuts, abrasions, wounds, etc., are always properly covered (e.g. adhesive bandage) for their own protection.
- All procedures involving blood or OPIM shall be performed in such a manner as to minimize splashing, spraying, splattering and generation of droplets of these substances.
- Mouth pipetting/suctioning is **prohibited**.

3.2.3.2.2 Sharp Instruments

Syringes, needles and other sharp items must be contained in a closable, puncture-resistant, leak and spill-proof, labeled container. Disposable sharps may be placed directly into rigid collection containers for later disposal. These shall be maintained upright and replaced routinely when full.

- Contaminated needles and other contaminated sharps shall not be bent, recapped or removed except through the use of a mechanical device or a one-handed technique.
- Shearing or breaking needles is **prohibited**.



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- Broken glassware shall be picked up using mechanical means such as a broom and dust pan, tongs or forceps and NOT directly with the hands and shall be disposed of into a rigid container.

3.2.3.2.3 Hand Washing

Hand washing is the single most important method of preventing the spread of infection. After removing gloves or other PPE, wash hands and other skin surfaces thoroughly. Personnel should wash hands briskly for 10-15 seconds with warm water and soap. When hand washing facilities are not available (e.g. water is turned off), personnel should use a waterless hand cleaner according to the manufacturer's directions then wash hands properly when facilities are available. Hand washing shall be conducted in the Laboratory or restrooms and NOT in the kitchen sink.

If skin contact with blood or OPIM occurs, **immediately** wash hands and other skin surfaces with soap and water or flush mucous membranes (eyes, nose and mouth) with water.

3.2.3.2.4 Housekeeping/Disinfection

Reusable items, equipment or work surfaces can be cleaned first with soap and water then a disinfecting solution or with an appropriate one-step process (e.g. Dispatch). Large amounts of fluid may first be absorbed by absorbent powder, towels or paper which should then be disposed of in a BIOHAZARD container. The area will then be cleaned as above. Disinfectant solutions such as bleach and water (1:10 dilution ratio) or commercially prepared disinfectants are acceptable for use in the Laboratory.

All equipment shall be decontaminated prior to maintenance, servicing or shipment out for repairs when applicable.

Work surfaces can be covered with a protective covering (e.g. butcher paper) or an imperviously-backed absorbent paper which shall be discarded in a biohazard receptacle when contaminated with blood or OPIM or at the end of a work shift.

3.2.3.2.5 Laundry

Laundry services (an external contractor) shall be alerted to the presence or possible presence of contaminated Laboratory coats or towels which are soiled with blood or other bodily fluids by sealing them in a BIOHAZARD bag. Soiled garments shall be promptly removed, placed in a biohazard bag and placed in a biohazard bin. Notify the Lab Aide if there is a need for a replacement coat.

3.2.4 Biohazard Waste

The Nevada Department of Environmental Protection regulates the disposal of biohazard waste. OSHA defines regulated waste as liquid or semi-liquid blood or other potentially infectious materials; contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed; items that are caked with dried blood or other potentially



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infectious materials and are capable of releasing these materials during handling; contaminated sharps; and pathological and microbiological wastes containing blood or other potentially infectious materials. [29 CFR 1910.1030(b)]

3.2.4.1 Biohazard Waste Containers

LVMPD supplies biohazard containers that meet, or exceed, OSHA and EPA specifications (closable, leak-proof, puncture resistant and labeled). Each work-site with the potential to encounter a biohazard will have a receptacle which should be kept in a closed condition. The receptacle will have the signal word "BIOHAZARD" or other biological hazard symbol and will be lined with a labeled or color-coded bag.

3.2.4.2 Biohazard Waste Disposal

When biohazard waste containers are full or contain wet items, they shall be closed prior to being stored, transported or shipped. Arrangements for pick-up and disposal of the container will be made with an external contractor.

3.2.5 Personal Protective Equipment (PPE)

Policies regarding PPEs are contained in **3.4 - Chemical Hygiene Plan, 3.4.6 - Personal Protective Equipment (PPE)**.

3.2.6 Immunizations and Vaccinations

Immunizations reduce the risk of contracting a communicable disease, protecting the health of the employees and their families. LVMPD complies with the OSHA mandate by providing the Hepatitis B vaccination and/or routine booster series free of charge to civilian employees who may be at risk of exposure to bloodborne pathogens in the performance of their jobs. Although the vaccination is not required, LVMPD strongly recommends that their employees elect to receive the vaccination unless:

- Documentation exists that the employee has previously received the series.
- Antibody testing reveals that the employee is immune.
- Medical evaluation shows that vaccination is contraindicated.

(Participation in a pre-screening program is not a prerequisite for receiving Hepatitis B vaccination.)

All LVMPD personnel must sign a "Hepatitis A/B Vaccination Acceptance/Refusal" form (LVMPD 176). If the employee elects to decline the vaccine, this form serves as a waiver. Individuals may change their mind and elect to take the vaccine at any time merely by completing another acceptance/refusal form and submitting it to the Safety Coordinator.

Vaccinations and post-exposure evaluations are provided by or under the supervision of a licensed physician or healthcare professional in accordance



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with recommendations by the U.S. Public Health Services. All laboratory tests are conducted by an accredited laboratory at no cost to the employee.

3.2.7 Post-Exposure Evaluation and Follow-Up

When an employee has an exposure to blood or other body fluids, the incident must be reported to a supervisor immediately and to the Safety Coordinator as soon as possible.

3.2.7.1 Documentation

The supervisor will ensure that an Occupational Injury/Illness/Exposure Report (LVMPD 26) is completed immediately and documents the routes of exposure and how the exposure occurred. Specific procedures for the use of this form can be found in the Department Manual section **5/110.14 - Reporting On-Duty Injury, Job-Related Illness, and Occupational Exposure to Communicable Diseases**.

The exposed employee may obtain immediate medical attention at an LVMPD approved facility. Any delays may compromise any benefit medical treatment may provide.

3.2.7.2 Source Individual

Source Individual means any individual, living or dead, whose blood or other potentially infectious materials may be a source of occupational exposure to the employee. The source individual (if known) will be asked to sign a consent form- Consent to Release Test Results (LVMPD 175) which will allow LVMPD to obtain results of HIV and HBV testing at the Department's expense which will be coordinated by the Health Detail.

3.2.7.3 Testing of the Employee

With the employee's consent, his/her blood will be tested within 48 hours for baseline HIV and HBV as directed by the Risk Management Section. Post-exposure prophylaxis, when medically indicated, will be provided to the employee along with counseling and evaluation of reported illnesses.

The employee shall obtain, from the Risk Management Section, a copy of the evaluating healthcare professionals "Written Opinion" within 15 days of the completion of the evaluation. The "Written Opinion" shall be limited to whether the employee required the Hepatitis B vaccine and whether the vaccine was administered.

The Safety Coordinator will review the circumstances of all exposure incidents to determine if revisions or appropriate changes need to be made.

3.2.7.4 Medical Records

Medical records are maintained for each employee with occupational exposure in accordance with OSHA Standard 29 CFR 1910.1020, "Access to Employee Exposure and Medical Records".



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The Health Detail is responsible for maintenance of the required medical records. These confidential records are kept for at least the duration of employment plus 30 years.

Employee medical records are provided upon request to the employee, to anyone having written consent of the employee or to the Director and/or to the Assistant Secretary of OSHA within 15 working days or in accordance with 29 CFR 1910.1020. Such requests should be sent to the Risk Management Section.

3.2.8 Communication of Hazards

3.2.8.1 Labels

Warning labels shall be affixed to containers of regulated waste, contaminated equipment, refrigerators and freezers containing blood or OPIM and containers used to store, transport or ship blood or OPIM.

Labels shall be fluorescent orange or orange-red or predominately so, with lettering and symbols in contrasting color including the following legend:



Red bags or red containers may be substituted for labels.

3.2.8.2 Signs

The employer shall post signs in the areas of the Laboratory that handle biological specimens.

Signs shall be fluorescent orange or orange-red or predominately so, with lettering and symbols in contrasting color including the following legend:



3.2.9 Employee Training

All employees shall receive education on precautionary measures, epidemiology, symptoms, modes of transmission and prevention of bloodborne pathogen diseases at no cost to the employees during working hours.

Training records will show the dates of training sessions, the content or summary of those training sessions, the names and qualifications of all persons conducting the training, and the names and job titles of all who



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attended the training. Training records will be maintained for at least five years. All new hires will receive this exposure control training at the time of initial assignment to a job or task, annually thereafter and when changes, modifications or institution of new tasks or procedures are initiated with a possibility of Occupational Exposure to bloodborne pathogens.

Training records are provided to the employee, to anyone having written consent of the employee or to the Director and/or to the Assistant Secretary of OSHA within 15 working days of the request. Such requests should be addressed to the Risk Management Section.

3.2.10 Needlestick and Sharp Injuries

The Risk Management Section will evaluate an exposure incident to determine if the case meets OSHA's Recordkeeping Requirements 29 CFR 1904.

3.2.10.1 OSHA Recordkeeping

All work-related needlestick injuries and cuts from sharp objects which are contaminated with another person's blood or OPIM shall have the injury or cut documented on OSHA's Form 300 "Log of Work-Related Injuries and Illnesses" as an **injury** according to 29 CFR 1904. Recording activities are done by the Risk Management Section.

3.2.10.2 Sharps Injury Log

The Department's Risk Management Section will record all injuries from contaminated sharps in the "Sharps Injury Log". All incidents must include at least the date of the injury, the type and brand of the device involved, the department or work area where the incident occurred and an explanation of how the incident occurred. Employees need to report cuts, lacerations, punctures, and scratches only if they are work-related and involve contamination with another person's blood or other potentially infectious material.

This log is reviewed by the Safety Coordinator and is maintained for at least five years following the end of the calendar year that they cover. If a copy is requested by anyone, it must have any personal identifiers removed from the report. The log is maintained at the Risk Management Section and a request for a copy should be directed to them.

All work-related needlestick injuries and cuts from sharp objects that are contaminated with another person's blood or other potentially infectious material must be entered on the OSHA 300 Log as an injury. To protect the employee's privacy, the employee's name may not be entered on the OSHA 300 Log.

OSHA's Form 300A "Summary of Work-Related Injuries and Illnesses" shall be posted, with all personal identifiers removed, by the employer for employees to review from February 1st through the end of April. This is posted on the bulletin board in the Mail/Supply room.



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3.3 Title: **Hazard Communications**

3.3.1 **General**

The purpose of this section is to ensure that the hazards of all chemicals produced or imported are classified, and that information concerning the classified hazards is transmitted to employers and employees. The requirements of this section are intended to be consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS), Revision 3. Hazard communication is the employees' "Right-to-Know" the hazards and identities the chemicals they are exposed to in the workplace.

- Employee means a worker who may be exposed to hazardous chemicals under normal operating conditions or in foreseeable emergencies.
- Chemical means any substance, or mixture of substances.
- Workplace means an establishment, job site, or project, at one geographical location containing one or more work areas.

The goal of this chapter is to establish procedures and policies that provide information to employees about the hazards of chemicals which they may be exposed to in their workplace through an effective hazard communication program, chemical inventory, labels, Material Safety Data Sheets (MSDS)/Safety Data Sheets (SDS) and employee training. This program is integrated with the **Chemical Hygiene Plan (3.4)**.

The written Hazard Communication Program shall be readily available, upon request to employees, employee representatives, and to the Assistant Secretary and the Director of OSHA.

3.3.2 **Inventory**

A Laboratory chemical inventory is maintained and updated as needed by the Forensic Laboratory Health and Safety Liaison or designee (see **2.8.4 – Chemical and Drug Inventory** in the Administrative Manual).

The Laboratory chemical inventory is discipline specific and can be found on: H:\CB\Forensics\General\Chemical Inventory (MSDS)\Chemical Inventory and in Resource Manager.

3.3.3 **Definition of Hazardous Materials**

A Hazardous Material is anything that is listed in:

- 29 CFR 1910.1200, Subpart Z, Toxic and Hazardous Substances, OSHA



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- Threshold Limit Values for Chemical Substances in the Work Environment, American Conference of Governmental Industrial Hygienist, 2009
- National Toxicology Program, 13th Report on Carcinogens, 2014
- International Agency for Research on Cancer (IARC), Monographs on the Evaluation of Carcinogenic Risks to Humans. The IARC Monographs identify environmental factors that can increase the risk of human cancer. These include chemicals, complex mixtures, occupational exposures, physical agents, biological agents, and lifestyle factors.

A hazardous chemical means any chemical which is a physical or health hazard. The acute and chronic toxicity of each chemical used may not be precisely defined, however each chemical compound should be treated as a potential health hazard.

Acute toxicity refers to those adverse effects occurring following oral or dermal administration of a single dose of a substance, or multiple doses given within 24 hours, or an inhalation exposure of 4 hours.

Physical hazards mean a chemical that is classified as posing one of the following hazardous effects:

- Combustible Liquid
- Compressed Gas
- Explosive
- Flammable (aerosols, gases, liquids solids)
- Organic Peroxide
- Oxidizer (liquid, solid or gas)
- Pyrophoric (liquid or solid)
- Unstable (reactive) compound
- Self-reactive compound
- Water reactive compound
- Toxic Chemicals
- Self-heating
- Corrosive to metal

Health hazards means 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)
- aspiration hazard



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Additional hazard communication training will be provided by the Health and Safety Liaison/designee for any hazard categories newly introduced into the Laboratory.

3.3.4 **Safety Data Sheets (SDS)**

OSHA's Hazard Communication Standard (HCS) (29 CFR 1910.1200(g)) requires chemical manufacturers, distributors, or importers to provide Safety Data Sheets (SDSs) (formerly known as Material Safety Data Sheets or MSDSs) to communicate the hazards of hazardous chemical products. As of June 1, 2015, the HCS requires new SDSs to be in a uniform format, and include the section numbers, the headings, and associated information under the headings below:

Section 1, Identification includes product identifier; manufacturer or distributor name, address, phone number; emergency phone number; recommended use; restrictions on use.

Section 2, Hazard(s) identification includes all hazards regarding the chemical; required label elements.

Section 3, Composition/information on ingredients includes information on chemical ingredients; trade secret claims.

Section 4, First-aid measures includes important symptoms/ effects, acute, delayed; required treatment.

Section 5, Fire-fighting measures lists suitable extinguishing techniques, equipment; chemical hazards from fire.

Section 6, Accidental release measures lists emergency procedures; protective equipment; proper methods of containment and cleanup.

Section 7, Handling and storage lists precautions for safe handling and storage, including incompatibilities.

Section 8, Exposure controls/personal protection lists OSHA's Permissible Exposure Limits (PELs); Threshold Limit Values (TLVs); appropriate engineering controls; personal protective equipment (PPE).

Section 9, Physical and chemical properties lists the chemical's characteristics.

Section 10, Stability and reactivity lists chemical stability and possibility of hazardous reactions.

Section 11, Toxicological information includes routes of exposure; related symptoms, acute and chronic effects; numerical measures of toxicity.



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Section 12, Ecological information

Section 13, Disposal considerations

Section 14, Transport information

Section 15, Regulatory information

Section 16, Other information, includes the date of preparation or last revision.

SDSs must be readily accessible to employees for all hazardous chemicals in the Forensic Laboratory. This may be done in many ways. For example, they may keep the SDSs in a binder or on computers as long as employees have immediate access to the information without leaving their work area when needed, and a back-up is available for rapid access to the SDS in the case of a power outage or other emergency. Manufacturers, distributors and importers are required to provide an MSDS/SDS to any purchaser of a hazardous product. If an MSDS/SDS is not received with a hazardous material, the purchaser is required to ask the vendor for one.

When a new MSDS/SDS is received, it will be forwarded to the Forensic Laboratory Health and Safety Liaison/designee. The Health and Safety Liaison/designee will then ensure that a copy of the MSDS/SDS is filed appropriately and that a copy will be sent to the LVMPD's Risk Management Section. This will apply to any revised or updated MSDS/SDSs as well.

MSDS/SDS are located in the main bullpen and electronically at H:\CB\Forensics\General\Chemical Inventory (MSDS). MSDS/SDS are located in the lab proper area and electronically at H:\CB\Forensics\General\Chemical Inventory (MSDS) for the DNA Annex.

Safety Data Sheets (SDS) are constructed and formatted to conform to the UN Globally Harmonized System of Classification and Labeling of Chemicals and took effect in 2015.

3.3.5 Labeling

All manufacturers, importers and distributors are required to label products containing hazardous substances with the following information:

- 1) Manufacturer's/Importer's Name, Address and Telephone Number
- 2) Product Identifier
- 3) Signal Word
- 4) Hazard Statement
- 5) Precautionary Statement(s)
- 6) Pictogram

Product Identifier

- This is not limited to the chemical name, code number or batch number. The manufacturer, importer or distributor can decide the



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appropriate product identifier. The same product identifier must be both on the label and in section 1 of the SDS.

Signal Word

- Used to indicate the relative level of severity of the hazard and alert the reader to a potential hazard on the label. There are only two words used as signal words, “Danger” and “Warning.” Within a specific hazard class, “Danger” is used for the more severe hazards and “Warning” is used for the less severe hazards. There will only be one signal word on the label no matter how many hazards a chemical may have. If one of the hazards warrants a “Danger” signal word and another warrants the signal word “Warning,” then only “Danger” should appear on the label.

Hazard Statement

- Describes the nature of the hazard(s) of a chemical, including, where appropriate, the degree of hazard. For example: “Causes damage to kidneys through prolonged or repeated exposure when absorbed through the skin.”

Precautionary Statement(s)

- Describes recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to the hazardous chemical or improper storage or handling. There are four types of precautionary statements: prevention (to minimize exposure); response (in case of accidental spillage or exposure emergency response, and first-aid); storage; and disposal.

Pictogram

- Graphic symbols used to communicate specific information about the hazards of a chemical. GHS uses a total of nine pictograms, OSHA will only enforce the use of eight. The environmental pictogram is not mandatory but may be used to provide additional information. Pictograms shall be in the shape of a square set at a point and shall include a black hazard symbol on a white background with a red frame sufficiently wide to be clearly visible. A square red frame set at a point without a hazard symbol is not a pictogram and is not permitted on the label.



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Health Hazards

Carcinogen
Mutagenicity
Reproductive Toxicity
Respiratory Sensitizer
Target Organ Toxicity
Aspiration Toxicity



Flame

Flammables
Pyrophorics
Self-Heating
Emits Flammable Gas
Self-Reactives
Organic Peroxides



Exclamation Mark

Irritant
Skin Sensitizer
Acute Toxicity
Narcotic Effects
Respiratory Tract Irritant



Gas Cylinder

Gases Under Pressure



Corrosion

Skin Burns
Eye Damage
Corrosive to Metals



Explosion Bomb

Explosives
Self-Reactives
Organic Peroxides



Flame Over Circle

Oxidizers



Skull and Crossbones

Acute Toxicity



Environment

Aquatic Toxicity

*****NOTE*****

On GHS labels category numbers are opposite from NFPA 704:

- 1 – most severe hazard
- 4 – least severe hazard

The Hazard category numbers are NOT required to be on labels but are required on SDSs in Section 2.

(Please see section 3.3.8 NFPA Chemical Hazard Labels for information regarding NFPA Labeling)



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Upon receipt of chemicals, the Laboratory employee checking in the chemical must label the manufacturer's container with the date received and the expiration date. GHS Labeling will be added to the container if necessary. No employee is to remove or alter the required labeling on chemicals. Any label which is damaged must have the appropriate information replaced. Chemicals that have undergone no preparation, but have been transferred to a secondary container must bear the identity of the substance, name of the manufacturer, the lot number, the expiration date and GHS labeling. No labels are required for portable containers. Portable containers are transfer containers from a labeled container that is only intended for immediate use by the employee who performed the transfer.

Policies regarding the labeling of chemicals that have undergone preparation, and are not intended for immediate use, are contained in **5.1.3 - Reagents and Standards**, in the Technical Requirements Manual.

It is the responsibility of employees to familiarize themselves with chemicals and reagents used in the Laboratory that have hazardous components. Reagent components can be found by using the appropriate references in the technical manuals.

GUIDANCE FOR HAZARD DETERMINATION OF MIXTURES

If a mixture has not been tested as a whole for health hazards, the mixture shall be assumed to present the same hazards as components which comprise 1.0 percent (1%) or more of the mixture. An exception pertains to carcinogens. In this case, the mixture shall be assumed to present a carcinogenic hazard if it contains a carcinogenic component which comprises 0.1 percent (0.1%) or more of the mixture.

3.3.6 GHS Label Binders (Bright Green Binders)

Each Detail of the Laboratory (Chemistry, DNA, Firearms, Latent Prints, and Toxicology) will have a bright green (chartreuse) binder in each sub-section of their Laboratory proper (e.g. Toxicology will have a binder for Blood Alcohol, Drug Screen and Drug Confirmation).

On the front of the binder are the GHS pictograms and their general meanings. Sheets of labels depicting the pictograms and signal words for use for labeling chemicals and transfer bottles are located in the binder. Chemicals that have been designated as **non-hazardous** per MSDS/SDS will have the **Exclamation Point** pictogram and the **Warning** signal word placed on them. Notify the Safety Liaison/Designee if more labels are needed.

The binder also contains information on how to properly dispose of the chemicals in your Detail. (See also **3.4.7.2.8- Waste Disposal Segregation, Collection and Storage Procedures**).

NOTE: This binder is meant to be a quick reference. It does **NOT** take the place of the MSDS/SDS for the chemical.



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3.3.7 Employee Training

As with all other employees of LVMPD, Laboratory employees must participate in hazard communications training as required by the overall hazard communication program or when circumstances indicate the need for additional training (the use of a new physical or health hazard category). This training shall include the requirements of 29 CFR 1910.1200 Hazard Communication Standard and 29 CFR 1910.1450 Chemical Hygiene Plan, operations within their workplace which utilize hazardous substances, location of the written hazard communication program and chemical hygiene plan, how to detect a hazard (the methods and observations used to detect the presence or release of a chemical), the physical and health hazards present and protective measures that should be utilized.

All training will be provided by those qualified to teach the subject and records will be maintained in Qualtrax.

3.3.8 NFPA Chemical Hazard Labels

The LVMPD Forensic Laboratory has transitioned to the UN Globally Harmonized System (GHS) of Classification and Labeling of Chemicals.

OSHA allows employers flexibility regarding the type of system to be used in their workplaces and OSHA has retained that flexibility in the revised Hazard Communication Standard (HCS). Alternative labeling systems such as the National Fire Protection Association (NFPA) 704 Hazard Rating and the Hazardous Material Identification System (HMIS) are permitted for workplace containers. However, the information supplied on these labels must be consistent with the revised HCS, e.g., no conflicting hazard warnings or pictograms.

A number of different systems are utilized by manufacturers and distributors in labeling hazard warnings. A color code may be utilized to indicate the category of hazard (e.g., red for flammable), a number may be used to indicate the severity of the hazard (e.g., 0 for minimal or no hazard, 4 for severe hazard), or a brief hazard statement may be used (e.g., "May be fatal if swallowed", "Extremely flammable" or "Can cause severe burns").

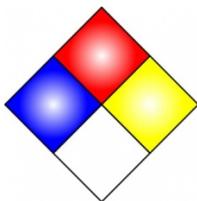
The National Fire Protection Association (NFPA) has a system for identifying hazards of chemicals. The "NFPA 704 diamond" is used to indicate health, flammability and reactivity hazards, as well as special cautions associated with chemicals.

The diamond contains four color coded sections representing hazard classes:

- Blue - Health
- Red – Fire Hazard
- Yellow - Reactivity
- White - Special Cautions



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The blue, red and yellow sections each bear a number from 0 to 4 indicating the degree of hazard. The numbers indicate the following:

- 4 - Extreme Hazard
- 3 - Serious Hazard
- 2 - Moderate Hazard
- 1 - Slight Hazard
- 0 - Minimal Hazard

Health ratings consider only short term respiratory or skin contact exposure. They do not consider ingestion or long-term exposure. A health rating of “4” indicates short term exposure may cause severe injuries or is possibly fatal.

Fire hazard ratings (flash points); the numbers indicate the following:

- 4 - Extreme: Below 73 °F
- 3 - Serious: Below 100 °F
- 2 - Moderate: Below 200 °F
- 1 - Slight: Above 200 °F
- 0 - Minimal: Will not burn

Reactivity rating considers only the stability of a substance when exposed to heat or water. The numbers indicate the following:

- 4 - Extreme: May detonate
- 3 - Serious: Shock or heat may detonate
- 2 - Moderate: May undergo violent chemical change
- 1 - Slight: Unstable if heated
- 0 - Minimal: Stable

The white section can contain several symbols including the following:

- W - Dangerously reactive with water
- OX - Oxidizer
- COR - Corrosive
- ACID - Acid
- Alk - Alkaline
- Bio - Biological
- Cryo - Cryogenic
- Radioactive Trefoil - Radioactive



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3.4 Title: **Chemical Hygiene Plan**

3.4.1 **General**

The LVMPD Forensic Laboratory's "Chemical Hygiene Plan" is required by OSHA 29 CFR 1910.1450 "Occupational Exposure to Hazardous Chemicals in Laboratories". This standard applies to all employers engaged in the Laboratory use of hazardous chemicals.

3.4.2 **Handling Hazardous Chemicals**

Hazardous chemical means any chemical which is classified as health hazard or simple asphyxiant in accordance with OSHA's Hazard Communication Standard (29 CFR 1910.1200).

The following are General Industry Standards:

3.4.2.1 **The Laboratory Facility**

- **Design/Ventilation/Quality/Usage:**
The Laboratory facility design has an appropriate general ventilation system with air intakes and exhausts located so as to avoid intake of contaminated air. It provides a source of continually replaced air for breathing and for input to local ventilation devices. It should not be relied on for protection from toxic substances released into the Laboratory. The Laboratory should be provided with adequate, well-ventilated stockrooms/storerooms, Laboratory hoods and sinks and other safety equipment including eyewash fountains and drench showers.
- **Maintenance:**
Some selected chemical hygiene related equipment has contractual scheduled maintenance (see **3.4.4 – Fume Hoods** and **3.4.5 - Other Protective Equipment and Proper Storage** for further details). Otherwise, the equipment is required to be properly disposed of immediately after use (e.g. gloves, etc.). Quarterly and monthly safety checks are performed in-house by the Health and Safety Liaison/designee. The exits are also checked to see that they are not obstructed or blocked. Custodial staff maintains cleanliness of floors, bathroom, trash receptacles, etc.

3.4.2.2 **Chemical Procurement, Distribution and Storage**

Receipt of Damaged/Leaking Chemicals/Hazardous Materials by Front Desk Personnel

- Gloves are available in the mail room and shall be utilized to handle any boxes that contain chemicals that may be leaking.



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- Boxes that may contain leaking chemicals will be placed in the grey bin in the mail room.
- The Detail that placed the order and/or Safety Liaison will be immediately notified of any leaking chemicals.
- **Manufacturer Labels:**
Policies regarding the labeling of secondary containers are contained in **3.3.5 - Labeling**.
- **Chemical Labels:**
Policies regarding the labeling of the chemicals that have undergone preparation are contained in **5.1.3 – Reagents and Standards, Container Labeling** in the Technical Requirements Manual.
- **Storage:**
Incompatible hazardous chemicals are segregated in all Chemical Storage locations and are protected from heat sources and direct sunlight.

Under no circumstances shall reagent preparation or repackaging take place inside a Chemical Storage location.

Excess chemical storage is prohibited. Store only the amounts of material needed for the near future. Maintain inventory.

Periodically check chemical containers and labels for integrity and expiration. Expired chemicals need to be disposed of appropriately.

3.4.2.3 General Safety Rules and Precautions

- A bucket or an outside container should be used when transporting large volumes of hazardous substances.
- Read all labels for identity. Watch where containers are placed and keep them closed when not in use. Maintain good hygiene - keep the work area clean and free of clutter and chemicals. Clean up small spills promptly.
- Be aware of the associated hazards of any substance(s) that are being utilized and ensure that the correct procedures are being followed. Consult the MSDS/SDS if unaware of associated hazards. Do not use broken or cracked glassware for any procedures.
- No storage, handling or consumption of food or beverages is permitted in the Laboratory proper, with the exception that covered beverages are allowed in the Firearms Laboratory and Database Accessioning Room. Smoking, placing gum in the mouth, handling



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contact lenses or application of cosmetics and/or lip balm is also not allowed in areas where chemicals are present.

- Do not work alone in the Laboratory if the procedures being conducted are hazardous. Do not rush. Maintain focus on the task at hand. Avoid practical jokes or other behavior which might confuse, startle or distract another employee.
- Protect your routes of entry (inhalation, skin and eye contact, injection, or ingestion) and wear suitable PPE. Inspect gloves before use and be aware of breakthrough time, degradation and permeation rate of the gloves.
- Confine long hair and loose clothing (ties, jewelry, etc.). Wear closed toe shoes when actively working in the Laboratory areas (this excludes administrative/office areas).
- Do not smell or taste chemicals. Do not use mouth suction for pipetting or starting a siphon.
- Keep flammable materials away from heat, sparks or flames and keep incompatible materials away from each other.
- Do not leave any reaction unattended. Be conscious of any reactions that are being heated and vent any apparatus which may discharge toxic chemicals into local exhaust devices (fume hoods).
- Wash hands and any areas of exposed skin following handling of chemicals.
- Remove gloves and Laboratory coats before leaving the Laboratory proper. Laboratory coats are not to be worn in administrative and carpeted areas of the Laboratory.
- Do not stay in the Laboratory proper during power outages (relocate to administrative areas).
- Do not work in the Laboratory proper during water outages.
- Report accidents immediately to a Manager or Supervisor.
- All visitors must be escorted (see **2.4 - Visitors and Tours** in the Administrative Manual for further details).

3.4.3 Criteria for Implementing Control Measures to Reduce Exposures

Measures taken to reduce employees exposure to hazards (chemicals, heat, particulate matter, punctures, etc.) is based on the outcome of a Job Hazard Assessment.



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The following is a list of controls to help reduce exposures:

- Chemical substitution - using a less hazardous compound.
- Engineering controls - containment, enclosures, ventilation systems, and facility design.
- Work process selection - selecting processes to contain airborne materials.
- Administrative controls - written safety documentation, training and limiting access to hazardous areas.
- Personal protective equipment (PPE) - respirators, gloves, and chemical protective clothing, etc.
- Work practices - personal hygiene, effective use of hoods and other engineering controls and Laboratory techniques.

3.4.4 Fume Hoods

Measures taken to ensure proper and adequate performance of fume hoods are:

- 1) Fume hoods have been designed to provide adequate exhaust coordinated with the general ventilation of the building. They are designed to be left on at all times. Hoods containing hazardous chemicals or hazardous evidence are **NOT** to be turned off.
- 2) Shut off switches have been added to fume hoods to help with noise reduction, and ventilation concerns. The fume hoods must be turned on when in use or when chemicals are being stored in the hood itself or in cabinets underneath.
- 3) Chemical Fume hoods should maintain an average face velocity of 60-100 feet per minute for use with hazardous chemicals.
- 4) Sash height is indicated on the hood with a locking safety latch or an arrow indicating maximum height the sash should be opened. When the fume hood is not in use, the sash should be closed, leaving about ¼ inch space for air flow.
- 5) All fume hoods will be inspected annually by an external contractor to ensure that proper face velocities are maintained. Records of these inspections will be maintained in the Resource Manager and/or Qualtrax.

3.4.5 Other Protective Equipment and Proper Storage

Maintenance schedule:

Protective Equipment/Proper Storage	Frequency	Performed by
Fire extinguishers**	monthly	Lab Health & Safety Liaison/designee
	annually	External contractor



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Protective Equipment/Proper Storage	Frequency	Performed by
Fire detection system	four times annually	Thomas and Mack (Property Management)
Fire Suppression System (Flow)	annually	External contractor
Respirators/SCBA's	prior to use	Clan lab team members/NIBIN squad
Voluntary use respirators	monthly	Voluntary use respirator user
Facility safety inspection	monthly	Lab Health & Safety Liaison/designee
Eye wash stations**	monthly	Lab Health & Safety Liaison/designee
Emergency showers**	monthly	Lab Health & Safety Liaison/designee
First Aid Kits**	quarterly	Lab Health & Safety Liaison/designee
Proper Storage of compressed gases	monthly	Lab Health & Safety Liaison/designee
REMSTAR interlocking safety bar	monthly	Lab Health & Safety Liaison/designee

** These items are indicated on **evacuation maps** posted throughout the Laboratory. All Laboratory employees must be familiar with the location of these items and have the shared responsibility of ensuring that these items are in good working order.

3.4.6 Personal Protective Equipment (PPE)

All Laboratory employees will wear the PPE appropriate for the potential hazards involved in their tasks in order to minimize the exposure or risk for the employee and others. PPE is provided by LVMPD.

In any Forensic Laboratory, the variety of evidence encountered and the analytical procedures utilized pose potential safety hazards of many types. Hazards most often encountered in the Laboratory include infectious agents from liquid and dried biological samples and chemicals, either as evidence or as reagents used in analysis, which may be carcinogenic, mutagenic, corrosive, flammable, poisonous, or otherwise harmful. In addition, the routes by which a Laboratory employee may be placed at risk vary. Exposure may occur through inhalation, direct contact or indirect contact and can be reduced through the use of the proper protective clothing and equipment.

3.4.6.1 Protective Clothing

The proper protective clothing can be an effective barrier in preventing direct or indirect contact with harmful agents. Several types of garments are provided by the Laboratory for use by employees.

Laboratory coats are the most common form of protection from most types of Laboratory analyses of evidence. Laboratory coats form a physical barrier which prevents harmful agents from collecting on the employee's street



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clothing. However, Laboratory coats will not protect the employee from spills or airborne vapors which can permeate cloth.

If additional protective clothing is required for a particular process, the appropriate protective clothing shall be selected by reviewing the MSDS/SDS or other literature and the clothing shall be provided to Laboratory staff. For example, tyvek coveralls may be required when handling a clandestine laboratory site.

- 1) Laboratory coats will be worn **at all times** when handling hazardous materials or when handling evidence which bears or contains hazardous materials. All "laboratory" functions require the use of Laboratory coats. Those forensic functions performed in an office environment do not necessitate the use of Laboratory coats, unless hazardous materials are associated with the evidence.
- 2) When leaving the Laboratory proper or entering carpeted areas, the employee should hang his/her Laboratory coat in the Laboratory proper. Laboratory coats utilized with evidentiary analyses shall not be worn in the administrative areas of the Laboratory when taking breaks, eating or performing administrative tasks.
- 3) Laboratory coats which have been worn during evidence examination must be laundered or cleaned when soiled or contaminated. Laboratory coats are laundered by a commercial laundry service and laundry bags are available in the Laboratory area to facilitate pick-up.
- 4) Laboratory coats contaminated with a potentially hazardous substance should be removed and replaced with a clean coat. Contaminated Laboratory coats must be isolated from non-contaminated coats and areas by containing it in a biohazard bag prior to placing it in the commercial laundry pick-up bag.

3.4.6.2 Glove Protection and Selection

Protective gloves will be worn when handling hazardous materials, chemicals of unknown toxicity, corrosive materials, rough or sharp-edged objects, and very hot or very cold materials. When handling chemicals in a laboratory, disposable latex, vinyl or nitrile examination gloves are usually appropriate for most circumstances. These gloves will offer protection from incidental splashes or contact.

When working with chemicals with high acute toxicity, working with corrosives in high concentrations, handling chemicals for extended periods of time or immersing all or part of a hand into a chemical, the appropriate glove material should be selected, based on chemical compatibility.

3.4.6.3 Gloves for Biological Contaminants

Very thin and flexible latex, nitrile, or vinyl gloves will provide adequate protection against infectious agents during the handling of dried or liquid



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physiological fluids with minimal loss of dexterity. However, they will not protect the employee against punctures from needles. These gloves should be discarded after each use to further minimize the likelihood of contamination of other surfaces.

- 1) Latex/vinyl/nitrile gloves must be worn whenever either dried or liquid physiological fluids are handled or during the collection of evidence from bodies.
- 2) The gloves must be removed and discarded before answering the telephone or leaving the Laboratory examination areas.
- 3) Gloves should be removed using techniques which minimize any potential contact with the outside of the glove. After removal, hands should be washed immediately.
- 4) Fresh gloves should be used each time to minimize the potential transfer of infectious agents to the hands.
- 5) Gloves shall be inspected for holes, blisters, swelling, discoloration or cracking before use. These gloves should be discarded after each use to further minimize the likelihood of contamination of other surfaces or when damaged or punctured. Ensure that rings, jewelry and fingernails do not compromise the integrity of gloves.
- 6) If hands have open wounds (scratches, paper cuts, etc.), these need to be covered with a bandage prior to putting on gloves to act as an additional barrier.

3.4.6.4 Gloves for Chemical Protection

As with protective clothing, the extent of protection against chemicals is related to the nature of the chemical, the thickness, structure and composition of the glove, and the intensity and duration of the exposure. Gloves of the same type from different manufacturers may vary in chemical resistance. For most organic and corrosive materials, neoprene or nitrile gloves are sufficient if they are heavy enough. If the analyst is unsure as to which glove type offers adequate protection, the MSDS/SDS for that specific chemical should be consulted.

The appropriate protective gloves must be worn whenever hazardous chemicals are handled. Hazardous chemicals are those which are toxic, carcinogenic, mutagenic, corrosive or for which the hazards are unknown. Situations requiring the use of gloves include, but are not limited to: mixing reagents, cleaning glassware, sampling or transferring chemicals to another container. Gloves used in the Laboratory for chemical protection should be discarded if chemicals are spilled on them.

The gloves must be removed and properly discarded before answering the telephone or leaving the Laboratory examination areas.



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3.4.6.5 Foot Protection

To minimize the hazard to feet from chemicals, infectious agents and falling objects while maintaining comfort, guidelines have been developed for protective footwear. Sandals and open toe shoes are prohibited when actively working in the Laboratory. There may also be occasions requiring increased foot protection. Clandestine laboratory response may require the use of disposable tyvek booties. In the process of handling a hazardous chemical spill, rubber boots may be required or in the instance of a biological fluid spill, disposable booties may also be required.

3.4.6.6 Eye and Face Protection

Laboratory employees will use the appropriate eye or face protection whenever there is a reasonable expectation that an injury to the eyes or face could result from the task being performed.

Injuries or hazards to the face and/or eyes consist of four general types:

- Infectious hazards - The membranes of the eyes provide a potential route of entry for infectious agents into the body. The splashing of liquid blood into the eyes, in particular, can cause an infection in the individual.
- Chemical hazards - Splashing a hazardous chemical on the face, in the eyes, in the nose or in the mouth can cause blindness, disfiguring injuries, or systemic consequences from ingestion. In addition, toxic vapors can enter the body more readily through the eyes than through the skin.
- Radiation injuries - Exposure to ultraviolet light/ionizing energy can cause cumulative irreversible injury to the eyes. Even reflected light can cause eye damage.
- Contact/abrasion hazards - Damage can be caused by even non-hazardous particulate matter getting into the eye.

Employees must protect themselves whenever performing tasks where there is reason to believe that such injuries may occur (whether in the Laboratory, at a scene or attending a training class) by using the proper eye and face protection.

When performing tasks where corrosive or very toxic chemicals may splash, a full face shield or goggles and face mask should be worn. These types of tasks may be performed in a chemical fume hood with the sash lowered to protect the face. Glasses will not prevent chemicals from reaching the eyes.

Glasses or goggles should be worn when handling more than a few drops of liquid blood (regular prescription lenses will suffice for this purpose). As an alternative, blood samples may be handled in a fume hood with the sash



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lowered to protect the face. If the blood is being splashed to create blood spatters, goggles AND A FACE MASK must be worn.

Face shields should be worn when working with large volumes of hazardous or biohazardous material. Face shields must be used in conjunction with safety glasses or goggles.

Contact lenses may be worn in the laboratory, but do not offer any protection from chemical contact. If a contact lens becomes contaminated with a hazardous chemical, rinse the eye(s) using an eyewash fountain and remove the contact lens immediately. Contact lenses that have been contaminated with a chemical must be discarded.

Approved light filtering glasses must be worn by any employee who may be exposed to ultraviolet light.

If prescription glasses worn in the Laboratory examination area by employees are not safety glasses, the employee should use safety goggles over his/her glasses or change to safety glasses when they are required.

The proper eye or face protection will also be provided to any authorized Laboratory visitor who is exposed to any of the above conditions.

3.4.6.7 Respiratory Protection

Respiratory protection is to prevent breathing air contaminated with harmful dust, fog, fume, mist, gas, smoke, spray or vapor. The primary objective shall be to prevent atmospheric contamination, as far as feasible, with accepted engineering control measures. These measures along with work practice controls are adequate and maintained to prevent the need for respirators other than the voluntary use of filtering facepieces. An employee who is required to use a respirator (NIBIN Squad and Clandestine Laboratory Response team members) provided by the employer shall have an annual medical exam, questionnaire and fit testing as outlined in the Department Manual **5/110.13 – Respiratory Protection Program**. Respirator training will also be provided on at least an annual basis, and also when the type of respirator changes, or inadequacies in the employee's knowledge indicate it is necessary, in accordance with OSHA regulation 29 CFR 1910.134.

If respirator use is not required by the Department, but an employee chooses to wear a filtering facepiece (i.e. Dust mask or N95) voluntarily, the employee must sign a copy of Appendix D to Section 1910.134 and a LVMPD Voluntary Use of Respirators form approved by the Risk Management Section.

3.4.7 Employee Training

The employer shall provide employees with information and training to ensure they are advised of the hazards of chemicals present in their work area.



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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. Refresher training shall be provided to those who demonstrate a lack of caution in their area of assignment, who show a willful disregard to the hazards in their work area and when an incident occurs involving hazardous chemicals.

The employees shall have available and be informed of:

- This Chemical Hygiene Plan.
- Hazard Communications
- The contents of the OSHA 29 CFR 1910.1450 standard and its appendices
- The permissible exposure limits (PEL) for OSHA regulated substances: Located on the MSDS/SDS USB flash drive in the main bullpen or electronically at H:\CB\Forensics\General\Chemical Inventory (MSDS).
- Sign and symptoms associated with exposures to hazardous chemicals used in the Laboratory: Located in the NIOSH Pocket Guide to Chemical Hazards maintained in the Chemistry Manager's Office.
- The location and availability of known reference material on the hazards, safe handling, storage and disposal of hazardous chemicals found in the laboratory: Located on the MSDS/SDS in the main bullpen or electronically at H:\CB\Forensics\General\Chemical Inventory (MSDS) and the NIOSH Pocket Guide to Chemical Hazards and the Emergency Response Guidebook maintained in the Chemistry Manager's office.

The employees' required training shall include:

- The physical and health hazards of chemicals in the work area.
- Measures employees can take to protect themselves from these hazards, including appropriate engineering and administrative controls, emergency procedures and personal protective equipment.
- MSDS/SDS
- Proper labeling, storage, and waste disposal practices.
- Applicable details of this Chemical Hygiene Plan.
- Hazard Communications.

3.4.7.1 Prevention of Spills and Accidents

With regard to cleaning up of hazardous chemicals or responding to an emergency release, the Laboratory is exempt from meeting the "HAZWOPER" criteria of OSHA standard 29 CFR 1910.120 for the following reasons:

Section (a)(1)(i-v) applies to clean-up operations and actions at uncontrolled hazardous waste sites; hazardous waste operations at treatment, storage, and disposal facilities; and emergency responses to hazardous substance release.



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An emergency response to a release of hazardous chemical(s) means a response effort by employees from outside the immediate release area or other designated responders (e.g., fire department) to respond to an occurrence which results, or is likely to result in an uncontrolled release of a hazardous substance.

Small, incidental spills of hazardous substances which can be absorbed, neutralized or otherwise controlled at the time of release by employees in the immediate release area, or by maintenance personnel, are not considered to require emergency response within the scope of OSHA standard 29 CFR 1910.120 (a)(3).

All small spills and leaks shall be promptly cleaned up and do not require the presence or assistance of the Fire Department. Use the appropriate PPE, equipment, and disposal procedures. Notify a Manager/Supervisor whenever an accident or spill occurs (see **3.7.5.7.1 - Small, Incidental Spills/Releases**)

Spill control kit materials are available in each discipline handling hazardous chemicals so personnel can clean up small spills promptly. The spill kits are designed to control solvents, acids, caustics and mercury. The kits should be inspected quarterly to assure their contents are complete and are located where they will have the most benefit.

In the event of a large or significant spill, a "Corrective Action Report" will be completed to initiate an investigation into the occurrence (see **3.7.5.7.2 – Large Spills/Releases**). Corrective action will document the remedy to the situation and any retraining of employees.

3.4.7.2 Clean-up Procedures

The following is meant as a general guideline for the small spill clean-up of certain types of chemicals. It is not intended to relieve employees of the duty to familiarize themselves with the information contained within the MSDS/SDS on specific clean up requirements. These clean up procedures are to be attempted only after donning the appropriate PPE such as, Laboratory coats, gloves, eye protection and particulate face mask.

3.4.7.2.1 Acids

- 1) Acids may be absorbed by covering the spill with sand, vermiculite or other non-reactive loose absorbent material, then sweeping up the material and discarding as hazardous waste.
- 2) Use water cautiously. **Avoid the use of water with Nitric and Sulfuric Acids.**
- 3) Each laboratory detail is stocked with universal spill kits. Place the socks from these kits around a spill to keep it from spreading. Place an absorbent pad over the spill. Dispose of the pad and socks in an appropriate container.



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- 4) Additionally, acids may be neutralized by sprinkling sodium bicarbonate (baking soda) over the spill, scooping the mixture up, sealing it and properly discarding it as hazardous waste.
- 5) The spill site must be further cleaned by either flushing with water or by washing with a sodium bicarbonate solution.
- 6) **Large**, uncontrollable spills will require the immediate evacuation and a call to **9-911**.

3.4.7.2.2 Caustic Alkalis and Ammonia

- 1) Use extreme care to avoid skin contact. Caustic alkalis are difficult to wash off the skin.
- 2) Solids may be swept up into a suitable container, sealed and then properly discarded as hazardous waste. If sweeping creates airborne particulates, then the appropriate respiratory protection should be donned.
- 3) Each laboratory detail is stocked with universal spill kits. Place the socks from these kits around a spill to keep it from spreading. Place an absorbent pad over the spill. Dispose of the pad and socks in an appropriate container.
- 4) Additionally, basic liquids can be neutralized with citric acid.
- 5) Alkaline liquids may also be absorbed with sand, vermiculite or other loose absorbent material, which is scooped up, sealed and disposed of as hazardous waste. Liquids may also be absorbed onto a spill pillow and disposed of as hazardous waste.
- 6) Extinguish all ignition sources if ammonia or methylamine is involved. Each can form explosive mixtures with air at certain concentrations.
- 7) After clean up, wash the spill site with copious amounts of water. **CAUTION:** the spill site will be very slippery until the residue is cleaned up.
- 8) **Large**, uncontrollable spills will require the immediate evacuation and a call to **9-911**.

3.4.7.2.3 Inorganic Salts

- 1) Solutions or solids can be mixed with loose absorbent, scooped into a suitable container, sealed and disposed of as hazardous waste.

3.4.7.2.4 Volatile Hydrocarbons, Alcohols, Ketones, Phenol and Esters

- 1) Immediately eliminate all sources of ignition and flammables.



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- 2) **Small** amounts may be absorbed onto paper towels and properly discarded.
- 3) **Small** amounts may be absorbed with sand, vermiculite, loose absorbent or a spill pillow, packaged in an airtight container and disposed of as hazardous waste.
- 4) If **large** amounts of highly flammable chemicals are spilled, evacuate the area immediately without turning on or off switches. Leave doors open to facilitate ventilation. Call **9-911**.

3.4.7.2.5 First Aid Measures

- Eye contact - flush eyes promptly with water for 15 minutes or until the victim is taken for medical evaluation.
- Ingestion - encourage the victim to drink large amounts of water unless they become nauseated. Do not induce vomiting.
- Skin contact - flush the affected area promptly with water and remove any contaminated clothing. Seek medical attention if the symptoms persist.
- Inhalation - evacuate the area and move the victim into fresh air.

3.4.7.2.6 Disposal of Hazardous Chemicals

Disposal of all chemical waste materials in the Laboratory or at scenes must be in compliance with local, state and federal regulations. Disposal must also be performed in a safe manner to minimize harm to people, other organisms, and the environment. The disposal of hazardous materials falls under a number of state and federal statutes. In practice, most disposal is regulated by either the Nevada Division of the Environmental Protection Agency (under the direction of the Federal Environmental Protection Agency) or the local health district. The following regulations may apply:

- Federal Safe Drinking Water Act of 1974
- Federal Toxic Substances Control Act of 1976
- Federal Environmental Protection Agency Regulations
- Department of Transportation Regulations
- State of Nevada Hazardous Waste Management Plan

3.4.7.2.7 Chemical Waste Generated in the Laboratory

Chemical waste generated in the Laboratory may be disposed of by placing the chemical into a suitable, labeled waste container and disposed of as non-hazardous or hazardous waste. Chemicals should not be poured down the drain, however, trace and residual amounts may enter the sewer system when glassware is washed. Unneeded chemical stock, excess chemical stock, unlabeled and unreadable chemicals will be disposed of as either non-hazardous or hazardous waste.

3.4.7.2.8 Waste Disposal Segregation, Collection and Storage Procedures



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- 1) Biological Hazardous Waste - All biohazard waste will be accumulated in rigid waste receptacles (red or orange) and clearly marked as such with the distinctive "biohazard" symbol. This waste will include the actual biohazard waste (if not of evidentiary nature) plus all disposable equipment, glassware, protective clothing and tools used in handling such evidence which may not be effectively cleaned. Reusable equipment, glassware, protective clothing (safety glasses/goggles, etc.) and tools must be cleaned prior to re-use. Biohazard receptacles are collected regularly by an external contractor.
- 2) All glass (broken and disposable):
 - that has **NOT** been in contact with a physiological specimen or other body fluid, are **non-biohazard** and will be disposed of in a rigid, designated "glass disposal" and may be disposed of through normal garbage collection methods unless they are considered an item of evidence.
 - that has been in contact with a physiological specimen or other body fluid, are **biohazard** and will be disposed of in rigid waste receptacles (red or orange) and collected regularly by an external contractor.
- 3) All sharps, scalpels and needles will be disposed of in rigid waste receptacles (red or orange) and collected regularly by an appropriate external biohazard waste container.
- 4) Phenol/Chloroform/Isoamyl Alcohol - Carboic acid waste (phenol) is generated by the DNA laboratory. This waste is disposed of in a separate labeled hazardous waste container.
- 5) Hazardous chemicals or waste must be disposed of in a properly labeled D.O.T. approved hazardous waste container.
- 6) Mercury generated from broken thermometers or other means will be collected using a mercury spill kit and disposed of in a properly labeled D.O.T. approved hazardous waste container.
- 7) Picric Acid will be disposed in a separate labeled hazardous waste container
- 8) Dry Ice is used to ship chemicals/materials that need to be kept frozen during transport. Dry ice will be placed in a fume hood and allowed to evaporate. Do **NOT** place dry ice in the sink or outside to evaporate.

Hazardous and non-hazardous waste is collected, segregated appropriately and stored in properly labeled D.O.T, approved hazardous waste containers at a central location for pick-up by a Department approved external contractor. **(See also 3.3.6- GHS Label Binders (Bright Green Binders))**



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3.4.8 Prior Approval of Laboratory Activities

A Laboratory operation, procedure or activity shall require prior approval by the Laboratory Director/designee if:

- The procedure involves potentially fatal chemical *allergens* or *embryotoxins**
- The procedure involves chemicals of *moderate and high chronic toxicity* or *high acute toxicity**

* These are considered particularly hazardous substances.

3.4.9 Medical Consultation and Examination

All employees have the opportunity to receive medical attention, including any follow-up examinations which the examining physician determines to be necessary, under the following circumstances:

- Signs and symptoms develop that may be related to handling a chemical. A causative relationship shall be considered possible until appropriate evaluation indicates otherwise.
- Air monitoring indicated concentrations of contaminants exceeds the permissible exposure limit (PEL).
- An event such as a spill, leak, or explosion results in a hazardous exposure.

Should any incident of possible exposure to either hazardous chemicals or bloodborne pathogens occur, it will be immediately reported to the employee's supervisor for documentation. This documentation will be on the LVMPD Occupational Injury/Illness/Exposure Report (LVMPD 26) and will follow procedures established in Department Manual **5/110.14 – Reporting On-Duty Injury, Job-Related Illness, and Occupational Exposure to Communicable Diseases** which includes notifying the Risk Management Section and providing them a copy of LVMPD 26.

Medical treatment for occupational injuries is contracted by LVMPD and the Risk Management Section can provide a list with appropriate providers and employee instructions. All medical examinations and consultations shall be performed by or under the direct supervision of a licensed physician contracted by LVMPD and shall be provided without cost to the employee, without loss of pay and at a reasonable time and place. This includes:

- Evaluation of medical history and examination.
- Specific treatment as necessary.
- Laboratory tests, if required.
- Follow-up examination.

If a worker is referred for medical consultation or examination, management shall provide the physician with:

- The identity and nature of any chemical to which the employee may have been exposed, including the MSDS/SDS, if one is available.
- The conditions under which any possible overexposure occurred including quantitative exposure data, if available.



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The physician shall provide a written opinion to the Risk Management Section which shall include:

- Any recommendations for further medical follow-up.
- The results of the medical examination and any associated tests.
- 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.
- A statement that the employee has been informed by the physician of the results of the consultation or medical examination and of any medical condition that may require further examination or treatment.

NOTE: The written opinion shall not reveal specific findings or diagnosis unrelated to occupational exposure.

3.4.9.1 Medical Records

Records for occupational and exposure injuries and illnesses are maintained by the Risk Management Section as are any exams/annual physicals.

3.4.9.2 Employee Vaccinations

All Laboratory employees who handle physiological samples in the course of their duties will be offered the Hepatitis A/B vaccination (see Department Manual **5/110.10 – Occupational Exposure to Blood or Other Potentially Infectious Material** for further details) and the Tuberculosis Mantoux Purified Protein Derivative (PPD) skin test (see Department Manual **5/110.08 – Occupational Exposure to Tuberculosis** for further details). Employees choosing not to receive the vaccination or skin test must sign a waiver, however, employees may opt to receive the vaccine at any time.

3.4.10 Chemical Hygiene Responsibilities

The Chemical Hygiene Officer shall be the Department's Safety Coordinator and be responsible for the implementation of the Chemical Hygiene Plan. The Laboratory's Health and Safety Liaison will assist the Safety Coordinator in their duties on Laboratory premises.

It is the responsibility of each Laboratory employee to know and follow good chemical hygiene practices, wear appropriate personal protective equipment (PPE) and conduct each operation in accordance with the Chemical Hygiene Plan.



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3.5 Title: **Lead Standard**

3.5.1 **General**

OSHA Lead Standard 29 CFR 1910.1025 applies to all occupational exposure to lead. Lead is an element which is a heavy metal at room temperature and pressure. Lead, within this standard means, elemental lead, all inorganic lead compounds and a class of organic lead compounds called lead soaps.

The employer shall assure that no employee is exposed to lead concentrations at or greater than the Permissible Exposure Limit (PEL) of 50 micrograms per cubic meter of air ($50 \mu\text{g}/\text{m}^3$) averaged over an 8-hour period. If an employee is exposed to lead for more than 8 hours in any work day, the permissible exposure limit, as a time weighted average (TWA) for that day, shall be reduced according to the following formula:

Maximum permissible limit (in $\mu\text{g}/\text{m}^3$) = 400 divided by hours worked in the day. [29 CFR 1910.1025(c)(2)].

This written program, related employee information and training material, shall be made available to OSHA's Assistant Secretary and Director, any affected employee or authorized employee representative upon request and shall be revised and updated every 6 months to reflect the current status of the program if and when PEL's are exceeded.

3.5.2 **Evaluation of Lead Exposure**

Evaluation of employee lead exposure shall be made based on:

- 1) Any information, observations, calculations and airborne lead measurements which would indicate employee exposure to lead.
- 2) Any previous measurements of airborne lead.
- 3) Any employee complaints of symptoms which may be attributable to lead exposure.
- 4) The exposure of employees to lead, such as those test firing weapons. Medical surveillance is required to monitor or evaluate an employee's exposure to airborne lead concentrations. It is to protect them from adverse health effects and to prevent lead-related disease. These employees shall be required to have biological monitoring of blood lead (Pb) levels, which shall be below $40 \mu\text{g}/100\text{g}$ of whole blood, and zinc protoporphyrin (ZPP) level sampling along with medical exams and consultations. The biological monitoring, exams



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and consultations will be performed during their annual department physical by or under the supervision of a licensed physician at no cost, as well as on new employee(s) or on an existing employee prior to being assigned to an area of lead exposure.

3.5.3 Lead Toxicity and Monitoring

- Acute - Potent, systemic poison with lethality within days. Acute encephalopathy which causes seizures, coma and death from cardiorespiratory arrest.
- Chronic - Severe damage to blood-forming tissue and the nervous, excretory and reproductive systems. Symptoms include loss of appetite, metallic taste in the mouth, anxiety, constipation, nausea, pallor, excessive tiredness, weakness, insomnia, headache, nervous irritability, muscle and joint pain or soreness, fine tremors, numbness, dizziness, hyperactivity and colic.

If initial tests indicate lead levels at or above the action level of $30 \mu\text{g}/\text{m}^3$, the employer is required to conduct employee monitoring. Levels below the action level require written documentation of the initial results and will not need to be repeated unless production, process, control or personnel changes occur which may result in new or additional exposure to lead.

Sampling or monitoring which is representative of the exposure for each employee who is exposed to lead may be required to ensure employee exposure is below the action level. If it is determined to be at or above the action level of $30 \mu\text{g}/\text{m}^3$ for an 8 hour shift (or $26.7 \mu\text{g}/\text{m}^3$ for a 9 hour shift), certain monitoring, notification and re-mediation requirements will be triggered. These can be found in OSHA 29 CFR 1910.1025.

If monitoring has been done, within 5 working days of the receipt of the results, each employee must be notified in writing of the results that represent their exposure.

The employer shall provide affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to lead. The observer shall follow all safety rules and regulations and shall be required to wear any necessary personal protective equipment (PPE) when entering areas with the potential of lead exposure.

3.5.4 Minimizing Lead Exposure

Occupational exposure to lead is limited within the Forensics Laboratory environment though the potential for lead exposure does exist, particularly in the Ballistics Laboratory. Operations in which lead exposure may occur include discharging firearms, handling ammunition, ammunition components and firearms.

Engineering, work practice and administrative controls will be used to minimize lead exposure.



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3.5.4.1 Engineering Control Measures

The following engineering control measures are in effect:

- 1) Ventilation shall be used.
- 2) The Ballistics Laboratory has been separated from the surrounding areas to reduce peripheral exposure to lead.

Work practices will minimize the employees' exposure to lead. Employees should wear appropriate clothing, including laboratory coats. PPE is provided to the employee by the employer at no charge and will be replaced when used, worn or damaged. Laboratory coats will be cleaned regularly by an external contractor.

3.5.4.2 Administrative Control Measures

The following administrative control measures are in effect:

- 1) Food and drink are strictly prohibited in the Ballistics Laboratory, as is applying cosmetics or smoking.
- 2) After handling ammunition or discharging firearms, employees should clean their hands with provided wipes or wash their hands using the nearby sink.
- 3) Surfaces in the Ballistics Laboratory will be cleaned as needed.

3.5.5 Biological Monitoring Based on Results

Table for conducting biological monitoring based on results of analyses is:

every 6 months	When exposure monitoring $\geq 30 \mu\text{g}/\text{m}^3$ (action level) for more than 30 days/year.
every 2 months	when blood lead level is $\geq 40 \mu\text{g}/100 \text{g}$ of whole blood
monthly	when an employee has been removed from exposure to lead due to an elevated blood lead level
follow-up	in two weeks from the initial blood sampling test that indicates a blood lead level exceeds $60 \mu\text{g}/100\text{g}$ whole blood

Employees will be notified within 5 working days in writing upon receipt of their biological monitoring results from their employer when blood lead levels exceed $40 \mu\text{g}/100\text{g}$. When it exceeds $60 \mu\text{g}/100\text{g}$ of whole blood, the employee is required to be temporarily removed with Medical Removal Protection benefits. The employee is entitled to a second medical opinion.

Employee information training shall include our written program and OSHA's lead standard appendices A and B which are readily available to all affected employees. All employees who are subject to lead exposure at or above the action level or for whom the possibility of skin and eye irritation exists shall participate in the lead training program prior to the time of initial job assignment and at least annually thereafter. OSHA's current lead standard appendices A and B, as well as the LVMPD Forensic Laboratory's lead safety



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annual refresher training are located at H:\CB\Forensics\General\SAFETY
DETAIL INFO\Lead Information. Completed training records are maintained
in Qualtrax.

3.5.6 Record Keeping

Records of exposure monitoring, removal of employees for medical reasons and medical surveillance reports shall be maintained for at least 40 years or for the duration of employment plus 20 years, whichever is longer. At the expiration of the retention period for the records, the employer shall notify OSHA's Director at least three months prior to the disposal of such records and shall transmit those records to the OSHA Director if requested within the period.

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LVMPD FORENSIC LABORATORY SAFETY MANUAL

3.6 Title: **Firearms Safety in the Ballistics Laboratory**

3.6.1 **Four Basic Rules of Firearms Safety**

The four basic rules of firearms safety will be followed at all times when handling firearms for any reason:

- Treat all guns as if they are loaded.
- Always keep the muzzle pointed in a safe direction.
- Keep your finger off the trigger until ready to fire.
- Know the target and what is beyond it.

3.6.2 **Additional Rules for the Ballistics Laboratory**

When test firing in the Forensic Laboratory's Ballistics Laboratory the following additional rules should be followed:

- Ensure video is being monitored by Laboratory personnel when test firing.
- Wear appropriate eye and ear protection. Required signage shall be posted and not removed or defaced.
- Load and unload firearms only in the shooting range and do not chamber a cartridge until the muzzle is pointed into the shooting port (tube) of the water tank or down range.
- When shooting into the water tank and when practical, the muzzle of the firearm should be contained within the confines of the shooting port (tube) during firing.
- Ensure that no one is down range while firing.
- Follow the manufacturer's recommendations regarding the quality and clarity of the water in the water tank.

3.6.3 **Tourniquets**

The Firearms Detail has three (3) tourniquets in their lab:

- One for the in-house shooting range
- One in the lab proper
- One to take to off-site shooting ranges.

The tourniquets will be C-A-T (Combat Application Tourniquet) approved by the department. All Firearms Detail personnel will receive training on the use of the tourniquets. All new employees assigned to the Firearms Detail will receive the training prior to being released for independent casework.



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LVMPD FORENSIC LABORATORY SAFETY MANUAL

3.7 Title: **Emergency Action and Fire Prevention**

3.7.1 **General**

The following outlines the procedures employees should follow in the event of an emergency. This document does not supersede an employee's responsibilities as emergency response personnel.

For an explanation of duties assigned under the plan or for further information, contact the Risk Management Section.

3.7.2 **Evacuation Notification**

Notification of evacuation will be given by: the PA system or by Air Horns. The PA system is accessed by dialing 3161. After the beep, dial the number that corresponds to the area(s) you are paging:

- 1 - CSI
- 2 - Forensic Lab
- 3 - Photo Lab
- 4 - DNA
- 7 - Forensic Lab and the Photo Lab
- 8 - Forensic Lab and DNA
- 0 - Forensic Lab, Photo Lab, CSI and DNA

The words "This is an Emergency" shall be repeated three times followed by an explanation regarding the nature of the emergency.

In the event the evacuation alarm is given, all employees will proceed calmly to the nearest safe exit and report to the designated gathering point - **Parking lot between Forensic Lab and CSI (outside, southeast corner).**

Each employee as they are leaving will **NOT** leave anyone behind to either operate equipment or finish up work processes. Gather people up as you go out the door.

Employees will be accounted for by their peers/co-workers who have been working with them the day of the emergency.

Employees will not return until the "all clear" is given by Emergency Response Personnel.

3.7.3 **Emergency Phone Numbers and Facilities**

In the case of an emergency, dial:

9-911



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Posted by the telephones, is a listing of available Emergency Facilities (locations and phone numbers). This sheet is currently YELLOW.

3.7.4 Safety Inspections

Fire evacuation drills will be conducted annually.

Inspections conducted by the Health and Safety Liaison/designee include:

- Overall cleanliness of the Laboratory facilities (dust, dirt, trash)
- Prevention of accumulation of chemicals
- Segregation of incompatible chemicals (flammable, combustible)
- Integrity of the chemical storage room
- Proper chemical waste disposal
- Monthly and quarterly inspections of facilities, eye wash stations, emergency showers, first aid kits, compressed gas storage and the Remstar interlocking safety bar

Fire extinguishers, fire alarms and fire suppression systems will be maintained by an external contractor at least annually.

3.7.5 Emergency Circumstances

The following emergency situations are detailed below:

- Fires (3.7.5.1)
 - Critical operations (3.7.5.1.1)
 - Specific fire hazards (3.7.5.1.2)
- Active shooter (3.7.5.2)
- Loss of utilities (3.7.5.3)
 - Benign reasons (3.7.5.3.1)
 - Undetermined reasons (3.7.5.3.2)
- Bomb threat/Weapons of mass destruction (3.7.5.4)
- Shelter in place (3.7.5.5)
- Suspicious mail/packages (3.7.5.6)
 - Signs of suspicious mail/packages (3.7.5.6.1)
 - Appearance (3.7.5.6.2)
 - Other suspicious signs (3.7.5.6.3)
 - What to do with a suspicious package/mail (3.7.5.6.4)
- Interior chemical release (3.7.5.7)
 - Small incidental spills/releases (3.7.5.7.1)
 - Large spills/releases (3.7.5.7.2)
- Exterior chemical release (3.7.5.8)
- Severe weather (3.7.5.9)
 - Flood (3.7.5.9.1)
 - Tornados (3.7.5.9.2)
 - Earthquakes (3.7.5.9.3)
- Compressed gases (3.7.5.10)
- Civil unrest (3.7.5.11)
- Workplace violence (3.7.5.12)
 - Indicators of problem behavior (3.7.5.12.1)
 - Behavior (3.7.5.12.1.1)
 - Attitude (3.7.5.12.1.2)



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- Responding to workplace violence **(3.7.5.12.2)**

3.7.5.1 Fires

If you discover a fire, and there is considerable heat, significant smoke or fumes, or the potential of being trapped - **GET OUT!**

- Leave area of fire immediately.
- Call **9-911**.
- Evacuate area, moving towards nearest exit away from the fire.
- Never turn your back to the fire.
- Do not open door if it's warm/hot to the touch.
- Notify co-workers as you exit.
- Last person out of area should ensure door is shut and tagged.
 - There is a red tag hanging on the door knob on each door in each lab. This tag will be placed on the outside door knob to alert others that the room is clear.
- Report to: **Parking lot between Forensic Lab and CSI (outside, southeast corner).**
- Do not return to building until given "all clear" by emergency response personnel.

3.7.5.1.1 Critical Operations

Biohazards stored on property - no shut-down processes necessary, but area could be contaminated during firefighting activities. Emergency response personnel should be notified.

If the fire is **small**, incipient, less than 1 minute old

- **PASS**
 Pull the pin
 Aim low
 Squeeze the lever
 Sweep the nozzle/hose

Remove any one of the three elements of a fire: Fuel, Oxidizer or Heat.

3.7.5.1.2 Specific Fire Hazards

The table below lists response(s) to be taken for emergency hazards associated with the following:

HAZARD	LOCATION	RESPONSE
Compressed Gas Storage	In southeast corner of Forensic Lab, near the backdoor	Evacuate area, call 9-911, notify response personnel of hazards
Chemical Storage	Throughout all Details	Evacuate area, call 9-911, notify response personnel of hazards



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HAZARD	LOCATION	RESPONSE
Electrical Equipment	Throughout Laboratory	Pull breaker or power shut off, call 9-911
Flammable Liquid and Chemical Processing	DNA, Chemistry, Toxicology and Latent Prints	Evacuate area, call 9-911, notify response personnel of hazards
Ammunition	Firearms vault	Evacuate area, call 9-911, notify response personnel of hazards

3.7.5.2 Active Shooter

Upon the report of gunfire, quickly determine the most reasonable way to protect your own life, bearing in mind the following options:

- **Evacuation** -- If there is an accessible escape path, attempt to evacuate the premises. Consider the following:
 - Have an escape route and plan, bearing in mind that the situation will dictate how far from the building a “safe” area will be.
 - Evacuate regardless of whether others agree to follow.
 - Leave your belongings behind.
 - Help others escape, if possible.
 - Prevent individuals from entering an area where the active shooter may be.
 - Keep your hands visible.
 - Follow the instructions of any police officers.
 - Call 911 (cell phone) or 9-911 (work phone) when you are safe.
 - Each section should have a “check-in” plan so that employees who have evacuated can alert others that they are safe.
- **Hide Out** -- If evacuation is not possible, find a place to hide where the active shooter is less likely to find you, and remain quiet. Hiding places should:
 - Be out of the active shooter’s view.
 - Provide protection if shots are fired in your direction (i.e., an office with a closed and locked door or a door barricaded with furniture).
 - Not trap you or restrict your options for movement.
 - Other Considerations:
 - Cell phones and pagers should be silenced.
 - Large items like desks or cabinets may provide concealment, but not cover.

If evacuation and hiding out are not possible, try to alert the police (via 9-911-workphone or 911-cellphone) to the shooter’s location. If it is not



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safe to speak, leave the phone line open and allow the dispatcher to listen.

- **Take Action Against the Active Shooter** -- As a last resort, and only when your life is in imminent danger, attempt to disrupt or incapacitate the active shooter by:
 - Yelling and/or acting as aggressively as possible against him or her.
 - Throwing items and improvising weapons.
 - Returning fire with a firearm, if available.
 - **Committing to your actions.**

When the Police Arrive

Law enforcement's purpose is to stop the active shooter as soon as possible. Officers will proceed directly to the area in which the last shots were heard.

The first officers to arrive on the scene will not stop to help injured persons. Once you have reached a safe location, or an assembly point, you will likely be held in that area by law enforcement until the situation is under control, and all witnesses have been identified and questioned. Do not leave the safe location or assembly point until law enforcement authorities have instructed you to do so. Keep in mind the following, when law enforcement arrives:

- Remain calm, and follow officers' instructions.
- Put down any items in your hands.
- Immediately raise hands and spread fingers.
- Keep hands visible at all times.
- Avoid making quick movements towards officers, including grabbing or holding on to them for safety.
- Do not stop to ask officers for help or direction when evacuating; just proceed in the direction from which officers are entering the premises, and avoid pointing and yelling.
- Be able to provide the following information (if you observed the shooter):
 - Location of the active shooter.
 - Number of shooters.
 - Physical description of the shooter(s).
 - Number and types of weapons held by the shooter(s).
 - Number of potential victims at the location.
 - Possible hazards inside the building (i.e., explosives, firearms), and their locations.

3.7.5.3 Loss of Utilities

Loss of utilities may be a sign of a more serious hazard. Investigate the cause of utility loss; call Nevada Energy (9-702-402-2900 - Power Outage and Emergency) and Southwest Gas (1-877-860-6020 – Natural Gas Leaks).

3.7.5.3.1 Benign Reason

If reason is benign (e.g., power outage):

- It may be necessary to turn off analytical and HVAC equipment.



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- Employees will remain at the workplace, but must not stay in the Laboratory proper (must be in administrative areas).

3.7.5.3.2 Undetermined Reason

If reason is *undetermined* and there are indications of a more serious problem:

- Call **9-911**.
- Evacuate the building immediately.
- Notify co-workers as you exit (see **3.7.2 - Evacuation Notification**).
- Last person out of area should ensure door is shut and tagged.
- Report to: **Parking lot between Forensic Lab and CSI (outside, southeast corner)**.
- Do not return to building until given "all clear" by emergency response personnel

3.7.5.4 Bomb Threat/Weapons of Mass Destruction (WMD)

In the event of a bomb threat or WMD incident:

- Call **9-911**.
- If requested, examine your area for suspicious objects.
- Note and report suspicious circumstances, packages and activities.
- Verify and inspect all inbound deliveries and services.
- Terminate all non-essential deliveries and services.
- **AVOID OPENING CLOSED ITEMS OR TURNING ON/OFF ELECTRICAL ITEMS.**
- If ordered to evacuate, report to the designated gathering point OR alternative area indicated by responding personnel.
- If you receive a bomb threat, attempt to get as much information from the caller as possible.
- Follow shelter in place procedures if instructed to do so.
- For a major incident, the Department Manual **5/213.05 - Emergency Mobilization Plan** establishes a two-stage plan with "A and B" shifts.

3.7.5.5 Shelter in Place

If advised to remain at work (or home), protect yourself by:

- Closing and locking all windows and exterior doors.
- Turn off all fans, heating and air conditioning systems.
- Stay away from windows.
- Go to an interior room with the fewest windows/doors that is above ground level.
- Have a working radio and stay tuned for further instructions.

3.7.5.6 Suspicious Mail/Packages

3.7.5.6.1 Signs of Suspicious Mail or Package

- Unexpected or from someone you do not know.
- Not addressed to a specific person.
- Addressed to someone no longer at the address.
- Handwritten with either no or an unreadable return address.
- Postmarked city does not match return address.



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- Marked with restrictive endorsement - like “personal” or “confidential”.
- Excessive postage.
- Common words are misspelled.
- Incorrect titles or titles without names.
- Marked with threatening language.

3.7.5.6.2 Appearance

- Lopsided or lumpy.
- Unusual contents that can be felt through the package.
- Soiled or stained packages.
- Powdery substance felt or seen.
- Strong odor.

3.7.5.6.3 Other Suspicious Signs

- Excessive weight.
- Ticking sound.
- Wires or unusual contents that protrude from the package.

3.7.5.6.4 What to do with a Suspicious Package or Mail

- DO NOT shake or empty contents.
- DO NOT sniff, touch, taste or look closely at it or at any contents that may have spilled.
- DO NOT carry it, show it to others, or allow others to touch it.
- If it is already in your hands when you become suspicious, put it down on a stable surface and DO NOT handle.
- IMMEDIATELY wash your hands thoroughly with soap and water.
- Alert others in the area and leave the area.
- Close any doors and prevent others from entering the area.
- If possible, shut off the ventilation.
- Call **9-911** and notify your Manager/Supervisor.

3.7.5.7 Interior Chemical Release

See **3.4 - Chemical Hygiene Plan** for further details on chemical releases within the Laboratory.

3.7.5.7.1 Small, Incidental Spills/Releases

Small spills can be absorbed, neutralized or otherwise controlled at the time of release by employees in the immediate area or by maintenance personnel are not considered to be emergency responses within the scope of OSHA standard 29 CFR 1910.120 (a)(3).

3.7.5.7.2 Large Spills/Releases

- Evacuate area immediately, moving towards nearest exit away from the hazard.
- Call **9-911**- Inform operator of chemical and type of hazard.
- Notify H₂O Environmental at **9-702-396-4148** or 24 hour Hazmat Response at ***8-1-866-H2O-SPILL (*8-1-866-426-7745)**.
- Do not assist in hazard clean-up.
- Notify co-workers as you exit (see **3.7.2 - Evacuation Notification**).



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- Turn off air handling systems (excluding hoods) so as not to introduce hazards to other areas of the building.
- Last person out of area should ensure door is shut and tagged.
- Report to: **Parking lot between Forensic Lab and CSI (outside, southeast corner).**
- Do not return to building until given "all clear" by emergency response personnel.

3.7.5.8 Exterior Chemical Release

If a hazardous chemical is released in proximity to your building, emergency response personnel will direct you to either evacuate or shelter in place. In the event you are directed to shelter in place:

- Turn off all air handling systems immediately (air conditioners, etc.).
- Shut all windows and doors.
- Seal cracks under doors with any available materials.
- Wait for emergency response personnel to give "all clear" prior to exiting.

3.7.5.9 Severe Weather

3.7.5.9.1 Flood

In the event of an imminent flood, management will be responsible for determining if employees may be safely released to their homes prior to the flood or whether they must shelter in place.

- Turn on any available radio or television to get up-to-date information on the weather.
- It may be necessary to turn off all electrical equipment and remove moveable electrical equipment and hazardous chemicals to higher ground.
- If released to drive home, never attempt to drive across running water and avoid downed power lines, trees, etc.

3.7.5.9.2 Tornadoes

While not common, tornadoes are possible in this area. In the event of a tornado warning:

- Turn on any available radio or television to get up-to-date information on the weather.
- It is critical to shelter in-place.
- Avoid windows and retreat to interior rooms.
- If released to drive home, avoid downed power lines, trees, etc.

3.7.5.9.3 Earthquakes

Earthquakes occur in this area.

- Pick "safe places". A safe place could be under a sturdy table or desk or against an interior wall away from windows and bookcases, or tall furniture that could fall on you. The shorter the distance to move to safety, the less likely you will be injured.
- Wait in your safe place until the shaking stops, then check to see if you are hurt. You will be better able to help others if you take care of



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yourself first, then check the people around you. Move carefully and watch out for things that have fallen or broken, creating hazards.

- Be on the lookout for fires. Fire is the most common earthquake-related hazard, due to broken gas lines, damaged electrical lines or appliances, and previously contained fires or sparks being released.
- In case of gas leaks, DO NOT smoke, use matches or lighters, or candles. After an earthquake, open doors carefully.
- Listen to the radio for emergency directions.
- Be prepared for aftershocks.

3.7.5.10 Compressed Gases

Compressed gas cylinders are under great pressure and could become lethal projectiles. For liquefied gas spills or visible fog cloud:

- Evacuate spill area.
- Ventilate spill area for at least two hours.
- Do not direct water at spill.
- Avoid contact with gases. Liquefied gases may cause frostbite.
- Asphyxiation may occur without warning when oxygen is displaced. Consider the density of gas in relation to air.
- Inhalation hazards may have long term, chronic effects.
- Consult the MSDS/SDS to determine properties and exposure characteristics.
- Re-enter ONLY when all liquid has evaporated and frost has disappeared.

3.7.5.11 Civil Unrest

From political and/or religious instigation, mob riots, coup attempts, demonstrations, etc.

- DO NOT attempt to engage in, mediate or confront the situation.
- Limit public access.
- Turn on any available radio or television to get up-to-date information on the condition of the unrest.
- Note and report suspicious circumstances, packages and activities.
- It may be critical to shelter in-place. Avoid windows and retreat to interior rooms.
- Lock all doors and windows. Maintain building integrity and security.
- Ensure emergency equipment is available.
- Turn off all unnecessary electrical equipment.
- If ordered to evacuate, report to the designated gathering point OR alternative area indicated by responding personnel.
- If released to drive home, do so carefully being aware of surroundings.

3.7.5.12 Workplace Violence

Workplace violence is violence or the threat of violence against workers and can range from threat and verbal abuse to physical assaults and homicide. OSHA's General Duty Clause requires employers to provide a safe and healthful workplace for all workers. To comply, an employer should prevent or abate a recognized violence hazard in the workplace by establishing a



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zero-tolerance policy toward workplace violence against or by their employees.

3.7.5.12.1 Indicators of Problem Behavior

Recognized behaviors and attitudes of disruptive, threatening or violent behavior described below.

3.7.5.12.1.1 Behavior

- Upset over recent work or personal event(s)
- Recent major change in behavior, demeanor, appearance
- Recently has withdrawn from normal activities, family, friends co-workers
- Intimidating, verbally abusive, harasses or mistreats others
- Challenges/resists authority
- Blames others for problems in life or work; suspicious, holds grudges
- Use/abuse of drugs and/or alcohol
- Unwelcome obsessive romantic attention
- Stalking
- Makes threatening references to other incidents of violence
- Makes threats to harm self, others or property
- Weapons - has or is fascinated with weapons
- Has known history of violence
- Has communicated specific proposed act(s) of disruption or violence

3.7.5.12.1.2 Attitude

- Is isolated or a loner
- Morally superior, self-righteous
- Feels entitled to special rights and that rules don't apply to them
- Feels wronged, humiliated, degraded; wants revenge
- Feels has no choices or options for action except violence

3.7.5.12.2 Responding to Workplace Violence

- call **9-911** if the threat is imminent or specific
- Remain calm and quiet. Try to defuse the situation with respectful concern and interest.

Do not take the behavior personally. If disruptive behavior continues or escalates, get yourself and others to safety. Do not attempt to intervene physically. NEVER touch the individual.

3.7.6 Medical Emergencies

In the event of a medical emergency:

Call **9-911** and inform operator of nature of emergency.

Employees of the Forensic Laboratory are trained in basic First Aid and can render interim care until emergency medical personnel arrive.

Employees that are *certified* in basic First Aid and/or CPR are required to be retrained every two years to maintain their certification.



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3.8 Title: **Aspergillus**

3.8.1 **Aspergillus**

Aspergillus is a group of molds that can pose a pathogenic problem. It grows in decaying vegetation including marijuana. Decay occurs as a result of harvesting plant material that is not adequately dried. The problem is prevalent when marijuana is placed in plastic bags. However, there is a potential for fungus development in quantities of moist marijuana placed in paper.

Aspergillus contamination resembles a powder, white to bluish-green in color. Anyone working with or handling such decaying plant material may be subject to potential health hazards arising from aspergillus and therefore, appropriate PPE must be utilized. If a marijuana sample shows signs of aspergillus contamination, the analyst should wear a filter mask (to prevent inhalation of aspergillus spores) and perform the examination in a chemical fume hood.

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3.9 Title: **Fentanyl Exposure and NARCAN (Naloxone)**

The following information was obtained from Fentanyl: A Briefing Guide for First Responders by the U.S. Justice Department Drug Enforcement Administration. This guide is available on the H: Drive: <H:\CB\Forensics\General\SAFETY DETAIL INFO\Fentanyl Information>

3.9.1 Routes of Exposure

Fentanyl and other Fentanyl-related substances are designed to be absorbed into the body by the following means:

- injection
- oral ingestion
- contact with mucous membranes
- inhalation
- transdermal transmissions (absorption through the skin)

To limit the potential for exposure, Laboratory personnel should refrain from the following while in the presence of any suspected Fentanyl-related substance:

- Eating
- Drinking
- Smoking

3.9.2 Personal Protective Equipment (PPE)

When encountering an unknown believed to contain fentanyl or a fentanyl-related substance, Laboratory personnel should, at a minimum, use the following PPE:

- Nitrile gloves
- Appropriate airway protection
- Appropriate eye protection
 - Face shield
 - goggles
- Disposable paper suits or paper coveralls
- Shoe covers

PPE that has come contact with fentanyl or fentanyl-related substances must be properly disposed of to minimize exposure to other people. PPE must be properly doffed to minimize exposure and then triple bagged.



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3.9.3 NARCAN (Naloxone) Nasal Spray

The LVMPD Forensic Laboratory is supplied with NARCAN (Naloxone) Nasal Spray. Naloxone is an antidote for opioid overdose. Immediate administration of Naloxone can reverse an opioid overdose. Naloxone should be administered by Laboratory personnel trained in its use. Training will be provided by the Forensic Laboratory at least once yearly. More information is available on the H: Drive: <H:\CBI\Forensics\General\SAFETY DETAIL INFO\Fentanyl Information>

3.9.4 First Aid

Symptoms of overdose usually occur within minutes and can include:

- drowsiness
- disorientation
- sedation
- pinpoint pupils
- skin rash,
- clammy skin
- respiratory depression or arrest

If an exposure or suspected exposure occurs, seek immediate medical attention by DIALING 9-911.

If there is suspected contact with skin, wash the exposed area immediately with soap and water. DIAL 9-911 for medical assistance.

- **DO NOT** use a hand sanitizer to remove suspected contact with Fentanyl. Hand sanitizers may contain alcohol which may increase the absorption of Fentanyl.

If there is suspected ingestion via the eyes or mouth and **the victim is conscious**, flush eyes and/or mouth with cool water. Make sure to flush visible substance AWAY from the eyes, nose, or mouth. DIAL 9-911 for medical assistance.

If there is a suspected inhalation, move the victim to fresh air. DIAL 9-911 for medical assistance.

NARCAN should be administered by properly trained personnel when an employee shows signs or symptoms of opiate exposure.

Additional information may be located at <W:\Safety Detail Information\First Aid - CPR - TQs - Trauma Kits>

3.9.5 Packaging of Evidence

If the item contains fentanyl or another fentanyl-related substance, then the item must be at least packaged and individually sealed into three (3) plastic bags. The outermost bag must be a nylon bag that is heat sealed. To minimize aerosolizing the substance, the heat sealer used must **not** evacuate the air from



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the bag that it is sealing.

It is ideal to package the items containing fentanyl or another synthetic opioid into an airtight metal can or plastic bucket.

Near the evidence label on the outside of the evidence package, write "Fentanyl" so people that will be handling the package are aware of its contents.

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