



# Delaware County Regional Sewer District Standard Operating Procedure

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## 1.0 PURPOSE

- 1.1 This document outlines the work procedures and policies that will be used to protect Delaware County Regional Sewer District (DCRSD) employees from potential health hazards associated with hazardous chemicals in the laboratory. This Chemical Hygiene Plan (CHP) is prepared in accordance with the requirements in the OSHA Laboratory Standard, 29 CFR 1910.1450.
- 1.2 The OSHA standard requires each laboratory employer to formulate and implement a Chemical Hygiene Plan which must include the necessary work procedures and policies that will be used to ensure that employees are protected from all potentially hazardous chemicals that are used in their work areas. These requirements will be met by implementation of procedures, providing personal protective equipment, providing employee training and information, medical consultation and examinations, hazard identification, and recordkeeping.
- 1.3 This Chemical Hygiene Plan applies to the DCRSD laboratory staff/operators and all visitors within the lab.

## 2.0 RESPONSIBILITIES

2.1 *Chain of Command* - The chain of command for the laboratory is as follows:

- Director of Environmental Services;
- Operations Superintendent;
- Operations Manager;
- Chemists.

2.2 *Director of Environmental Services*-This individual has responsibility for chemical hygiene and shall promote and provide continuing chemical hygiene support.

- In conjunction with Human Resources, will assist in notifying appropriate regulatory agencies in the event of an emergency which requires notification. If the Director is not available, then the Chain of Command will be followed. Examples of emergencies that require agency notification include an employee fatality, multiple hospitalizations, chemical release, or fire in conjunction.

2.3 *Operations Superintendent* - The Operations Superintendent is responsible for the development and implementation of chemical hygiene policies and practices at the laboratory. The Operations Superintendent shall:

- Ensure appropriate inspections are maintained;
- Provide or coordinate appropriate employee safety training;
- Assist the Operation Managers with the development of precautions and adequate facilities;
- Be familiar with the current legal requirements concerning regulated substances;
- Develop, implement and revise the Chemical Hygiene Plan.

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2.4 *Operation Manager*-The Operation Manager is responsible for chemical hygiene in the laboratory. The Operation Manager(s) shall:

- Ensure laboratory employees know and follow the chemical hygiene plan;
- Make protective equipment available and maintain in working order;
- Ensure appropriate training is provided;
- Ensure facilities and training for use of any materials being ordered are adequate;
- Ensure inspections are conducted of emergency equipment, chemical hygiene, and housekeeping;
- Be familiar with the current legal requirements concerning regulated substances;
- Determine the required levels of protective equipment and apparel;
- Monitor the procurement, use and disposal of chemicals used in the laboratory;
- Assist the Chemist in conducting periodic chemical inventories;
- Provide assistance for environmental monitoring of the laboratory environment;
- Determine the need for medical surveillance;
- Contact outside assistance in the event of an emergency: fire, medical, chemical release or designate an individual to obtain outside assistance;
- Assist and complete the emergency equipment and ventilation inspections.

2.5 *Chemist*- Each laboratory chemist is responsible for planning and conducting all operations in accordance with the chemical hygiene plan and procedures, developing good personal chemical hygiene habits, and inspecting their personal protective equipment and local exhaust ventilation hoods before each use. Individual laboratory staff/operators may be delegated responsibilities related to those outlined under the Operations Manager's areas of responsibility.

### 3.0 GENERAL LABORATORY PROCEDURES

3.1 *Behavior in the Laboratory*- Employees shall act in a professional manner at all times.

- Horseplay and practical jokes are expressly forbidden;
- Avoid working alone in the laboratory when appropriate.

3.2 *Visitors* to the laboratory are to be escorted by an employee and are the responsibility of that employee. All safety policies must be observed.

3.3 *Avoidance of Routine Exposures*- Skin contact with chemicals should be avoided.

- Do not smell or taste chemicals;
- Never pipette by mouth. Use a vacuum or a pipette bulb;
- Apparatus which may discharge toxic chemicals must be vented into local exhaust devices;
- Choose only those chemicals for which the quality of the available ventilation system is appropriate.

3.4 *Personal Habits in the Laboratory*

- Eating, drinking and cosmetic application are not permitted in the laboratory;
- Smoking is allowed only in designated smoking areas outside the laboratory;
- Food may not be stored in any refrigerator within the laboratory. Food may be stored only in the cafeteria;
- Hands should be washed before using the restrooms and before eating or smoking. Areas of exposed skin (i.e. forearms) with potential chemical contact should be washed before lunch and at the end of the shift;
- Confine long hair and loose clothing;
- Wear shoes at all times in the laboratory, opened toed shoes must not be worn in the laboratory;
- Be alert to unsafe conditions and see that they are corrected when detected.

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### 3.5 *Lifting of Heavy Objects*

- Lift heavy objects by bending at the knees - use your legs, not your back;
- Hold heavy objects close to your body;
- Get help in handling objects too heavy or bulky for one person.

### 3.6 *Housekeeping*

- Lab areas are to be kept clean and uncluttered. This will help prevent spillage, breakage, personal injuries and unnecessary contact of chemicals;
- Contaminated glassware should be washed immediately after use;
- Spills are to be cleaned up immediately from work areas and floors;
- Doorways and walkways shall not be blocked or used for storage;
- Access to exits, emergency equipment, and utility controls shall never be blocked.

## **4.0 CHEMICAL PROCUREMENT, DISTRIBUTION, AND STORAGE**

4.1 *Procurement/Receipt-* Any chemical type not on the existing inventory for the laboratory must have approval of the Operations Manager, or their designee, prior to purchase. The following must be considered:

- Proper storage and handling procedures;
- Proper disposal procedures;
- Facilities adequate to safely handle the material;
- Personnel adequately trained to handle the material.

4.2 Before a substance is received, information on proper handling, storage, and disposal will be available to those who will be using the chemical. A Safety Data Sheet (SDS) shall be requested for all hazardous chemicals if the SDS is not already on file.

4.3 No chemical should be accepted without an adequate identifying label. The label should include as a minimum the substance name, an appropriate hazard warning, and specific target organ effects.

4.4 All chemical containers must have a legible, firmly attached label. The date received shall be marked on the container as the shipment is unpacked.

### 4.5 *Inventory/SDS*

- The chemical inventory for the laboratory is maintained by the Chemist;
- A SDS will be maintained for all hazardous chemicals in the inventory;
- SDS shall be made readily accessible to laboratory employees.

### 4.6 *Storage/Use*

- Periodic inventories (at least semi-annually) shall be conducted by the Chemist, with unneeded items disposed of properly;
- Storage of chemicals at laboratory benches or other work areas shall be limited to amounts necessary or practical for one shift;
- The chemical fume hoods will not be used for chemical storage;
- When opening a chemical container for the first time place the date opened on the container;
- See Section 18, Chemical Handling Procedures, for specific storage and use recommendations.

## **5.0 HAZARD IDENTIFICATION**

5.1 *All chemical containers*, including secondary and waste containers must have a legible, firmly attached label showing the contents of the container. Labels will also contain initials of a responsible person. Additional information, as appropriate, includes concentration and date prepared (for solutions).

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- 5.2 *Labels* on incoming containers of hazardous chemicals shall not be removed or defaced. Once a container is empty the label should be marked empty. The container may be used for other purposes as long as the container is cleaned and relabeled.
- 5.3 *Chemical substances* developed in the laboratory should be assumed to be hazardous in the absence of other information.

## 6.0 ENVIRONMENTAL MONITORING

- 6.1 Employee exposures to OSHA regulated substances shall not exceed the permissible exposure limits specified in 29 CFR Part 1910, Subpart Z.
- 6.2 Employee exposures to any substance regulated by an OSHA standard shall be measured when there is reason to believe that exposure levels routinely exceed the action levels.
- 6.3 If initial monitoring results indicate that employee exposures are in excess of the action level or the permissible exposure limit, corrective action will be taken while monitoring requirements of the relevant standard are followed.
- 6.4 Affected staff will be notified of monitoring results in writing within 15 days of receipt. (Some OSHA standards require notification in less than 15 days. This will be documented in the requirements in specific chemical standards.)

## 7.0 MAINTENANCE AND INSPECTIONS

- 7.1 *The Chemist* will conduct the following inspections and document the result of the inspections at the specified intervals:
- After each use
    - Spill response materials will be inventoried and replaced as necessary.
  - ⊖ Weekly
    - Eyewashes
    - Safety showers
    - First aid kits
  - Monthly
    - Fire extinguishers
    - Egress Lighting
  - Quarterly
    - Local exhaust ventilation hoods (see section 17 for specifics)
    - Spill response materials
  - Annually
    - Fire alarms
    - Local exhaust ventilation hoods (see section 17 for specifics)
- 7.2 *The Operations Manager* will verify that fire extinguishers and fire alarms are inspected and serviced. The Operation Manager shall notify the *Operations Superintendent* when fire extinguishers, and fire alarms have been inspected and serviced.

## 8.0 MEDICAL PROGRAM

- 8.1 Medical surveillance, including medical consultation and follow-up, shall be provided under the following circumstances;
- Where exposure monitoring exceeds the action level for an OSHA regulated substance which has medical surveillance requirements.
  - Whenever a laboratory employee develops signs or symptoms that may be associated with a hazardous chemical to which the employee may have been exposed in the laboratory.
  - Whenever a spill, leak, or explosion results in the likelihood of a hazardous exposure, as determined by the *Operations Manager*.

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- 8.2 All examinations shall be provided at no cost to the employee, without loss of pay, and at a reasonable time and place.
- 8.3 First aid kits are available in all DCRSD facilities. Additional medical assistance, if required, would be rendered after transport to an appropriate professional medical facility.

## 9.0 PERSONAL PROTECTIVE EQUIPMENT

- 9.1 The *Operations Manager or their designee* will be responsible for the selection of personal protective equipment, acquiring approved equipment, maintaining availability, and establishing cleaning and disposal procedures.
- 9.2 *Employees* should not use any personal protective equipment until they have received formal instruction on the proper selection, use, and limitations of the equipment. In addition, personal protective equipment will be visually inspected for any impairments or defects prior to each use. If deficiencies are noted, the equipment should be cleaned, repaired, or replaced before use.
- 9.3 *Eye Protection*
- Safety glasses must meet the requirements of ANSI Z87.1;
  - Face shields with safety glasses underneath or chemical splash goggles are recommended when transferring or pouring acidic or caustic materials;
  - The use of contact lenses is not permitted while performing laboratory procedures. Exceptions may be made if contact lenses are recommended by an optometrist or ophthalmologist and the vision deficiency cannot be corrected with glasses. The optometrist or ophthalmologist must be informed of the nature of the employees' job. Chemical splash goggles must be worn over the contact lenses;
  - Before each use, eye and face protection is to be inspected for damage, i.e. cracks, scratches, debris.
- 9.4 *Gloves*
- Chemical resistant gloves shall be worn whenever the potential for hazardous skin contact exists;
  - The safety data sheet for the substance or glove selection charts should be referenced. **Table 1** lists some general classifications of chemicals and potential activities and suggested glove type;
  - Gloves shall be removed before touching other surfaces (door knobs, faucet handles);
  - Abrasion resistant gloves (such as leather) should be worn for handling broken glass or for other potentially abrasive situations. They should NOT be worn when handling chemicals;
  - Before each use, gloves are to be inspected for damage and contamination, i.e. tears, punctures, discoloration.

TABLE 1  
GENERAL CHART FOR GLOVE SELECTION

<u>Chemical Groups</u>	<u>Suggested glove</u>
Aldehydes	Butyl Rubber
Amines	Nitrile
Gasoline	Nitrile
Hydrocarbons	Nitrile
Hydroxyls	Butyl rubber, nitrile, Viton
Inorganic Acids	Neoprene
Inorganic Bases	Neoprene, nitrile

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Peroxides	Butyl rubber
<b><u>Sample Laboratory Activities</u></b>	<b><u>Suggested Glove (minimum)</u></b>
Sample login/handling	Nitrile
Dishwashing	Latex

#### 9.5 Shoes

- No sandals or open-toed shoes are to be worn by laboratory employees. The shoe should have a non-skid sole and should have a reasonable heel height;
- Safety shoes should be worn if there is potential for injury from heavy objects, i.e. handling drums, cylinders. Safety shoes must meet the requirements of ANSI Z41.

#### 9.6 Clothing

- Laboratory coats should be worn by laboratory employees whenever in the work area;
- If a spill occurs on the clothing, it must be laundered before reuse;
- The commercial launderer of any contaminated work clothing shall be notified of potentially contaminating substances;
- Staff will not take contaminated work clothing home to launder.

#### 9.7 Hearing Protection

- Hearing protection (ear muffs or plugs) are required whenever employees are exposed to 85 dbA or greater as an 8 hour time weighted average;
- Hearing protection is to be inspected before each use, for tears and contamination;
- If hearing protection is necessary, a hearing conservation program must be implemented according to OSHA 29 CFR 1910.95.

#### 9.8 Respirators

- Respirators are only to be used by trained individuals and used and selected in accordance with 29 CFR 1910.134.

### 10.0 EMERGENCY EQUIPMENT

10.1 *Emergency Equipment* is located throughout the laboratory. Each laboratory employee shall be familiar with the location, application, and correct ways to operate the following equipment:

- Fire extinguishers
- Chemical spill cleanup supplies
- Fire alarms
- Fire doors
- Safety showers
- Eye wash stations
- First aid kits

### 11.0 EMERGENCY RESPONSE PLAN

#### 11.1 Pre-Emergency Planning

- No universal Emergency Plan will do all things for all emergency situations. The most important component of emergency planning is prevention. Prevention measures range from employee training and facility inspection programs to engineering design of hazardous processes. The risks present in the laboratory include chemical releases, fires, and explosions. Emergency chemical release and structural firefighting will be conducted by the Local Fire Departments.

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#### 11.2 *Personnel Roles*

- Laboratory Employee - All laboratory employees shall be trained to identify chemical releases and notify the *Operations Manager*;
- The Local Fire Departments is designated as the emergency responder in case of an emergency chemical release.

#### 11.3 *Communication Systems*

- Alarms - A verbal notification shall be given for evacuation of the laboratory;
- Emergency Notifications - The *Operations Manager* shall notify Federal, State and/or Local agencies regarding fatalities, chemical releases, fires, etc. If the *Operations Manager* is not available, the Chain of Command will be followed.

#### 11.4 *Emergency Reporting*

- Reporting is applicable **ONLY** for the release of a Reportable Quantity of any “Extremely Hazardous Substance” or a CERCLA Hazardous Substance which results in exposure to persons outside the site boundaries. The following information is for the Ohio and Delaware County Title III agencies and is to be reported without delay to the extent the information is known at the time. The DCRSD Emergency Release Notification Worksheet is included in this standard operating procedure.

#### 11.5 *Evacuation Plan*

- Evacuation routes are identified on the Evacuation Map. All employees must be aware of the evacuation route for their area. Procedures for site security must be coordinated with the local fire, police, and emergency response agencies.

#### 11.6 *Chemical Release Response*

- Chemical releases should be reported to the *Operations Manager*. The person identifying the chemical release shall initiate the following sequence of actions:
- Remove all sources of ignition and evacuate the immediate area if necessary;
- Summon the *Operations Manager*;
- Relate any observations of the spill conditions to the *Operations Manager* such as if there are any injured persons in the area, the size or appearance of the release, the identity of the material, or any markings or labels observed on the container;
- Follow instructions on the SDS or spill clean-up kit;
- If the spill cannot be contained evacuate the site immediately and call 911.

#### 11.7 *Fires and Explosions*

- Any fires which is in the initial stages and can be easily extinguished using the proper portable extinguishing device without the use of protective clothing or respiratory protection. The following actions shall be taken by employees in the containment of early stage fires:
- If there are injuries, notify medical personnel;
- Initiate firefighting activities in accordance with training received;
- Notify the *Operations Manager* who will complete appropriate reporting requirements.

#### 11.8 *Structural Fires and Explosions*

- A structural fire is one which has advanced beyond the early stage. Protective equipment and firefighting equipment beyond a fire extinguisher or small hose must be used. In the event of a structural fire or explosion the employees shall initiate the following actions:
- Evacuate the area immediately;

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- Notify the Local Fire Departments by dialing 911;
- Warn personnel in adjacent areas if evacuation is necessary;
- Determine if anyone is injured and contact medical personnel if required;
- After the incident, review the cause of the event and implement future preventative measures.

#### 11.9 *Emergency Equipment*

- Emergency equipment in the laboratory includes the following:
- Absorbent (granular, pillow, sheet, sock, etc.)
- Application equipment (shovels, scoops, etc.)
- Containment equipment (salvage drums, leak patches, etc.)
- Neutralizing solutions;
- Fire Extinguishers;
- Decontamination equipment (scrub brushes, buckets, etc.)

### 12.0 RECEIPT OF INCOMING SAMPLES

12.1 All incoming samples (water, soil, sludge, etc.) will be handled utilizing the following precautions.

- Personal Protective Equipment;
- Gloves - Minimum requirements are nitrile. If the hazards of the samples are known or expected to be a certain nature, gloves should be selected appropriately. See Section 9, Personal Protective Equipment;
- Eye/face protection. Safety glasses with safety shields are minimum equipment. Chemical splash goggles or face shields will be utilized for liquid samples if there is a probability of pouring or spilling the samples;
- Clothing. Lab aprons or coats should be worn when handling liquid samples with known or potentially acidic or alkali characteristics.

#### 12.2 Radioactivity

- Radioactive samples are not accepted.

#### 12.3 Disposal

- Samples will be disposed of in accordance with waste disposal procedures outlined in Section 16 of the Chemical Hygiene Plan.

### 13.0 ACCIDENT REPORTING

13.1 *All accidents*, whether resulting in injury or damage, must be reported as soon as possible but no later than the end of the shift to the *Operations Manager* or their designee (in this order).

13.2 Injuries requiring medical attention must be reported immediately and appropriate medical treatment provided. Bring the SDS in the event of a chemical exposure.

13.3 Within 24 hours of the accident an incident report form must be completed and provided to the *Operations Manager*. Measures for prevention of future accidents must be identified.

13.4 All accidents will be carefully analyzed by the *Operations Manager* with the results distributed to all who might benefit.

### 14.0 INCIDENT REPORT RECORDKEEPING

14.1 *The Delaware County Safety Officer* shall complete the OSHA Injury and Illness Report (OSHA Form 300).



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14.2 Medical records and employee exposure records are maintained in accordance with the Delaware County Water Reclamation Department recordkeeping policy. (OSHA typically requires records be kept for the duration of employment plus 30 years.)

14.3 *The Delaware County Safety Officer* analyzes all safety related incidents and investigates, if necessary. All incident reports shall be forwarded to either the Safety Officer or Human Resources as per the Delaware County Safety Policies document.

## 15.0 EMPLOYEE TRAINING

15.1 The objective of training is to adequately inform laboratory workers about the work in the laboratory, its risks, and what to do if an accident occurs. The training shall be provided by the *Operations Manager or their designee*.

### 15.2 *Training Frequency*

- Training shall be provided at the time of an employees' initial assignment to a work area where hazardous chemicals are present, prior to assignments involving new exposure situations, and annually.

15.3 Contents of the training should include:

- Hazardous chemicals present in their work area;
- Proper handling and disposal of hazardous chemicals;
- Use of fire extinguishers, fire prevention and response;
- Emergency evacuation procedures, other emergency procedures, some staff may be trained in first-aid;
- Sample handling procedures;
- Interpretation of a SDS;
  - Use of engineering controls;
  - Personal hygiene;
  - The proper selection, use, and limitations of personal protective clothing;
  - Laboratory standard operating procedures;
  - The contents of the Chemical Hygiene Plan;
  - The hazardous chemicals inventory.

### 15.4 *Reference Materials*

- Reference materials on the hazards, safe handling, storage and disposal of hazardous chemicals are located in the laboratory office. Some common reference materials include the 'NIOSH Pocket Guide to Chemical Hazards' and the National Safety Council series on Safety.
- Safety Data Sheets shall be maintained by the Operations Manager for all hazardous chemicals used in the laboratory. They are filed alphabetically.

## 16.0 WASTE DISPOSAL PROCEDURES

### 16.1 *Broken Glass*

- Equipment (broken beakers, pipettes, etc.) should be promptly swept up and disposed of in containers labeled "Broken Glass Only".

### 16.2 *Broken Thermometers*

- Immediately clean up broken glass and spilled mercury from broken thermometers. Do not handle mercury by hand. Special kits are available to clean up mercury. Enclose thermometer pieces in a sealed jar and follow established disposal procedures.

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### 16.3 *Non-hazardous waste*

- Samples of municipal waste water treatment plant sludge may be disposed of along with the routine laboratory refuse. The waste container lids should be securely fastened and carefully place in the regular laboratory refuse container;
- Samples to be discharged to the sanitary sewer must meet the requirements listed below. If there is any doubt, consult the *Operations Manager* or place the sample in the storage area setup for hazardous waste disposal;
  - No solid or viscous substances capable of obstructing flow;
  - No flammable or explosive substances. (flashpoint below or equal to 140°F)
  - No toxic or poisonous substances;
  - No radioactive wastes;
  - No oils or greases.

16.4 *Safe handling* of waste is important when disposing of or handling samples for disposal the following protective equipment must be worn:

- Gloves;
- lab coat;
- Safety glasses.

## 17.0 VENTILATION

### 17.1 *General Guidelines*

- General laboratory ventilation shall provide air flow into the laboratory from non-laboratory areas and out to the exterior of the building;
- All laboratory doors must remain closed, except when being used for entrance and egress;
- Local exhaust ventilation must not be located near doors, windows, air diffusers, fans and/or other sources of cross drafts;
- All reactions that produce unpleasant and/or potentially hazardous fumes, vapors, or gases must be run with local exhaust ventilation, i.e. in fume hoods;
- Reactions with corrosive fumes should be conducted in a hood lined with corrosion resistant material;
- The sash of the hood is to be lowered to within 6 inches of the floor of the hood when the hood is in use. It should be lowered to maintain effectiveness of the ventilation system and provide personnel protection.

### 17.2 *Maintenance and Inspections*

- Daily inspections by operators should be conducted at the beginning of each shift;
- Visually inspect the hood area for storage and other visible blockages;
- Place a piece of tissue paper at the hood opening and observe it for directional flow;
- Observe the pressure reading on the pressure gauge (if provided). Safe operating pressures should be provided by the ventilation engineer that designed/installed the system;
- Periodic inspections. The quality and quantity of ventilation shall be evaluated upon installation, quarterly, and whenever a change in local ventilation devices is made. These periodic inspections should be recorded;
- Capture velocity should be measured with a velocity meter. The capture velocity at the face of the hood should be 100±20 fpm. Velocity measurements must be taken with the sash raised to a full open position. The face velocity shall be determined by averaging the velocity of six readings taken in different areas of the fume hood face;

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- Exhaust hoods should be smoke tested by generating smoke several inches in front of the sash with the sash in operating position. Observe if all of the smoke is adequately captured. Smoke should also be generated at several points at and above the interior working space to locate any dead or turbulent spots.

### 17.3 Annual Maintenance

- Overall maintenance of the local exhaust ventilation should be performed annually by a qualified person;
- Exhaust fan maintenance-The necessary maintenance (lubrication, belt checking, fan blade deterioration, speed check) should be recommended by the fan manufacturer;
- Ductwork-All ductwork should be checked for corrosion, deterioration, and buildup of liquid or solid condensate. Dampers should be lubricated and checked for proper operation;
- Air cleaning equipment-In-line exhaust charcoal or HEPA filters should be monitored for contaminant buildup. Mechanical or absorbent filters not equipped with differential pressure gauges, or audible alarms, should be leak-checked.

### 17.4 Ventilation Failure

- Employees should be trained in the following procedures to follow when hood failure occurs;
- Close the sash on the ventilation system to contain hazardous materials;
- Turn off powered equipment, fuel sources etc. that can be disengaged without endangering employees;
- Evacuate the area at the discretion of the *Operations Manager* depending on the toxicity and volatility of the chemicals in use in the hood;
- If evacuation is warranted, notify other laboratory employees not to enter the area;
- Post a DO NOT ENTER sign;
- The *Operation Manager* will call the designated company administrator who is responsible for notifying the proper emergency response team.

## 18.0 CHEMICAL HANDLING PROCEDURES

18.1 Know as much as possible about the chemical you are handling. Read the label on the container, Safety Data Sheets, literature in the library, and consult the *Operation Manager*.

### 18.2 Flammable Liquids Hazards:

- Vapor can form an ignitable mixture in air;
- Many flammable liquids are solvents and are potentially hazardous by inhalation;
- Skin contact should be avoided, irritation or skin absorption are possible with some chemicals in this group;
- Damage to the eyes ranges from irritation to severe damage.

### 18.3 Storage:

- All flammables should be stored in a flammable materials cabinet when not in use.

### 18.4 Controls:

- Work in the hood as much as possible;
- Transfer from drums only when both drum and safety can are grounded and bonded;
- All spills must be cleaned up immediately, with the spill area properly decontaminated;
- Emergency showers and eye washes shall be used when skin or eye contact occurs. Get first aid attention immediately.

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18.5 *Examples of Flammable Liquids:*

- Isopropyl alcohol;
- Toluene

**19.0 Corrosive Chemical Hazards:**

19.1 Hazards include contact with the skin, eyes, respiratory or digestive tract causes severe irritation or burns.

19.2 *Storage*

- Always store concentrated acids and bases in appropriate drip trays or the plastic carrier if used frequently;
- Always transport concentrated acids and bases in the plastic carrier;
- Always store oxidizing acids (nitric, sulfuric, perchloric) away from organic chemicals, paper, wood, or other flammables;
- Drip tray residue must be removed daily.

19.3 *Controls*

- Wear protective clothing;
- In case of splash:
  - Flush affected area with large amounts of water for at least 15 minutes.
  - Remove contaminated clothing and discard.
  - Seek medical attention.
  - Never add water to concentrated mineral acids or bases.

19.4 *Examples of Corrosive Chemicals*

- Nitric Acid
- Ammonium Hydroxide

**20.0 Reactive Chemicals Hazards:**

20.1 Hazards include:

- Water sensitive - React violently in the presence of water.
- Pyrophors - Ignite in air at or below room temperature in the absence of added heat, shock, or friction.

20.2 *Storage*

- Water sensitive - Store according to directions on the label;
- Pyrophors - Store in an atmosphere of inert gas or under kerosene; exclude air

20.3 *Controls*

- Wear proper personal protective equipment;
- Read precautionary label;
- Use only in a hood.

20.4 *Examples of Reactive Chemicals*

- Water sensitive - Sodium, Potassium, Metal alkyls;
- Pyrophors - Phosphorus, Metal alkyls

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### **21.0 Compressed Gases Hazards:**

#### 21.1 Hazards include:

- Compressed gases contain large amounts of energy which can cause serious injury and physical damage;
- Compressed gases may also be flammable, toxic, or corrosive;
- Storage;
- Compressed gases must be stored in the upright position with caps in place and secured with a strap or chain.

#### 21.2 Controls

- Transport only with cap in place and in a suitable carrier;
- Use only appropriate fittings and regulators. Each gas type has special fittings;
- Do not permit gases of one type to contaminate another type. Use check valves and/or regulators;
- Always open valves slowly and cautiously;
- Do not let cylinder go completely empty;
- Return “empty” cylinders to storage, clearly marked.

#### 21.3 *Examples of Compressed Gases*

- Hydrogen;
- Argon

### **22.0 Carcinogens, Mutagens, Teratogens, and Reproductive Toxins Hazards**

#### 22.1 Hazards Include:

- Exposures can potentially induce carcinogenesis, mutagenesis, and adverse reproductive outcomes;
- Storage;
- Store these chemicals in the hood;
- Maintain the minimum quantity necessary.

#### 22.2 *Controls*

- Work in a designated area.
- Wear protective clothing.
- Work only with adequate engineering controls, such as hoods, glove boxes, etc.

#### 22.3 *Examples of Carcinogens, Mutagens, Teratogens and Reproductive Toxins*

- Benzene
- Vinyl chloride
- Lead

### **23.0 Toxic Metals Hazards**

#### 23.1 Hazards Included:

- Toxic by inhalation, ingestion, and possible skin absorption.

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### 23.2 Storage

- The minimum quantity necessary should be kept on hand.

### 23.3 Controls

- Work in the hood as much as possible.
- Spills should be cleaned up immediately, with the work area properly decontaminated.

### 23.4 Examples of Toxic Metals

- Lead
- Mercury

## 24.0 WORKING WITH SUBSTANCES OF MODERATE TO HIGH CHRONIC TOXICITY OR HIGH ACUTE TOXICITY

24.1 A designated area must be established for work with “select carcinogens”, reproductive toxins, and substances which have a high degree of acute toxicity.

24.2 The following procedures must be followed for all work with “select carcinogens”, reproductive toxins, and substances of high acute toxicity:

- The designated areas in the laboratory include all the laboratory hoods;
- Work with these highly hazardous materials requires strict adherence to the analytical protocol and safety procedures. The *Operations Manager* must approve all procedures requiring the use of these materials;
- Use and store these materials only in designated areas;
- Always avoid skin contact by use of gloves and long sleeves (and other protective apparel as appropriate). Always wash hands and arms immediately after working with these materials;
- The *Operations Manager* shall maintain records of the amounts of these materials on hand, amounts used, and the names of the workers involved in their use;
- Be prepared for accidents and spills. Assure that at least 2 people are present at all times. Store breakable containers containing these substances in chemically resistant trays. If a spill occurs outside the hood, evacuate the area immediately and summon the *Operations Manager*;
- Thoroughly decontaminate or incinerate contaminated clothing or shoes. Store contaminated waste in closed, labeled waste containers.



# EMERGENCY RELEASE NOTIFICATION WORKSHEET

Delaware County Regional Sewer District  
OSHA 29 CFR 1910.1450

### EMERGENCY RESPONSE AGENCY

Delaware County Emergency Management Agency 1-740-833-2180

### STATE EMERGENCY RESPONSE COMMISSION

Ohio EPA Emergency Response 1-800-282-9378

### NATIONAL RESPONSE CENTER

1-800-424-8802

### RELEASE INFORMATION

This is the Delaware County Regional Sewer District. We have a hazardous chemical release in progress and request emergency response from fire and other agencies in accordance with prior plans.  
The emergency released includes a Title III ( choose one):

- "Extremely Hazardous Substance"
- "Superfund (CERCLA) Hazardous Substance"

The following information is available : (read numbers 1 through 11 below)

1. Chemical name of substance released \_\_\_\_\_
2. Quantity released \_\_\_\_\_
3. Date of release \_\_\_\_\_
4. Time of Release \_\_\_\_\_
5. Duration of Release \_\_\_\_\_
6. Release was into (circle one) Air Surface Water Sewer Ground
7. Anticipated acute or chronic health risks \_\_\_\_\_
8. Advise on medical attention for exposed individuals ( if needed) \_\_\_\_\_
9. Proper Precautions to take ( including evacuation if needed) \_\_\_\_\_
10. Name and Phone number of person to contact \_\_\_\_\_
11. Response actions to contain the release \_\_\_\_\_

Comments \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

LOCAL RESPONSE AGENCY	DATE _____	TIME _____	NAME _____
STATE EMERGENCY RESPONSE AGENCY	DATE _____	TIME _____	NAME _____
NATIONAL RESPONSE CENTER	DATE _____	TIME _____	NAME _____

PRINT NAME \_\_\_\_\_ SIGNATURE \_\_\_\_\_