# Knowledge Assessment

**Assessment event 1 of 2**

# Trainer & Assessor Marking Guide

## Criteria

### Unit code, name and release number

MSL943004 - Participate in laboratory or field workplace safety (1)

### Qualification/Course code, name and release number

MSL30118 - Certificate III in Laboratory Skills (1)

MSS50218 - Diploma in Environmental Monitoring and Technology (1)

\*\*Amend the qualification box before distributing to the student. The information here should only contain the qualification the student is enrolled in\*\*

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For queries, please contact:

Innovative Manufacturing, Robotics and Science SkillsPoint

Hamilton Campus

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RTO Provider Number 90003 | CRICOS Provider Code: 00591E

This assessment can be found in the: [Learning Bank](https://share.tafensw.edu.au/share/access/searching.do?doc=%3Cxml%2F%3E&in=P7ac4831b-430a-4b8d-8b56-f7b32ed5b9cf&q=&type=standard&sort=rank&dr=AFTER)

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## Assessment instructions

Table 1 Assessment instructions

|  |  |
| --- | --- |
| Assessment details | Instructions |
| **Instructions for the trainer and assessor** | This is a written assessment and will be assessing the student on their knowledge of the unit.  This assessment is in 4 parts:   1. Multiple choice questions (Questions 1-10) 2. True or False questions (Questions 11-20) 3. Short answer questions (Questions 21-30) 4. Assessment feedback   The student should be provided with the Knowledge Assessment Task after week 2 of the Unit commencement. It is due for submission 3 weeks prior to the Skills Assessment. This will provide the student with adequate time to be familiar with all aspects of laboratory/field safety in order to complete the written submission.  Model answers, sample responses or criteria for each question are provided below.  Use these to support your judgement when determining a satisfactory result.  The student’s response to each question must contain the information indicated in this marking guide in order for their response to be correct. However, if a student provides information other than indicated below, and in the professional opinion of the assessor it is appropriate and meets the intent of the question, it may be considered correct.  The assessment feedback page must be signed by both the student and the assessor so the student displays that they have received, understood and accepted the feedback.  Complete the assessment feedback to the student and ensure you have taken a copy of the assessment prior to it being returned to the student.  Ensure the students name appears on the bottom of each page of the submitted assessment. |
| **About this marking guide** | The student’s response to each question must contain the information indicated in this marking guide in order for their response to be correct.  All questions must be answered correctly in order to satisfactorily complete this assessment event.  Assessors will need to make a judgement call as to whether each answer/response meets the criteria based upon the:   * Rules of Evidence:   + Validity – does the answer address the assessment question and does the evidence reflect the four dimensions of competency?   + Sufficiency – is the answer sufficient in terms of length and depth?   + Currency – has the work been done so recently as to be current?   + Authenticity – is this work the student’s own authentic work? * Principles of Assessment:   + Fairness – individual student’s needs are considered in the assessment process   + Flexibility – assessment is flexible to the individual student   + Validity – any assessment decision is justified, based on the evidence of performance of the student   + Reliability – evidence presented for assessment is consistently interpreted and assessment results are comparable irrespective of the assessor conducting the assessment * Dimensions of competency   + Task skills   + Task Management Skills   + Contingency Planning Skills   + Job Role Environment Skills |
| **Student must provide** | Pens |
| **Assessor must provide** | The Assessment paper |
| **Time allowed** | This is a take-home assessment.  To be issued after week 2 of the unit of competence commences.  Completed assessment to be submitted 3 weeks prior to the Skills Assessment. |

## Part 1: Multiple choice (Questions 1-10)

1. The safety responsibilities, under the Work Health and Safety Act 2011 (WHS Act 2011), of any employee at work include:

Table 2 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. taking reasonable care of themselves |  |
| 1. not doing anything that would affect the health and safety of others in the workplace |  |
| 1. following any reasonable health and safety instructions from the employer |  |
| 1. all of the above | X |

1. With regard to the WHS Act 2011, the employer must provide which of the following?

Table 3 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. A safe and healthy workplace, including psychological and physical health |  |
| 1. Safe equipment, structures and systems of work |  |
| 1. Induction information, training and supervision and provisions for the employee to discuss WHS |  |
| 1. All of the above | X |

1. In Australia, the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals is supported by:

Table 4 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. the model Code of Practice: Labelling of Workplace Hazardous Chemicals |  |
| 1. the model Code of Practice: Preparation of Safety Data Sheets for Hazardous Chemicals |  |
| 1. various guidance documents on the Classification of Hazardous Chemicals under the Work Health and Safety (WHS) Regulations |  |
| 1. all of the above | X |

1. You discover a large chemical spill in a Laboratory Preparation room. The spill is giving off pungent odours. Which of the following should be your first action?

Table Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Rush in to check there is no one in the room |  |
| 1. Ensure you can remain safe, raise the initial alarm but do not put yourself in danger | X |
| 1. Obtain the spill kit and commence the clean-up |  |
| 1. Close door and go looking for the supervisor |  |

1. If you witness a breach of WHS and/or environmental policy what should you do?

Table 6 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Complete an incident report (either manually or electronically) as soon as possible |  |
| 1. Notify the supervisor |  |
| 1. Raise the alarm if it appears people, equipment or the environment could be injured/damaged |  |
| 1. All of the above | X |

1. Under the principles of the hierarchy of hazard control, training on hazards and correct procedures falls under which category?

Table 7 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Engineering |  |
| 1. PPE |  |
| 1. Administrative | X |
| 1. Substitution |  |

1. Which of the following is **not** a way of identifying workplace hazards?

Table 8 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Examining injury and illness records |  |
| 1. Controlling the risks | X |
| 1. Conducting a safety audit |  |
| 1. Examining complaints or issues raised by workers |  |

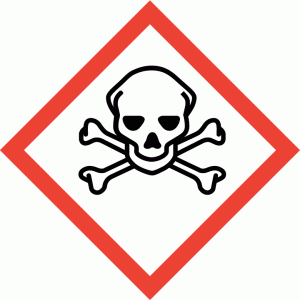
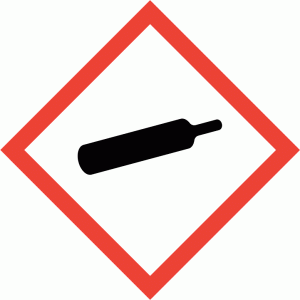
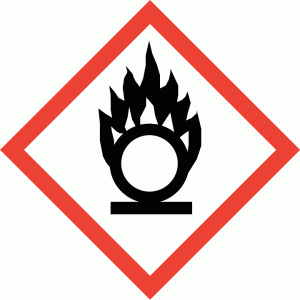
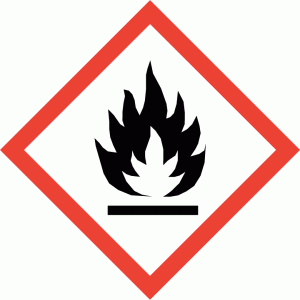
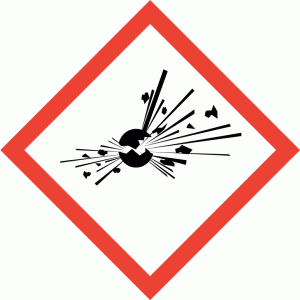
1. Flammable substances in the laboratory should be stored:

Table 9 Multiple choice

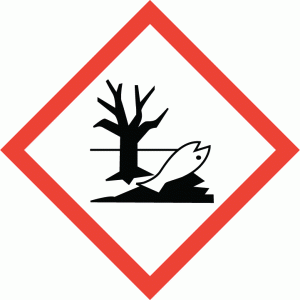
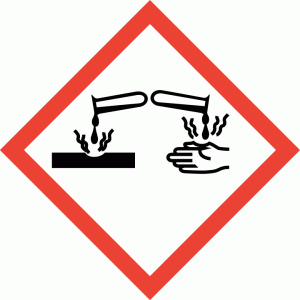
| Answer choices | Put X next to your answer |
| --- | --- |
| 1. in a flameproof cupboard | X |
| 1. on the laboratory bench |  |
| 1. in a laboratory cupboard |  |
| 1. in a fume cupboard |  |

1. There are 9 pictograms in the GHS classification system as shown below.

https://www.safeworkaustralia.gov.au/classifying-chemicals



**A B C D E**



**F G H I**

The four pictograms that represent, in order:

* flammable material
* the environment
* corrosive substances
* health hazard

are:

Table 10 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. H, G, E, D |  |
| 1. B, I, G, H | X |
| 1. B, I, F, A |  |
| 1. C, G, D, H |  |

1. Information on workplace standards of personal hygiene would include:

Table 11 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. illnesses/bandages and risk of infectious disease or conditions |  |
| 1. eating/chewing/drinking in the laboratory |  |
| 1. hand washing when leaving the laboratory |  |
| 1. all of the above | X |

## Part 2: True or false (Questions 11-20)

Table 12 True or false

| Question | Write *True* or *False* |
| --- | --- |
| 1. A worker must follow any reasonable health and safety instructions from their employer. | True |
| 1. GHS classification and labelling of hazardous chemicals also applies to non-hazardous chemicals in the workplace. | False |
| 1. An employer does not need to consult with the employee to make changes that may affect worker safety. | False |
| 1. An employee should routinely check the work area for hazards immediately before commencing any task. | True |
| 1. All incidents and accidents in the laboratory/field should be reported at the end of the shift. | False |
| 1. The use of PPE is sufficient to prevent injuries. | False |
| 1. It is necessary to report all incidents and near-misses. | True |
| 1. Good Laboratory Practice is to keep your work area clean and tidy at all times, not just the end of the task. | True |
| 1. You should ask if you are not sure of the particular task you have been directed to complete. | True |
| 1. A Safety Data Sheet (SDS) provides storage, transport and disposal information on chemicals identified as hazardous by Safe Work Australia. | True |

## Part 3: Short answer (Questions 21-30)

1. Australian Standard AS1319-1997 (reconfirmed 2018) *Safety signs for the occupational environment,* identified safety signs that could be applicable for laboratory situations. Complete the table below indicating:

* What the sign/symbol is indicating.
* The sign category as:
* Mandatory instructions
* Hazard warning
* Emergency information
* Fire
* Where you would typically find the sign or a similar sign (label)?

Table Short answer

| Sign | Indicating | Category | Location |
| --- | --- | --- | --- |
|  | Safety shower location | Emergency information | Next to safety shower |
|  | Biological hazard | Hazard Warning | AT entrance to laboratory |
| T:\ADMINISTRATION OH&S UNIT\Safety Symbols\%OH&S Safety Symbols Australian\Mandatory symbols\Eye.jpg | Eye protection required | Mandatory instructions | SOP, SDS, Entry to Laboratory |
| FIRE EXTINGUISHER | Fire extinguisher type in this location | Fire equipment | Next to extinguisher |
|  | First Aid available | Emergency information | Location of available first aid assistance |
|  | Corrosive material | Hazard warning | SDS, chemical bottles |
| T:\ADMINISTRATION OH&S UNIT\Safety Symbols\%OH&S Safety Symbols Australian\Mandatory symbols\Foot.jpg | Safety footwear required | Mandatory instructions | SOP, SDS, entrance to laboratory |

1. The hierarchy of control for managing hazards, is often drawn as a triangle standing on its point as below.
2. ELIMINATION

2. SUBSTITUTION

3. ENGINEERING CONTROLS

4. ADMINISTRATION

5. PPE

Complete the table below by providing:

* an explanation of each step in the triangle
* an example of a hazard and its impact that could be addressed by the step ie how the risk is reduced.

Table Short answer

| Step | Step explanation | Example |
| --- | --- | --- |
| 1 | *Elimination is to totally remove the hazard. It is the ideal method to reduce a hazard.* | *Historically Bunsen burner mats contained asbestos.*  *Asbestos is a known carcinogen.*  *These have now been removed and replaced with burner mats that are asbestos free.* |
| 2 | Substitution is to replace the hazard with something less hazardous | For all examples provided in this table, the student response can include, but is not limited to:  It may be to reduce the concentration of the chemical eg use 2 M HCl in place ot 11.4 M HCl. The higher concentration acid is much more corrosive  Use of benzene as a solvent  Benzene is a known carcinogen and can often be substituted by methyl benzene as a solvent |
| 3 | Engineering controls are used to isolate people from the hazard | Provide a better ventilation system to extract fumes. Fumes are a respiratory hazard.  Isolate the worker eg enclose a noisy machine. High noise levels are detrimental to a worker’s hearing |
| 4 | Administration is to change the way people work | Limit the time of exposure of a worker to the hazard such as noisy environments, dusty environments, hot work areas  Installing alarms if levels exceed safe values  Changes to the SOP to reflect additional safety equipment, instructions to be implemented |
| 5 | PPE provides additional protection to the worker | Provide chemical resistant clothing to protect from corrosive chemicals  Eye protection to protect from splashes, fumes etc |

1. There are many different types of fire extinguishers available for use on small fires that could occur in the laboratory. Below are a selection of fire extinguishers and some fire types. Complete the table by:

* identifying the type of extinguisher
* providing the distinguishing features of the extinguisher
* identifying the class(es) of fire it is suitable for
* providing an example of the type of fire that the extinguisher could be used for.

Table Short answer

|  | Extinguisher name | Distinguishing features | Class | Example |
| --- | --- | --- | --- | --- |
| Carbon dioxide fire extinguisher | Carbon dioxide | Black band and large plastic conical discharge nozzle | Class E in particular and also Class B | For all examples in this table, student response can include, but is not limited to:  Fire in electrical components |
| Foam fire extinguishers | Foam | Blue band | Class A and class B | Fires containing wood, plastic, paper, petrol or paint |
| Wet chemical fire extinguisher | Wet chemical | Oatmeal coloured band | Class A and Class F | Fires containing wood, plastic, paper and cooking oils |
| Water fire extinguisher | Water | All red | Class A | Small paper fire |
| https://www.firesys.com.au/rs/7/sites/846/cart_product_images/cpi_39115_large.jpg | Dry powder | All yellow | Class D | Fire in metal such as magnesium |
| 4.5kg ABE Dry Chemical Powder Extinguisher | Dry chemical | Red cylinder and white band | Class A, B and E | Wood, paper, petrol or electrical cables |

1. A laboratory may have many different hazards. These may be classified by category. Complete the table below by placing each of the hazards listed below, against the appropriate Hazard classification and indicating a hierarchy of control measure. (**Note:** some may overlap between categories, choose the most applicable). For one of the examples indicate the impact of the hazard if no control is put in place.

*Stress, radiation, chemical spills, bacteria, power tools, noise, violence, corrosive material, flammable substance, insects, magnetic fields, fatigue, animals, X-ray exposure, snakes, poisons, waste from medical facilities involving radioactive, broken glass.*

Table Short answer

| Hazard classification | Example | Impact (if no control) | Hierarchy of Control measure |
| --- | --- | --- | --- |
| Biological | Bacteria, insects, animals, (poisons) | Bacteria: illness  Insects: disease, bites  Animals:bites | PPE  Administrative (training) |
| Chemical | Corrosive material, flammable substance, poisons | Corrosive material: chemical burns  Flammable substance: burns from fire  Poisons: illness possible death | Administrative (training)  PPE |
| Environmental | Chemical spills, (flammable substance) | Chemical spills: pollution to waterways,  Flammable substance: may contribute to fires | Administrative  PPE |
| Physical | Radiation, noise, magnetic fields. Broken glass | Radiation: burns  Noise: damage to ears  Broken glass: cuts | Isolation  Administrative (training)  PPE (hearing protection) |
| Psychosocial | Stress, violence, fatigue | Stress: physical and mental illness  Violence: physical injury  Fatigue: result in accidents with equipment and machinery | Administrative (change in work hours to reduce fatigue) |
| Mechanical and electrical | Power tools | Power tools: risk of electrocution  Physical damage such as amputation of limb | Isolation  Administrative (training) |
| Nuclear | Waste from medical facilities | Waste from medical facilities: burns, illness, cancer | Isolation  Administrative (training) |
| Radiological | X-ray exposure | X-ray exposure: change in bone structure | Isolation  PPE (lead apron) |

1. Draw a schematic map of your laboratory area and show where the items identified below are located.
2. 1. Emergency exits 2. Safety alarms 3. Emergency response system 3. Emergency/hazard control equipment 4. Storage areas for PPE 5. Specialised storage areas 6. Waste disposal systems 7. Services shut-down controls 8. WHS Personnel

Shift

Office

8

7

3

2

2

2

6 6

Work Bench

5

5

5

4

3

1.Exit

1.Entry/exit

Below is a sample benchmark example only. Assessor is to ensure all requested items are included in the student map.

1. Draw a generalised site map for your laboratory/simulated laboratory (or provide a copy of the worksite map) and show:

* Designated evacuation route
* Location of meeting point

(If your work is in the field, provide a schematic for one site).

Below is a sample benchmark example only. Assessor is to ensure all requested items are included in the student map. Evacuation route identified by

Production plant

Car Park

Evacuation meeting place

Laboratory

1. Using a laboratory/field site you are familiar with, answer each of the following:
2. How are emergency alarms raised?

Student responses can include, but are not limited to:

equipment/instrument trips automatically raise the alarm; smoke and fire detectors; stop buttons when pushed trigger the alarm; alarm raised directly by a worker. Onsite/field alarms could be raised by site personnel.

1. How is safety information conveyed?

Student responses can include, but are not limited to:

At induction; toolbox meetings, training sessions, signs, minutes of WHS minutes, direct contact with safety personnel.

1. Who are the designated WHS personnel for the area?

Student responses can include, but are not limited to:

Work place dependent, any of these would be acceptable: Shift supervisor, WHS committee members, Safety delegate, gatehouse personnel, First-aid personnel, Trainers

1. Provide examples of two possible emergencies that could arise and how you would respond to these.

Student responses can include, but are not limited to:

Chemical spill: ensure personnel safety, raise the alarm, clear the area, obtain spill kit is practical, let the experts take over, complete the incident report etc as required.

Snakebite in the field: ensure danger has passed, raise the alarm (phone if possible) send another person to meet emergency personnel, commence DRSABCD. Complete incident report as required.

Small fire in a 60 mL beaker containing ethanol: raise the alarm, if possible place a watchglass or fireblanket over the beaker, complete the incident report as required

Student cuts hand when using a scapel: Raise the alarm by calling for First Aid, make the student comfortable, keep others away from the area, complete the reporting procedures once student is safely under firstaid treatment

1. What is the signal for an incident requiring evacuation of the laboratory?

Student responses can include, but are not limited to:

Audible alarm via the public address system, Depending on the laboratory it may also include verbal instructions over the public address system.

1. How is the emergency/hazard control equipment maintained in the laboratory?

Student responses can include, but are not limited to

Regular checks are made by contract safety people, checking compliance plates, tags etc.

The areas are kept clear of obstacles. Safety showers are checked every week.

1. Explain the laboratory procedures for reporting and recording incident and emergency procedures in your laboratory.

All incidents are reported immediately to the laboratory supervisor. The incident is recorded via the incident Hotline by phone during business hours or via an email with a written report if outside business hours. Emergency situations are relayed to Security on the emergency number (this will be different for each Campus). Fire alarms are reported directly to the emergency services when the alarm is triggered.

1. The following question relates to the information sources that are available in a laboratory in relation to WHS. You should use specific examples that relate to laboratory tasks.
2. A SDS is an important source of information in any work area, particularly a laboratory. Provide responses to each of the following:

What information does a SDS provide? identification of the product, hazard identification, composition and information on ingredients, first aid, fire fighting measures, mccidental release measures, handling and storage, exposure controls and personal protection, physical and chemical properties, stability and reactivity, toxicological information, ecological information, disposal, transport, regulatory information

Where can the SDS’s be found in a laboratory?

Either as hardcopy or via computer access to Chemwatch Gold

Why is it important to consult an SDS before using any new chemical?

The information is important for personal safety, but also ecological information, spill control etc

From your experience, who is responsible for maintaining the currency of the SDS register?

Laboratory Manager (or any reasonable response such as Trainer WHS delegate, Store person etc).

List five (5) SDS’s that relate to tasks you complete in the laboratory/field and indicate when the SDS expires.

Student responses can include, but are not limited to:

5 M HCl, 2021 KMnO4 2020 HF 2021

10% NaOH 2022 10% CuSO4 2021 conc HNO3 2020

30 vol H2O2  2020 Conc H2SO4 2023

1. Standard Operating Procedures (SOPs) provide information to the worker regarding how a particular task should be undertaken. For two (2) SOPs you are familiar with complete the table below, by providing the information requested.

Below are two examples of typical SOPs. Student responses can include, but are not limited to:

Table Short answer

|  |  |  |
| --- | --- | --- |
| **Information requested** | **SOP 1** | **SOP 2** |
| SOP Name and number | M107 Preparation of 0.1 M HCl from 11.4 M HCL | M126 Determination of Water hardness by EDTA titration |
| Where the SOP is located | Central computer system (LIMS) | Central computer system (LIMS) |
| PPE required for the task | Safety glasses, enclosed shoes, lab coat, work in fumecupboard | Safety glasses, enclosed shoes, lab coat, work in fumecupboard |
| Identified hazards in the task | Hazardous chemical conc HCl Glassware | Ammonia-ammonium chloride buffer hazardous Manual handling |
| How are the identified hazards controlled? | Small volumes dispensed Alternate procedure uses 2 M HCl for the dilution  Training provided in use of all equipment | Automatic dispenser for the buffer to limit exposure |
| Person responsible for maintaining the SOP. | Laboratory manager | Laboratory manager |
| What equipment / technique is advised to reduce any manual handling issues | Glassware must be kept dry on the outside to prevent possible dropping on containers | Automatic dispenser provided to limit the wrist movements required Titration training has been provided in the actual technique (includes equipment to be in easily accessed position on the bench, correct method of swirling shown to reduced wrist issues |

## Laboratory information that is important to consider will be available in many formats. Complete the table below indicating the type of information available and where you would expect it to be located, for the situations provided.

Table Short answer

| Situation | Information available and location |
| --- | --- |
| WHS personnel with specific laboratory knowledge | For all examples provided in this table, the student response can include, but is not limited to:  WHS Manager- Production office  Elected representative to the WHS committee. On shift |
| Possible environmental issues related to laboratory tasks | Site environmental officer.  Shift supervisor  SOP |
| Disposal of hazardous waste generated by the laboratory/field workplace | Site environmental officer  SOP’s for individual tasks  SDS for hazardous material |
| Emergency alarms (fire, bomb threat or lock down) | Evacuation alarms covered in works induction and updates.  Information provided in employee handbook.  Shift supervisors and fire wardens are all trained in these scenarios. |
| Legal issues that relate specifically to the laboratory | HR Manager Production Office  Laboratory Manager: Laboratory Office  Quality control manager: Production Offices |
| Ethical issues that relate specifically to the laboratory | Ethics co-ordinator for Biological Dept  Shift supervisors: shift office  Laboratory guidelines for the reporting and issuing of results. Online document |
| Instructions that relate to how an employee is to conduct themselves when in the laboratory/field. (including personal hygiene standards) | HR Dept  Induction manual: hardcopy and online live version  From trainer/supervisor |
| Requirements and procedures for reporting:   * Incidents/near misses of any type * Illness | These would be covered generally during any induction process (in the laboratory or for specific onsite locations)  Supervisor/mentor/ HR dept would be able to provide the information required. |

## Hazard identification in any work area is important. The following section relates to hazard identification and control in a laboratory/simulated laboratory/field location familiar to you. Complete the Table below by providing the information requested, as it relates to WHS in the laboratory.

Table Short answer

| Information requested | Information responses |
| --- | --- |
| What checks are you required to complete **before** commencing tasks in the laboratory? | For all examples provided in this table, the student response can include, but is not limited to:  Check for hazards in the work area such as electrical non-conformance (tag and test dates), spills, trip hazards, work of others in the laboratory, Control measures are in place such as fume cupboards in order, PPE worn correctly. |
| What routine checks are you required to complete **during**  tasks? | Ensure wastes are disposed of regularly to help keep area lean and tidy.  Look for changing conditions that could indicate new hazards.  Workarea is kept clear of obstacles |
| If you find a hazard in the laboratory/field what actions are required? | Ensure the area is made safe: (signage, person on guard to prevent further access.  Notify immediately to supervisor.  Stop work if the hazard is considered too dangerous to continue |
| How are hazards reported? | During office hours there is a hazard/incident hotline number available to call and report the incident.  If immediate action required supervisor and security notified immediately. |
| Identify equipment that is available to lower the risk of a hazard in the laboratory/field | Fume cupboards  Automatic dispensers for concentrated chemicals,  Manual handling equipment especially for in the field and the sample preparation areas. |
| Why is it important to monitor for hazards during the entire shift? | Changes in weather, work of other people, equipment breakdowns all could impact on your work. |
| List three (3) examples of hazard warnings or safety signs that may be displayed in the laboratory/field. | Safety shower Eye wash  Biohazard  Emergency exit |
| Explain why it is important to leave the laboratory/field clean and tidy when tasks are completed. | Apart from reducing the risk of contamination a clean and tidy work area means that equipment has been checked and stored ready for use, wastes have been disposed of thus reducing the hazards in the area. |
| Provide an example of a potential environmental issue that could occur if correct procedures are not followed closely. | Chloride determination using silver nitrate produces considerable silver waste solutions. This is not permitted to be placed down the drain. All procedures generating silver waste residues indicate that waste solutions are to be collected in special containers awaiting on disposal. It would be in breach of the laboratory chemical license to pour down the sink. Silver residue are toxic |

1. Personal protective equipment (PPE) is regarded as the last step on the hierarchy of control. It is important that it is correctly fitted and maintained. Complete the table below by providing the information required relating to PPE for tasks you complete routinely.

Table Short answer

| Information required | Responses |
| --- | --- |
| How are you informed of PPE required? | For all responses provided in this table, the student response can include, but is not limited to:  General induction  SOP for each procedure |
| What PPE is required routinely for general laboratory/field tasks? | Safety glasses; enclosed footwear; protective clothing |
| Examples of task specific PPE that may be required. | For high risk sampling of HF, head to toe covering in plastic suit, full head protection attached to air line ; double taped gloves and rubber boots taped to overalls, |
| Why should PPE be carefully maintained? | It should be maintained to ensure it is readily available for use. If left in a damaged state, for example a tear in the suit for HF sampling it would be dangerous for the user and put testing behind schedule |
| Who is responsible for ensuring the PPE is fit for use? | Storeperson that does the ordering can only respond to information provided.  Every user of the PPE is responsible for their own equipment |
| What is the laboratory procedure for issuing and storing PPE? | At commencement in the laboratory the induction process goes through the PPE required. For specialised equipment such as safety shoes the employee may be sent to a specialised safety shop for outfitting.  Generally a twice per year for our equipment, unless damaged in the interim.  Each person is responsible for maintaining their individual PPE in good order for example safety shoes, laboratory coat and safety glasses. These are stored in personal lockers. If these are damaged they should be replaced immediately. Specialised PPE should be maintained according to manufacturer’s requirements such as specialised servicing |
| Provide three (3) examples of safety equipment other than personal protective equipment available. | Fume boards, laminar flow cabinets  Flammable liquid cabinets  Equipment for handling hot items (tongs, hot hands)  Electrical cut-out switches  Smoke detectors |
| List two examples of emergency equipment available in the laboratory and indicate:   * how it is maintained in good order. * how it is used and stored. | Fire extinguisher: serviced by fire technicians and date noted on extinguisher tag, used by trained laboratory staff and reported immediately that it has been used, fixed location close to laboratory exits  Fire blanket: on routine safety checklist for checking it is still located in correct position  Antidotes for HF use by dates are checked regularly, stored with the HF. If used an incident report must have been recorded  Acid and base spill kits: use-by dates and regular checking conducted by laboratory staff. All laboratory personnel are trained in the use of the kits. Kit is maintained by the authorised attendant for the particular laboratory. If used it must have been reported |

1. Situations may arise that require immediate action. It is important that possible causes are identified and plans put in place for quick response if there is a problem. Complete the table below with the information required. Where possible indicate what specific training you may have received regarding the identified situation.

Table Short answer

| What if? | Responses |
| --- | --- |
| A fire alarm is activated in your immediate area. | For all response’s provided in this table, the student response can include, but is not limited to:  Make workarea safe, shutdown electrical equipment if safe to do so. Ensure others in the area have heard the alarm. Vacate to evacuation point: Evacuation simulations |
| A gas leak is detected in your work area. | Ensure everyone in the area is aware and evacuate the area. If safe to turn off equipment do this on the way out while raising the alarm: Use of breathing apparatus training |
| A large unidentified chemical spill is found. | Notify supervisor and prepare to evacuate.  If safe you may be able to put down spill pillows to contain the spill.  Do not attempt to clean up. This should be done by emergency services;  Induction and spill control training |
| An uncontained biohazard is identified in an area adjacent to your location. | Stop work, evacuate and raise the alarm; Safety warden training |

## Explain the processes involved, for a laboratory/field area that you are familiar with, for each of the items identified in the table below.

Table Short answer

| Item | Process |
| --- | --- |
| Storage and disposal of hazardous waste | SDS and SOP will provide information on the storage and disposal. In general hazardous wastes are kept in specific containers waiting on pickup by authorised contractors. They are kept separate from other chemicals |
| Labelling of hazardous materials | Chemwatch Gold program is able to print off the required labels for different sized containers. These will contain the signal words, pictograms etc required. |
| A small spill of organic solvent in the laboratory. | The SDS would be consulted. This will indicate how to deal with the spill. It should be contained (absorbed). In some cases it may just be left to evaporate and staff removed from the area. |
| You find a work colleague collapsed at their desk. | Ensure the area is safe for you to enter, raise the alarm. If practicable the person could commence DRSABCD while waiting on emergency services/ |
| You notice a pungent electrical smell | Raise the alarm, turn off electrical equipment in your area if safe to do so. |