|  |  |  |  |
| --- | --- | --- | --- |
| **Biological Materials** | **YES** | **NO** | **N/A** |
|  1. Understands the concept of biohazardous materials and can identify them in the lab; understands biosafety levels and risk groups; can describe how they differ and how they are related. |  |  |  |
|  2. Understands the association of infectious agents and toxins to disease. |  |  |  |
|  3. Understands the elements of a bioagent risk assessment, including infectious dose, incubation period, viability, drug resistance, modes of transmission, routes of entry, etc., and can apply that information to appropriate handling practices for bioagents. |  |  |  |
|  4. Can describe and appropriately use PPE required for handling bioagents. |  |  |  |
|  5. Can describe and use work practices that reduce or control exposure risks, including proper centrifuge/rotor practices, BSC practices, autoclave use, etc. |  |  |  |
|  6. Knows how to properly use a biosafety cabinet and other containment equipment/ engineering controls used with biohazards, as well as verify their functionality and recognize limitations; possesses awareness of inspections and certifications status, and recognizes/properly responds to malfunctions. |  |  |  |
|  7. Recognizes and predicts potential aerosol generation, sharps hazards, or contact hazards in using lab equipment or performing procedures with bioagents; identifies and uses appropriate control measures. |  |  |  |
|  8. Can explain and execute handling, incubation and storage requirements for bioagents (examples: CO2 incubation, liquid nitrogen storage, -80 storage, lyophilization procedures, etc.) |  |  |  |
|  9. Understands and successfully performs aseptic technique, including bench methods for maintenance of pure cultures, verifying culture purity, sterilization and filtration methods, etc.  |  |  |  |
| 10. Follows appropriate procedures for labeling of bioagents and for keeping bioagent records, inventories, logs, etc. |  |  |  |
| 11. Follows appropriate procedures for securing bioagents in active use or in storage. |  |  |  |
| 12. Follows required containment practices when transporting bioagents. |  |  |  |
| 13. Proficient in lab procedures for biowaste handling, decontamination by autoclaving and other methods, verifying autoclave function, and waste disposal, including contaminated sharps.  |  |  |  |
| 14. Can explain and execute spill response and cleanup procedures for biospills. |  |  |  |
| 15.  |  |  |  |
| 16.  |  |  |  |
| 17.  |  |  |  |
| **Research Animals** | **YES** | **NO** | **N/A** |
| 1. Understands the hazards associated with handling animals used in the lab’s research, including experimentally infected animals. |  |  |  |
| 2. Can describe the possible routes of exposure for lab workers when they perform animal procedures. |  |  |  |
| 3. Can describe and utilize control measures and work practices to mitigate the risks when working with research animals. |  |  |  |
| 4. Understands the risks associated with development of animal allergies, and the mitigation measures to take for these risks. |  |  |  |
| 5.  |  |  |  |
| 6.  |  |  |  |
| **Chemical Materials** | **YES** | **NO** | **N/A** |
| 1. Can identify chemicals in the lab and describe their hazards when used in lab procedures; can identify any high-hazard chemicals in the lab, including toxins, and knows required procedures for handling, storage and disposal. |  |  |  |
| 2. Successfully interprets & uses safety data sheets (SDS) and other sources of  Information, including container labels, to learn how to mitigate chemical  exposure risks, to properly handle/store/dispose of chemicals, etc.; applies that information to use appropriate chemical containment, PPE, handling and  storage practices, etc. |  |  |  |
| 3. Knows how to correctly use a chemical fume hood. |  |  |  |
| 4. Knows how to safely use compressed gases in the lab, how to use regulators, how to safely transport and store compressed gas cylinders. |  |  |  |
| 5. Knows how to safely handle/ transport liquid nitrogen, and how to safely use cryogenic storage vessels. |  |  |  |
| 4. Knows how to safely transport chemicals using secondary containers and carriers or carts. |  |  |  |
| 5. Knows how to dispose of solid, liquid and gaseous chemical wastes, and request hazardous wastes pickup. |  |  |  |
| 6. Knows how to correctly respond to a chemical spill and a chemical exposure. |  |  |  |
| **Radiologic Materials** | **YES** | **NO** | **N/A** |
| 1. Can identify radiologic materials used in the lab and describe hazards associated with them when used in lab procedures; can describe the concept of ALARA (as low as reasonably achievable). |  |  |  |
|  2. Successfully interprets and uses sources of information, including container labels, to learn physical and health hazards, routes of exposure, etc. of radiologic materials. |  |  |  |
|  3. Can describe and use PPE, engineering controls, proper storage requirements, inventory and survey requirements, and training requirements for using radiologic materials. |  |  |  |
|  4.  |  |  |  |
|  5.  |  |  |  |
|  6.  |  |  |  |
| **Physical Hazards in the Lab** | **YES** | **NO** | **N/A** |
|  1. Can describe physical hazards in the lab, including:* proper use/disposal of sharps
* use of compressed gases and use of vacuum
* hazardous temperature extremes associated with lab work (LN2, autoclave)
* nonionizing radiation hazards (lasers, UV),
* specific hazards associated with equipment (centrifuges)
* slip/fall hazards in lab
 |  |  |  |
|  2. Knows the control measures & work practices used for the physical hazards listed above.  |  |  |  |
|  3.  |  |  |  |
|  4.  |  |  |  |
| **Risk Assessment, Hazard Controls and Communication** | **YES** | **NO** | **N/A** |
| 1. Recognizes potential hazards associated with lab materials and procedures, understands and implements the risk assessment process, identifies control measures through that process, implements the control measures, and knows how to monitor them for effectiveness. |  |  |  |
| 1. Knows the PPE required for general lab procedures, chemical handling, etc. |  |  |  |
| 2. Knows the general engineering controls in the lab and their correct uses, their limitations, their inspection/certification status and processes, how to monitor them, how to determine when they are malfunctioning, and procedures for reporting malfunctions. |  |  |  |
|  3. Knows the importance of safety signs, labels and posted information. |  |  |  |
|  4. Can describe how to label samples, containers, cultures, etc. according to regulatory requirements, and is consistent in using these practices. |  |  |  |
|  5.  |  |  |  |
|  6.  |  |  |  |
| **Regulations, Security and Safety Compliance** | **YES** | **NO** | **N/A** |
| 1. Knows and follows institutional safety and occupational health requirements, as well as the laboratory’s safety practices and SOPs. |  |  |  |
| 2. Knows locations of manuals, is knowledgeable of their content, and follows their guidelines and regulations. |  |  |  |
| 3. Completes initial required safety training, and keeps training current. |  |  |  |
| 4. Adheres to the laboratory’s security requirements. |  |  |  |
| 5. Knows routine monitoring processes for equipment and facilities; recognizes deviations from normal operations/procedures, and know show, and to whom, to report them. |  |  |  |
| 6. Knows and follows quality assurance procedures in lab. |  |  |  |
| 7. Knows and follows procedures for records management in lab. |  |  |  |
|  8.  |  |  |  |
|  9.  |  |  |  |
| **Occupational Health/ Incident Response & Reporting** | **YES** | **NO** | **N/A** |
| 1. Knows how and why to monitor personal health status and changes as related to working with biohazardous materials and chemicals in the lab. |  |  |  |
| 2. Knows procedures for reporting an exposure or other lab incident/accident. |  |  |  |
| 3. Knows signs and symptoms in humans following exposure to hazardous materials. |  |  |  |
| 4.  |  |  |  |
| 5.  |  |  |  |
| **Emergency Response** | **YES** | **NO** | **N/A** |
|  1. Recognize incidents that should be reported and significance of alarms. |  |  |  |
|  2. Know how to report a lab emergency according to institutional plans/policies. |  |  |  |
| 3. Knows the building’s emergency response plan for evacuation, for shelter-in- place and secure-in-place emergencies. |  |  |  |
| 4. Knows his/her role in responding to emergencies and other incidents, including disinfection and exposure prevention procedures, spill response, exposure response, and first aid response. |  |  |  |
| 5. Knows the lab’s incident follow-up process. |  |  |  |
| 6. Complies with emergency response training requirements, and participates in drills/exercises for lab personnel. |  |  |  |
| 7. Takes required training in emergency response and keeps training current (example: Portable Fire Extinguisher training). |  |  |  |
|  8.  |  |  |  |
|  9.  |  |  |  |

**SUMMARY**

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| --- | --- | --- |
| **TOPIC**  | **PROFICIENT** | **NEEDS WORK:** |
|  **Biological Materials** |  |  |
|  **Research Animals** |  |  |
|  **Chemical Materials** |  |  |
|  **Radiologic Materials** |  |  |
|  **Physical Hazards in Lab** |  |  |
|  **Risk Assessment, Hazard Controls**  **and Communication** |  |  |
|  **Occupational Health/ Incident**  **Response and Reporting** |  |  |
|  **Emergency Response** |  |  |