Risk Assessment

ENV 315 Environmental Health and Safety

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Abstract

Risk assessment is very vital especially in a laboratory to help users avoid injuries. Risk assessment is essential for self-protection and for protecting other people that share the same facilities. In a chemistry lab, we have dangerous chemicals and hazardous experiments that require high levels of cautiousness for health and safety. Before an experiment of any usage of the lab, a risk assessment report must be published prior with all the conditions included. In this report, we will discuss the hazards in a chemistry lab that affects both people and the lab components.

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| --- | --- | --- | --- | --- |
| Risk | Physical | Chemical | Biological | Electrical |
| The Hazard | * Sharp edges
* Slips, Trips, and falls
* Radiofrequency
* Magnetic fields
 | * Reactives
* Toxins
* Flammables
* Corrosives
 | * Microbes
* Plants
* Animals
* Genetically modified agents
 | * Fire
* Multifunctioning equipment
* Shock
* Unsafe use of extension codes
 |
| Description | So many risks in the modern lab and can lead to slips and even injuries. These risks might also alter results.  | Handling chemicals are critical because they can lead to corrosion or even exothermic reactions. | Diseases carried by the animals and humans can be transmitted to the teams. | These factors might be overlooked but can lead to high risks and even explosions. |

From the table, we have some of the hazards that are being involved in the laboratory. The table below illustrated, and the probability of occurrence since different risks has different levels of existence.

|  |  |  |  |
| --- | --- | --- | --- |
| Hazard Identifations | Event Probability | Severity of the outcome | Overall Risk |
|  | Highly likely | Catastrophic | High risk |
|  | Likely | Significant | Significant risk |
|  | Even chance | Moderate | Moderate risk |
|  | Unlikely | Minor | Moderate risk |
|  | Highly unlikely | None | No risk |
|  |  |  |  |
|  |  |  |  |

Numerous labs are riskier and hazard-filled than the normal working environment – the expense of existing on the edge of the sciences. Regardless of whether you're searching for fixes, achievements or new advancements, it is crucial that you and the entire group see every single peril of the research center. With a full comprehension of the dangers and dangers connected to working in a lab, you and your group will most likely work to your fullest, consolidating powerful research with safe practice. In this way, here we have recorded a choice of the most well-known dangers and dangers of the advanced research facility.

In the tables, we have indicated the physical, chemical, biological and electrical hazards that are found in the lab. These hazards also come with ways of prevention to try to reduce their catastrophic impact. With regards to chemical hazards, viable avoidance is the ideal approach to deal with the dangers of working with these hazardous substances. Rehearsing legitimate compound isolation is essential in all labs, as a few elements can respond with one another to make concoction responses, fires, and even blasts. Defensive apparel and great housekeeping are likewise critical for shielding your group from substance dangers.

Electrical hazards can undoubtedly be neglected in labs, which will, in general, have more wellbeing and dangers than in different working environments. Electrical dangers are possibly dangerous, be that as it may, so limiting their hazard is essential. All electrical plugs that could be presented to wet conditions ought to be outfitted with ground-blame circuit interrupters. Adaptable electrical lines ought to likewise be very much kept up and never utilized as a substitute for permanent wiring. Electrical pendants can be used where conceivable to keep strings off the beaten path. In the event that somebody comes into contact with a live electrical source, it is critical not to contact them, as you could likewise be shocked. Instead, kill the source or push them clear of the wellspring of the stun with a dry actualize, for example, a wooden sweeper handle. Your group's prepared part ought to oversee emergency treatment. On account of a little electrical fire, utilize a multi-reason fire douser – never put water on an electrical fire.

Proper storage of biological agents can prevent risks. These risks are included even in the disposal of wastes from the lab; every disposition should consider the prior safety precautions. On the other hand prevention of physical hazards can be done through proper housekeeping and training of the laboratory users to be watchful. First aid kit should be available in the case of an emergency.

In conclusion, every laboratory should be assessed and the risks identified and minimized. In this case study, we have identified the hazards and estimated the probability of risks involved in the dangers. We have been able asses the physical, biological, chemical and electrical hazards that are involved in a chemical laboratory. Proper usage and maintenance of the lab can reduce these risks and also allow accurate result on the findings.