Safety and Health Guidelines for the Nuclear & Solid-state Physics Laboratory
Nuclear & Solid-state Physics Laboratory Safety Manual

Experimental physics encourages instructors and students to innovate new techniques and devices and use them to demonstrate both old and new ideas. Therefore, it is impossible to predict all the specific hazards that may arise in the study of physics. While eliminating creativity for the sake of safety is not preferable, instructors must combine their creativity with constant vigilance against potential dangers. Common sense can go a long way toward providing a safe environment.
Here is this guide which provides general rules for ensuring a safe environment within the Nuclear & Solid-state Physics Laboratory:

1. Understanding Hazards: Before starting any experiment, understand the associated hazards, whether they are chemical, biological, radiological, or mechanical.
2. Wearing Personal Protective Equipment (PPE): Always wear safety glasses, a lab coat, and appropriate gloves. When handling radioactive materials, additional protection such as lead aprons may be necessary.
3. Avoid Eating and Drinking: Do not eat, drink, or store food inside the laboratory to avoid contamination and exposure to radioactive materials or electrical hazards.
4. Training on Handling Radioactive Materials: All persons handling radioactive materials must receive specific training on the safe handling of these materials and associated emergency procedures.
5. Using Radiation Detection Devices: In experiments involving radioactive sources, use radiation detection devices and continuously monitor radiation levels.
6. Storage and Disposal of Radioactive Materials: Radioactive materials must be stored and disposed of in accordance with local laws and regulations, using designated containers and secure storage areas.
7. Avoid Working Alone: When handling hazardous materials or conducting high-risk experiments, avoid working alone and ensure another person is in the laboratory.
8. Maintaining a Clean and Organized Workspace: Keep the work area free of clutter to facilitate movement and evacuation in an emergency and to prevent accidents.
9. Disconnect Electricity: When not in use, and to prevent fire hazards, disconnect electrical devices when they are not being used.
10. Checking Equipment Integrity: Before use, check the integrity of devices and equipment to ensure there is no damage that could lead to accidents.
11. First Aid Training: Users must be trained in first aid, especially regarding handling burns, poisoning, or injuries resulting from radiation exposure.

12. Careful Handling of Sharp Tools: When using cutting tools or any sharp equipment, handle them carefully to avoid cuts and injuries.
13. Temperature Monitoring: In experiments requiring temperature control, monitor it continuously to avoid burns or other accidents caused by excessive heat.
14. Avoid Using Flammable Materials: If experiments involve the use of flammable materials, handle them with extreme care and keep them away from heat sources or flames.
15. Training on Emergency Equipment Use: Ensure all users are trained in the use of emergency equipment such as fire extinguishers and eye wash stations.
16. Restricting Access to Hazardous Materials: Ensure hazardous materials, including radioactive materials, are stored in access-restricted areas to prevent unauthorized access.
17. Immediate Reporting of Incidents: In the event of any accident or exposure injury, it must be reported immediately to the responsible personnel to provide necessary first aid and document the incident.
18. Careful Handling of Batteries and Chemicals: For experiments involving the use of batteries or chemicals, they must be used and stored in a way that protects against leaks or explosions.
19. Evacuation Procedure Training: Ensure everyone in the laboratory knows the evacuation procedures and escape routes in case of an emergency.

Following these guidelines helps provide a safe working environment and reduces the risk of accidents and injuries in the Solid-state and Nuclear Laboratory, allowing research and experiments to be conducted effectively and safely.