

Name _____

Safe Handling of Acids and Bases: What You Need to Know

Open-Ended Response Answer Key

1. Exposure to toxic acids or bases can have long-term health effects, including respiratory and digestive issues, skin conditions, and organ damage. To protect themselves, individuals should wear appropriate protective gear, work in well-ventilated areas, and follow safety guidelines and protocols.
2. As a lab supervisor, safety protocols would include providing safety goggles, gloves, and lab coats, ensuring proper ventilation, and educating students on the safe handling of acids and bases. Emphasis would be placed on adding acids or bases to water slowly and not mixing them without proper guidance.
3. Mixing acids and bases can result in a violent chemical reaction, such as the formation of heat and gas. An example is the mixing of hydrochloric acid and sodium hydroxide, which produces table salt and water. Failure to follow safety precautions can lead to accidents, as seen in real-life incidents involving chemical spills or explosions.
4. Safety data sheets (SDS) provide vital information about chemicals, including their properties, hazards, and safety precautions. Individuals can use SDS to understand the risks associated with acids and bases, such as toxicity or corrosiveness, and follow recommended safety measures when handling these substances.

