

Name: _____ Date: _____

Corrosive Chemicals & Reactive Risks: 11th Grade Lab Safety Quiz

Learners sharpen their hazard-mitigation skills by analyzing Safety Data Sheets and applying containment protocols to complex chemical scenarios.

1. When working with concentrated hydrofluoric acid or other volatile organic compounds, what is the primary reason for utilizing a laminar flow hood versus a standard chemical fume hood?

- A. Laminar flow hoods are designed to protect the user from toxic fumes.
- B. The laminar flow hood prevents particulate contamination of the sample.
- C. Laminar flow hoods provide higher suction for heavy gas vapors.
- D. There is no difference; they are interchangeable for chemical safety.

2. According to OSHA GHS standards, a pictogram featuring a 'flame over circle' (oxidizer symbol) indicates that the substance itself provides oxygen, potentially causing other materials to combust.

- A. True
- B. False

3. If an alkali metal such as Sodium or Potassium catches fire, which class of fire extinguisher must be used to neutralize the specific hazards of combustible metals?

- A. Class A (Water/Pressurized)
- B. Class B (CO₂/Dry Chemical)
- C. Class C (Electrical)
- D. Class D (Specialized Dry Powder)

4. You are performing a titration and accidentally splash a diluted solution of sodium hydroxide into your eyes. What is the minimum recommended duration for using the eyewash station?

- A. 2 minutes
- B. 5 minutes
- C. 15 to 20 minutes
- D. Until the stinging sensation stops

5. When diluting a strong acid, it is scientifically safer to pour the acid into the water rather than pouring water into the acid.

- A. True
- B. False

6. On a Safety Data Sheet (SDS), which section specifically outlines the Personal Protective Equipment (PPE) requirements and occupational exposure limits for a chemical?

- A. Section 1: Identification
- B. Section 4: First-Aid Measures
- C. Section 8: Exposure Controls/Personal Protection

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D. Section 13: Disposal Considerations

7. While using a centrifuge to separate a biological suspension, you hear a loud rhythmic thumping. What is the most likely safety error performed?

- A. The samples were not matched in mass and balanced across the rotor.
- B. The speed (RPM) was set too low for the viscosity of the liquid.
- C. The lid was locked before the cycle started.
- D. The test tubes used were made of borosilicate glass.

8. If a small mercury thermometer breaks, it is appropriate and safe to use a standard vacuum cleaner to ensure all droplets are removed from the floor.

- A. True
- B. False

9. Which of the following describes the 'Pass' technique correctly regarding the use of a fire extinguisher?

- A. Pull, Aim, Squeeze, Sweep
- B. Push, Activate, Spray, Stop
- C. Point, Arm, Swirl, Saturate
- D. Press, Alert, Signal, Stay

10. In a laboratory setting, what is the specific purpose of a secondary containment tray?

- A. To keep the lab bench organized for aesthetic purposes.
- B. To catch leaks or overflows from the primary container to prevent wider contamination.
- C. To act as a heat-shield for Bunsen burner experiments.
- D. To provide a sterile environment for agar plate inoculation.