

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## When Protocols Fail: The 10th Grade Lab Safety Crisis Challenge

Moving beyond basic rules into hazard analysis and risk assessment, this assessment demands critical evaluation of chemical compatibility and reactive containment.

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**1. When working with volatile organic compounds (VOCs) that possess a high vapor pressure, which engineering control is the primary defense against respiratory hazards?**

- A. A standard laboratory HEPA filter
- B. A certified chemical fume hood
- C. The building's central HVAC system
- D. Safety goggles and a nitrile face shield

**2. A student accidentally spills a concentrated solution of Sodium Hydroxide. After alerting the instructor, the most appropriate secondary action is to \_\_\_\_.**

- A. Dilute the area with excess water
- B. Mop it up with paper towels immediately
- C. Apply a specialized spill neutralizer
- D. Fan the fumes toward a window

**3. Standard nitrile gloves provide an impenetrable barrier to all laboratory chemicals regardless of exposure time.**

- A. True
- B. False

**4. You observe a slight 'spider-web' crack at the base of a 250mL Erlenmeyer flask. What is the correct analytical approach to this situation?**

- A. Use it only for room-temperature liquids
- B. Apply laboratory tape to reinforce the base
- C. Dispose of it in a designated glass sharps container
- D. Heat it slowly to fuse the micro-fissures

**5. When diluting sulfuric acid, you should always add the acid to the water rather than water to the acid.**

- A. True
- B. False

**6. According to the GHS (Globally Harmonized System), a pictogram featuring a flame over a circle indicates that a substance is \_\_\_\_.**

- A. Highly flammable
- B. An oxidizer
- C. Explosive

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D. Corrosive to metal

**7. In the event of a large-scale chemical fire involving reactive metals like Magnesium, which suppression method is required?**

- A. A standard ABC fire extinguisher
- B. A pressurized water hose
- C. A specialized Class D dry powder extinguisher
- D. A carbon dioxide (CO<sub>2</sub>) canister

**8. If a chemical splashed in the eye requires the use of an eyewash station, the victim must rinse their eyes for a minimum of \_\_\_\_.**

- A. 2 minutes
- B. 5 minutes
- C. 15 minutes
- D. 60 minutes

**9. An SDS (Safety Data Sheet) provides information primarily for medical professionals and should not be accessed by students.**

- A. True
- B. False

**10. When vacuum filtration is being performed, why is 'side-arm' glassware treated with extra caution compared to standard glassware?**

- A. It is prone to implosion under pressure differentials
- B. It is made of thinner, less durable plastic
- C. It reacts chemically with most filter papers
- D. It cannot be cleaned with standard detergents