

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

## Answer Key: Sizzling Safety: The Lab Simulation Challenge for Sophomores

Risk assessment, SDS interpretation, and emergency response—identifying safe practices ensures every experiment concludes without a catastrophic failure.

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**1. A student accidentally splashes a concentrated salt solution into their eyes. What is the standard minimum duration for using the eyewash station?**

**Answer:** C) 15 to 20 minutes

Standard safety protocol requires flushing the eyes for at least 15-20 minutes to ensure all chemical residues are fully diluted and removed.

**2. You are tasked with diluting a concentrated acid with distilled water. What is the safest technique to prevent a thermal reaction or splashing?**

**Answer:** B) Add the acid to the water slowly

Always Add Acid (AAA). Adding acid to water allows the water to absorb the heat generated, preventing the acid from boiling and splashing.

**3. When working with volatile organic compounds that produce harmful vapors, the experiment must be conducted inside a \_\_\_\_\_.**

**Answer:** B) Fume hood

A fume hood uses ventilation to draw toxic gases, vapors, and dusts away from the user's breathing zone.

**4. If a piece of glassware has a small 'star crack' at the bottom, it is still safe to use as long as you do not heat it over a Bunsen burner.**

**Answer:** B) False

Damaged glassware can fail unexpectedly under the weight of liquids or during minor temperature changes; it should be discarded in a designated sharps container.

**5. Which specific document provides detailed information about a chemical's physical properties, hazards, and first-aid measures?**

**Answer:** C) The Safety Data Sheet (SDS)

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

The SDS is a standardized document mandatory for all hazardous chemicals, providing essential safety and handling information.

**6. If a person's clothing catches fire, the best immediate action is to 'Stop, Drop, and Roll' or use a \_\_\_\_\_.**

**Answer:** A) Fire blanket

A fire blanket is designed to smother flames on a person by cutting off the oxygen supply without causing the skin damage a chemical extinguisher might.

**7. Personal eyeglasses provide sufficient protection against chemical splashes in a high school chemistry lab.**

**Answer:** B) False

Standard eyeglasses lack side shields. Indirect-vent safety goggles are required to protect the eyes from liquid splashes coming from any angle.

**8. When heating the contents of a test tube, in which direction should the mouth of the tube be pointed?**

**Answer:** C) Away from yourself and others

Liquids can 'bump' or erupt out of a test tube when heated; pointing it away prevents accidental burns or chemical exposure.

**9. Biological waste, such as used petri dishes or swiped Q-tips, should be disposed of in a \_\_\_\_\_.**

**Answer:** D) Biohazard bag or container

Materials contaminated with biological agents require sterilization (usually via autoclave) and must be kept separate from regular trash.

**10. Long hair should be tied back and loose jewelry should be removed before starting a lab involving open flames or moving parts.**

**Answer:** A) True

Hair and jewelry can easily catch fire or get snagged in equipment, posing a significant risk of injury or fire spread.