Risk Assessment

Kastle – Meyer Presumptive Blood Test

Activity

Using the Kastle–Meyer test to carry out a presumptive test for blood in a laboratory or classroom setting.

Location

Forensic science laboratory / classroom.

Persons at Risk

- Students
- Teachers / technicians
- Visitors observing the activity
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Description of Procedure

Students apply ethanol to a sample, add Kastle–Meyer reagent (phenolphthalein), and then hydrogen peroxide to observe a colour change indicating the possible presence of blood.

Hazard Identification and Control Measures

Hazard	Risk	Control measures	Residual Risk
Hydrogen peroxide solution	Irritation to skin, eyes, or respiratory system	Use dilute solution (typically 3% or lower). Wear eye protection and gloves. Avoid splashing. Clearly label containers.	Low
Kastle–Meyer reagent (contains phenolphthalein in alcohol)	Irritant; harmful if ingested	Wear gloves and goggles. Avoid skin contact. Do not pipette by mouth. Wash hands after use.	Low
Biological samples or simulated blood	Potential biological contamination	Real blood is used which is defibrinated horse blood, follow biological handling	Low

		procedures and obtain approval. Dispose of contaminated materials safely.	
Spillages	Slip hazard or chemical exposure	Clean spills immediately using appropriate spill procedures. Inform teacher/technician. All chemicals are contained in a sealed, droplet bottle to prevent spills if dropped.	Low
Cross-contamination of samples	False results	Use separate swabs and droppers for each sample. Label samples clearly.	Low

Personal Protective Equipment (PPE)

Disposable nitrile gloves

Safe Working Procedures

1. Tie back long hair and secure loose clothing.
2. Wear PPE throughout the practical.
3. Use only small quantities of reagents.
4. Never taste or directly smell chemicals.
5. Handle all samples as potentially hazardous.
6. Wash hands thoroughly after the activity.
7. Dispose of swabs, gloves, and contaminated materials in designated waste containers.

First Aid Measures

Incident	Action
Chemical in eyes	Rinse immediately with water for at least 10 minutes and seek medical attention.

Skin contact	Wash affected area thoroughly with soap and water.
Inhalation of vapours	Move to fresh air and seek assistance if symptoms persist.
Cuts from broken glass	Clean wound, apply dressing, and seek first aid support.
Fire involving ethanol	Use appropriate fire extinguisher (CO_2 or dry powder) and follow evacuation procedures if necessary.

Disposal

- Dispose of chemical waste according to local school/laboratory procedures.
- Contaminated swabs and gloves should be sealed in appropriate waste bags.
- Broken glass should be placed in a designated sharps container.

Supervision Requirements

- Activity must be supervised by a qualified teacher (tutor from Sherlock Bone) or laboratory technician.
- Students should receive instruction on safe handling before beginning.

Risk Level Summary

Stage	Risk Level
Before controls	Medium
After controls	Low

Approval

Dany Green

Manager & Workshop Tutor

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