



Chemical Spill in Research Laboratory

What happened?

A bottle of Tetramethylethylenediamine (TEMED) fell to the floor and broke in a research lab. Worker grabbed the bottle from the bench, when it slipped out of worker's hand and fell to the floor and broke. The bottle was not full and only had a few ml left inside.

What was the cause and lessons learned?

Worker was rushing to complete tasks and aliquots of TEMED in microtubes were not available. Bottles of TEMED should not be used on the bench – aliquots for use should be prepared in a fume hood. Reminder that personal safety is an ongoing priority and review the importance of scheduling tasks so workers do not feel rushed or distracted.

Upon review of this incident involving TEMED, the [Faculty of Medicine Joint Occupational Health and Safety Committee](#) has developed a list of chemicals to be used only in fume hoods. This list is not exhaustive; however, are known to be regularly handled outside of a fume hood.

Note: The below list of chemicals should be carried with new gloves when transporting the bottle. Ensure you transport with both hands, with one around the neck and one cradling the bottom.

1. TEMED

Inhalation hazard, causes eye and skin burns. Causes severe digestive and respiratory tract burns. Flammable liquid and vapor. Harmful if inhaled or swallowed. May be absorbed through intact skin.

Storage: Keep away from sources of ignition. Store in a cool, dry, well-ventilated area away from incompatible substances. Store in flammables cabinet.

Recommended PPE: gloves (nitrile) and safety goggles

2. Mercaptoethanol

Inhalation hazard, fatal in contact with skin, causes skin irritation, causes serious eye damage. Do not breathe dust/ fume/ gas/ mist/ vapours/ spray. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment.

Storage: Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Recommended PPE: gloves (latex/chloroprene) and safety goggles



3. Glacial acetic acid

Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting.

Storage: Store in flammables (not acid) cabinet, in secondary containment.

Recommended PPE: gloves (latex/chloroprene) and safety goggles

Resources Available

[UBC Chemical Safety](#)

[Contact Faculty of Medicine Health & Safety](#)