

NCERT Chemistry Lab Manual

Compiled Safety Guidelines & Rubric

SAFETY GUIDELINES & PRECAUTIONS

General Lab Safety Guidelines:

- Use chemicals in small quantities to reduce fumes, burns, and risk of accidents.
- Microscale chemistry reduces fire hazards and toxic exposure.
- Always wear safety goggles and a lab coat while performing experiments.
- Handle acids, bases, and organic solvents carefully; use droppers to minimize spills.
- Keep spirit lamps and burners away from flammable materials.
- Don't heat sealed containers (risk of explosion).
- Wash hands thoroughly after experiments.

Common Experiment Precautions:

- Use freshly prepared solutions (e.g., sodium sulphite, starch solution).
- Fix thermometers carefully so the bulb doesn't touch the beaker.
- Never heat a dry flask.
- If boiling point is above 95°C, use liquid paraffin instead of water.
- Keep paper strips (in chromatography) above solvent level.
- Ensure no air bubbles remain in burettes before titration.

RUBRIC / EVALUATION CRITERIA

While NCERT manuals don't include formal grading rubrics, evaluation is implied through:

- Observation Tables: Students must record correct readings (titration volumes, temperature ranges, R_f values).
- Result Sections: Students calculate & report final values accurately (e.g., boiling point, molarity).
- Notes & Calculations: Correctness of formulas, units, and calculation steps.
- Precaution Adherence: Points for following lab safety rules and stated precautions.
- Procedure Execution: Marks for correct sequence, technique, and cleanliness.