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# LAB SAFETY GUIDE



# INTRODUCTION



A safe laboratory is the foundation of effective science teaching. This guide has been created as a free, practical resource to support post-primary schools in maintaining high standards of laboratory safety during day-to-day teaching and learning. It reflects good practice commonly used in Irish schools and is informed by relevant health and safety legislation, including the Safety, Health and Welfare at Work Act 2005, associated regulations, and guidance from the Health and Safety Authority (HSA). This guide is **not intended to replace a school's Safety Statement or risk assessments**, but rather to complement them and act as a helpful reference for teachers, students, laboratory staff, and school management.

## Creating a safe Lab environment

A school laboratory is a place for exploration, discovery, and hands-on learning. However, it also contains hazards like chemicals, heat sources, and fragile equipment. Maintaining a safe lab environment ensures that experiments are conducted responsibly, accidents are prevented, and students can focus on learning without risk. By following safety protocols, everyone in the lab – from students to teachers – can work confidently and prevent injuries or damage.

## Roles & Responsibilities

### School Management

- Support safe science teaching by providing suitable laboratory facilities and equipment.
- Ensure appropriate arrangements are in place for the storage, handling, and disposal of chemicals and laboratory waste.
- Encourage regular reviews of laboratory safety practices.

### Teachers

- Plan practical work carefully and communicate safety expectations clearly to students.
- Supervise all laboratory activities at all times.
- Ensure that students understand both the purpose of experiments and the associated risks.

### Lab Technicians

- Assist with the safe preparation, storage, and disposal of materials.
- Maintain equipment and highlight issues before they become hazards.

### Students

- Follow instructions carefully and behave responsibly in the laboratory.
- Use equipment and materials only as directed.



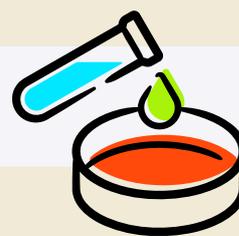
# CHEMICALS & HAZARDOUS MATERIALS

Effective chemical safety relies on good organisation, clear procedures, and appropriate disposal arrangements. In post-primary school laboratories, chemicals and hazardous materials should be managed carefully to minimise risk to students and staff.



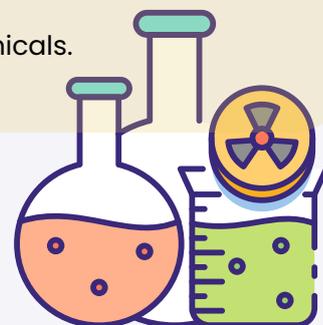
## Safe Storage

- All chemicals must be clearly labelled with their name, concentration (where relevant), and hazard information.
- Chemicals should be stored in designated, secure storage areas that are not accessible to students.
- Incompatible substances (e.g. acids and bases, oxidising agents and flammable materials) should be stored separately.
- Flammable liquids should be kept in approved flammable storage cabinets.
- Toxic or hazardous substances should be stored in locked cabinets.
- Shelving should be stable, in good condition, and fitted with spill lips where possible.
- Only quantities suitable for school use should be stored; excessive or outdated stock should be reviewed and removed. Good stock control reduces risk and makes emergency situations easier to manage.



## Safe Handling & Use

- Teachers should consider the age, experience, and ability of students when planning activities involving hazardous substances.
- Chemicals should only be used under teacher supervision and for approved educational purposes.
- Clear instructions should be given before practical work begins, including what to do in the event of a spill or accident.
- Only the minimum quantity required for an experiment should be used.
- Students should never handle chemicals directly with their hands; appropriate tools such as spatulas, droppers, or pipettes should be used.
- Safety eyewear and other required PPE must be worn when handling chemicals.
- Chemicals should never be tasted or deliberately inhaled.



# LAB SAFETY ESSENTIALS

## Key Rules

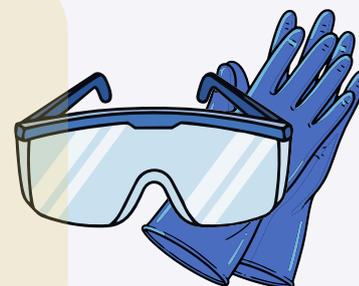


- Create clear, consistent rules to ensure a calm and controlled environment.
- Display laboratory rules prominently helps reinforce safe behaviour.
- Do not permit food, drink, or chewing gum in the laboratory.
- Store bags and coats away from benches and walkways.
- Running or horseplay is not acceptable at any time.
- Long hair should be tied back and loose clothing secured.
- Experiments should only be carried out with teacher approval and under teacher supervision.
- Wash hands thoroughly after practical work.



## Personal Protective Equipment

- Personal protective equipment (PPE) is a simple but essential control measure in school laboratories.
- **Common PPE includes:** safety goggles or glasses; laboratory coats or aprons; protective gloves, where appropriate.
- **Good practice includes:** wearing the correct PPE for the full duration of practical work; checking PPE for damage before use; cleaning, storing, or disposing of PPE correctly after use



## Safe Habits

- **Ventilation Matters:** Use fume hoods when handling strong chemicals or gases.
- **Safe Chemical Storage:** Keep acids, bases, and flammables in separate, clearly labeled cabinets.
- **Equipment Checks:** Inspect glassware, burners, and electrical tools before each use.
- **Emergency Access:** Know where fire extinguishers, first aid kits, and eyewash stations are.
- **Clean Hands and Surfaces:** Wash hands and wipe benches after experiments to prevent contamination.
- **Record Keeping:** Keep clear notes of procedures and any accidents for safety tracking.



# CHEMICALS & HAZARDOUS MATERIALS



## Chemical Spill Response

- Spill kits appropriate to the substances used in the laboratory should be readily available.
- Minor spills may be dealt with by trained staff using appropriate spill kits, and wearing PPE.
- Major spills should result in evacuation of the area and isolation of the hazard.
- All spills and disposal incidents should be reported and reviewed to prevent recurrence.

## Chemical & Lab Waste Disposal

- The correct disposal of chemical and hazardous waste is a key part of laboratory safety.
- Schools should use authorised waste management providers for the collection and disposal of hazardous laboratory waste.
- Using a specialist waste management service helps ensure compliance with legal requirements and reduces risk to students, staff and the environment.
- Chemicals should never be disposed of down sinks or drains unless specifically permitted.
- Waste chemicals should be clearly labelled and stored safely until collection.
- Sharps (e.g. broken glass, blades) must be disposed of in suitable sharps containers.
- Contaminated solids such as gloves, paper towels, or absorbent materials should be disposed of according to school procedures.



## Equipment, Gas, Electrical Safety

- Equipment should be checked before use and reported if faulty.
- Electrical items should be kept dry and switched off after use.
- Gas taps and supplies should be turned off at the end of each lesson.
- Work areas should be kept tidy to reduce trip and spill hazards.



# CHEMICALS & HAZARDOUS MATERIALS

## Teacher chemical safety checklist

### Before the Practical

- Chemicals required have been identified and quantities minimised.
- Relevant hazards have been considered and explained to students.
- Appropriate PPE is available and in good condition.
- Spill kits and emergency equipment are accessible.

### During the Practical

- Students are supervised at all times.
- Chemicals are handled using appropriate tools.
- Work areas are kept tidy and uncluttered.

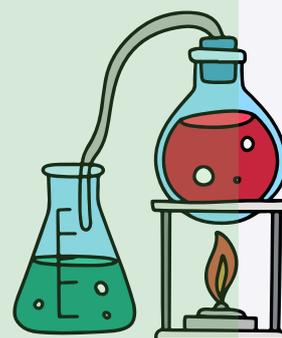
### After the Practical

- Chemicals are returned to correct storage locations.
- Waste is clearly labelled and stored safely.
- Benches and equipment are cleaned.
- Any incidents or near misses are recorded.



## Student chemical safety checklist

- Read all chemical labels carefully before use.
- Follow the teacher's instructions exactly.
- Never mix chemicals unless told to.
- Check hazard symbols and understand the risks.
- Use small quantities only – never take more than required.
- Keep chemical containers closed when not in use.
- Never taste chemicals or smell them directly.
- Keep chemicals away from flames and heat sources.
- Clean up spills immediately and report them to the teacher.
- Dispose of chemicals only as instructed.
- Never pour substances down the sink unless told to do so.
- Wash hands thoroughly after handling any chemicals.



# RISKS & INCIDENTS



Laboratory safety does not need to be complicated. Clear procedures, good habits, and access to the right equipment and support all contribute to a safer learning environment. Many schools choose to work with specialist advisors and suppliers to support safe laboratory operation, from reliable equipment provision to the compliant management of laboratory waste.

## Incidents & Emergencies

### Accidents & Near Misses

- All incidents should be reported immediately to the supervising teacher.
- Minor incidents can provide valuable learning opportunities and should still be recorded.

### Fire Safety

- Teachers and students should be familiar with evacuation routes.
- Fire blankets and extinguishers should be accessible and clearly marked.

### Chemical Spills

- Small spills can often be managed safely using appropriate spill kits.
- Larger spills may require evacuation and professional clean-up.

### Students

- Follow instructions carefully and behave responsibly in the laboratory.
- Use equipment and materials only as directed.



## Risk Awareness in Practical Work

- Risk assessment is about awareness and preparation, not restriction.
- Consider the age and experience of students.
- Adjust activities where necessary to reduce risk.
- Demonstrations may be more appropriate for higher-risk procedures.



## Keeping Safety Under Review

- Review safety practices annually
- Update procedures when new equipment or materials are introduced
- Promote an open culture where safety concerns can be raised easily



# SCHOOL LABORATORY WASTE COLLECTION SERVICE

PROTECT YOUR SCHOOL, PUPILS, & TEACHERS



**SECURE, RELIABLE, TRACEABLE COLLECTION AND DISPOSAL**

- Hazardous & non-hazardous
- Collection & disposal
- Segregation & classification
- Packing & labelling
- Disposal certification
- Laboratory clear-outs
- Recycling & recovery

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# TAILORED SOLUTIONS NATIONWIDE

For over 40 years, Ocon Chemicals has provided Irish school laboratories with safe, compliant waste management solutions tailored to each school's precise needs. Let us put our track record and expertise to work to safeguard your school, pupils, and teachers.



## COLLECTION & DISPOSAL

We will call to your school to an agreed schedule, classify and segregate your waste, and transport it securely for compliant treatment and disposal.



## RECYCLE & RECOVERY

We offer a comprehensive, end-to-end recycle and resource recovery service to convert your school's laboratory waste into new materials, products and energy sources.

### UN Approved Packaging:

sharps containers, drums, buckets, waste bins, bulk containers, solvent containers.

## GUARANTEED COMPLIANCE

Our team of waste management experts from our HazChem and ADR trained drivers to our in-house DGSA advisors guarantee a safe, compliant service in accordance with our ISO 9001:2015 certified procedures and waste transfer protocols.

## DOCUMENTATION

We guarantee full traceability on all waste disposal transactions via our waste disposal documentation, and certificates of destruction.