



**Trinity College Dublin**  
Coláiste na Tríonóide, Baile Átha Cliath  
The University of Dublin

**Faculty of Engineering, Mathematics and Science**

**2016-17**

**Health and Safety Guidance Manual**

**for**

**Undergraduate Students\*, Socrates and Visiting  
Students, Postgraduate Students & New  
Staff/Research Personnel**

(\*including Human Health and Disease students)

## **General Safety Action**

When you enter a building in college (lecture theatre, laboratory, communal area, library, restaurant, bar etc.)...

- Find out how to get out in an emergency;
- Know the location of the emergency evacuation assembly point;
- Look for the fire safety equipment;
- Know where the nearest alarm call point is;
- Read the hazard information signs (fire, first aid, chemical, biological, radiation, laser etc.);
- Know the location of the emergency drench-shower/eye bath.

Remember...

The College Emergency Number is Ext 1999 (01-896-1999 from a mobile phone) for safety and personal security concerns.

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## Introduction

The purpose of this document is to provide foundation information for new staff and postgraduate students and for all Junior Freshman, Socrates and visiting students, taking courses in this Faculty, on how to work safely in laboratories or on field trips in situations which are potentially hazardous.

The guidelines set out must be understood and observed, but observation is not enough.

You must foster a responsible attitude and remain alert and aware at all times. Common sense is your best ally in ensuring both your own and your colleagues' safety. Remember that most, if not all, experiments are potentially hazardous. Therefore, never work unsupervised or alone while performing laboratory or field work. If you are a student, you must always await specific instruction before undertaking experimental or field work of any kind. Specific instructions may be provided by the academic staff supervisor, demonstrator or technician in the laboratory or from your laboratory manual, etc.

In the interests of safety, any student who fails to obey regulations or instructions from academic or technical staff (including demonstrators) may be excluded from the class, laboratory or fieldtrip, as appropriate. College disciplinary procedures may be invoked to deal with student or staff violations of regulations.

Safety, health and welfare of staff and students is managed within College in accordance with statutory legislation [[www.ir.gov.ie/ag](http://www.ir.gov.ie/ag)] and guidance published by the Health and Safety Authority [[www.hsa.ie](http://www.hsa.ie)], the Environmental Protection Agency [[www.epa.ie](http://www.epa.ie)], Department of Health and Children [<http://www.dohc.ie/>] etc.

### **Safety, Health and Welfare information for students and staff**

Trinity College is committed to providing a safe and healthy educational, recreational and residential environment for all staff and undergraduate and postgraduate students. This document summarises the essential information staff and students need to know to achieve and operate within that environment. Please take a few moments to read this document carefully. Additional advice, rules and regulations will be provided at School / course level as appropriate.

Further information or advice on any aspect of health and safety, fire safety or environmental protection can be obtained from the College safety officer (Ext 1914) or the College Health and Safety website: <https://www.tcd.ie/Buildings/Safety/safetyhealthandwelfare.php>

### **College Policies on Health & Safety**

The Board of the College determines overall policy on Health and Safety matters and has put in place a management and organisation structure (described in Appendix II). This should be read in conjunction with the Board statement on Safety published in the University Calendar.

The College's Safety Statement may be consulted in the Safety Office (West Chapel) or on the Safety, Health & Welfare website <http://www.tcd.ie> (click on Administration & Services, then Safety Health & Welfare Home Page).

Consult your School (or unit/area) Safety Statement for more detailed information and advice.

## **"You are your own safety officer"**

You have responsibilities for your own safety and that of your classmates or work colleagues. This extends to the classes after hours, as you could carelessly leave behind hazards injurious to them, e.g. broken glass, infectious bacteria, toxic and dangerous chemicals etc. Your responsibility is in line with standard practice as you will find it when entering employment. There can be no excuses when you are provided with equipment, training and instructions necessary for the work in hand. You have a legal duty under the Safety, Health and Welfare at Work Act, 2005, to act responsibly so as not to endanger others.

## Emergency action

All emergencies: fire, gas leaks, injuries, hazardous chemical spills and other serious potential hazards must be reported immediately to a member of staff, or in their absence to the Security Centre on Ext. 1999 (01-8961999) (24 hour service)

### Emergency evacuation of laboratories, lecture theatres and buildings

Emergency evacuation of a laboratory and building may be signalled by the alarm bell (a continuous ringing bell), the public address system or in person by instructor/demonstrators

#### In an emergency evacuation you must:

1. Leave the building promptly (do not waste time collecting your personal effects);
2. Walk via the nearest escape route to an exit door;
3. Do not rush, push or shove past others;
4. Do not stand around outside building (danger of glass, shrapnel and blocking the egress of others etc.);
5. Report to the designated assembly point (see map at back of booklet);
6. Attend the roll call by forming a class or laboratory group along with your instructor / demonstrators or colleagues. Account for absent or missing persons to your instructor or the safety officer.

#### On discovery of a fire, you must:

1. Raise the alarm by breaking the nearest break-glass unit (red wall-mounted call-points);
2. Leave the building promptly;
3. Inform a member of staff or the Security Centre (Ext: 1999 or 01-869-1999);
4. Report to the designated assembly point.

Any attempt to extinguish the fire should only be made after the alarm has been raised, and only if you have a clear escape route, it is safe to do so and if you have been trained by College in the use of fire extinguishers.

All staff and students are asked to familiarise themselves with the locations of relevant break-glass units and exit routes.

Safety officers and fire wardens for each School or building have been appointed. Follow their directions in the event of a fire or other emergency evacuation procedure.

**Each building has a specific assembly point assigned to it in the near vicinity.  
You must know where this is in advance of any emergency (see Appendix I)**

## **General Safety Information**

### **Illness**

If you feel unwell during a lecture or laboratory, inform the academic staff member in charge of the class or your supervisor.

If you feel unwell after the class or your work is over and you seek medical advice, then be sure to mention that you have been working in a laboratory. Your doctor needs to know this so that he or she can arrive at a proper diagnosis.

### **Accidents and dangerous occurrences (incidents)**

All accidents and incidents, however trivial, must be reported immediately to the academic staff member in charge or the School safety officer and will be recorded on an appropriate form by the safety officer in the School or unit where the event took place.

In the case of accident or injury, you may need to take some immediate action, on your own behalf or on behalf of someone else. However, you must never place yourself in danger in an attempt to assist an accident victim. Subsequent action is the responsibility of the School staff member present. The staff member will, in the event of an injury, ensure that you obtain first-aid treatment in the School/unit, or at the College Health Centre, Ground Floor, Houses 47/52 (phone ext. 1556), or ensure that an ambulance is called and that you are referred to the "on-call" accident hospital.

You should not be taken to hospital by taxi or in a private car.

In the case of referral to the College Health Centre you must be accompanied by a staff member (gender-matched) so that you are under supervision making your way there.

### **Emergency services number**

The duty College Security Officer can be reached by dialling extension 1999 on all telephones. All requests for emergency services must be made through the duty security officer.

### **Mental health management**

Trinity College plays an active role in supporting positive mental health in the College community. The College provides support, guidance and treatment opportunities to students with mental health problems. A student experiencing symptoms of mental anguish may contact the College Health Service or counselling service and request an appointment. Please see: [www.tcd.ie/collegehealth/mental-health/](http://www.tcd.ie/collegehealth/mental-health/)

### **Sports safety**

Staff and students are advised to receive proper training and instruction before engaging in sporting activities within College. Training in the use of the weights room is offered by staff of the sports centre.

### **Personal security**

There is a risk of theft of personal belongings in the city centre and in College. Staff and students, therefore, should be alert to this risk. Bicycles should be left locked in visible, secure public areas or in any of the College bicycle parks. Specific security advice can be obtained from the Security Services Manager (Mr Michael Murray, Ext. 2648)



## **Field courses & fieldwork**

The planning and supervision of off-site educational activities should be carefully planned prior to the event. A formal written risk assessment must be carried out in advance and recorded. Students must follow all instructions issued by members of staff.

## **Personal health & susceptibilities relevant to laboratory and field-work**

It is up to you to keep yourself fit and healthy while you are in College. Sports facilities and medical facilities are financed from your capitation fees and should be used to best advantage.

If, however, you suffer from any of the following medical conditions:

- |   |                     |
|---|---------------------|
| ✓ Colour Blindness                      | ✓ Fainting episodes |
| ✓ Diabetes                              | ✓ Skin Diseases     |
| ✓ Epilepsy                              | ✓ Haemophilia       |
| ✓ Immunodeficiency                      | ✓ Hearing Disorders |
| ✓ Asthma                                | ✓ Allergies         |
| ✓ Balance Disorders                     | ✓ Visual Impairment |
| ✓ And/or you know that you are pregnant |                     |

Then you should:

1. inform your own doctor that you are working in laboratory or undertaking a laboratory based course or field work;
2. inform your tutor (students only);
3. complete the "Confidential Health Survey" through Blackboard;
4. Make an early appointment to consult with the College Health Centre (Ext: 1556).

They will advise you of any risks involved and may make certain recommendations to you to ensure that you are not placed in potentially hazardous situations. Arising from this assessment you may need additional supervision, which will be implemented in consultation with you.

If you should become pregnant at any stage in your career in College, then you must consult with the College Health Centre and inform your local safety officer as soon as pregnancy has been confirmed.

## **Automatic external defibrillator**

Automatic external defibrillators (AEDs) are located in sports centre (accessible only during opening hours) or in the college security van. You are only permitted to deploy an AED if you have been trained in its use.

## **Lone working**

All students must be supervised by a member of staff whilst engaged in educational activities.

Working alone is not allowed under any circumstances.

Study within buildings occupied by members of staff counts as supervision.

## **Smoking**

Smoking is not allowed in any College buildings.

## **Safety equipment**

Misuse of any plant or equipment is prohibited. This includes first aid kits, fire extinguishers, fire exits, fire alarm break-glass units or personal protective equipment.

Means of escape from buildings (fire doors, corridors and staircases) must never be obstructed or locked shut.

Severe penalties will be imposed if any fire alarm or escape provision is interfered with.

## **Additional guidelines**

The nature of the Faculty brings students into contact with potentially hazardous chemicals, machinery and equipment. Therefore, Health & Safety rules in these areas are particularly important to maintain a safe working environment. Staff and students in these areas must:

1. Read all School laboratory manuals and/or safety manuals as supplied;
2. Perform all instructions as directed by members of staff;
3. Not interfere with or misuse any plant, equipment, chemicals, or materials supplied;
4. Possess eye protection at all times when working in a science based laboratory for use as appropriate;
5. Wear laboratory safety coats at all times when working in a laboratory. The coat must conform to NISO specification 1993, or better ('Howie' type coat with 'popper-type' fasteners, elasticated cuffs and wrap over chest protection);
6. Observe all displayed safety rules;
7. Report all defects in plant, equipment and materials to a member of staff;
8. Never dispose of any laboratory wastes (chemicals etc.) unless authorised by a member of staff;
9. Report any symptoms of ill health immediately to a member of staff or the School safety officer.

## **Important contacts**

College Safety Officer	Mr. Tom Merriman,	Ext. 1914
Chief Steward (Security)	Mr. Michael Murray,	Ext. 2648
College Health Centre	Dr. David McGrath (GP)	Ext. 1556

## General precautions for work in all laboratories

The following general precautions apply in all FEMS labs:

- Watch where you are going!
- Wear your lab coat;
- Wear safety glasses when conducting experiments in the laboratory and as advised by the demonstrator;
- Always wash your hands upon leaving the laboratory;
- Cuts and abrasions must be covered by a waterproof dressing (in the case of skin rashes, and similar ailments, suitable gloves must be used);
- Long hair must be tied back;
- Eating, drinking, smoking or applying cosmetics is prohibited;
- Do not lick envelopes, stamps or your fingers or bite your nails whilst working in the laboratory;
- Wash your hands if you spill reagents or other materials on them;
- Do not rush or carry sharp items around the laboratory;
- Do not "act the fool" in a laboratory - it can be very dangerous practice;
- Accidents caused by tripping, slipping and falling are among the most common of all in laboratories. Never rush about: watch for obstructions left lying on the floor. Avoid cluttering benches, floors and walkways with your personal effects - a bag or bike helmet left on the floor could result in someone else tripping over it;
- You must never conduct an experiment or a step or procedure unless you know exactly what you are doing and have received the necessary instruction, advice, equipment, safety devices or personal protective equipment. If in any doubt then you should always ask for advice from your instructor or demonstrator or supervisor. Safeguarding your own or others' safety is mainly a matter of using your knowledge to perform the experiment or steps safely and your imagination to anticipate how and where hazards can arise;
- In the event of a spill and/or a breakage, a person in charge must be informed immediately, even in the case of the most trivial breakages. This must always be done if mercury is spilt, for example, when a thermometer is broken.

### Laboratory wastes

Do not place laboratory wastes (chemicals, hazardous biological agents, sharps, radioactive materials, test-tubes, etc.) in the standard domestic-type waste bins.

Do not discard solid wastes in the sinks and drains.

Glass (whether broken or not) and other "sharps" (needles, pins, lancets, blades, etc.) must only be disposed of into "sharps" containers specifically identified for this purpose.

Toxic or dangerous wastes must only be disposed into designated containers.

Always seek advice if you are uncertain about what to do with your laboratory wastes.

## **Use of general laboratory equipment**

### *Pipette fillers*

Mouth pipetting is banned. Place all pipettes upright inside clean test tubes stored in a test tube rack. When pushing a pipette into a pipette filler device, always hold the pipette and the pipette filler as close to the point of junction as possible. Use a cloth to hold the pipette (unless otherwise instructed). Push the pipette in gently; do not screw it in. Failure to observe proper precautions may lead to serious injury if the pipette snaps and broken glass is rammed into your hands.

The use of glass Pasteur pipettes is generally banned in the EMS Faculty. Plastic Pasteur pipettes should be used whenever possible.

### *Fume cupboards*

Containers found in a fume cupboard must not be removed from it unless this is specifically indicated. Any operations which give off harmful gas, aerosol or vapour must be performed there. Make sure that the fan is on and that the front window of the fume cupboard is no higher than chest level (500mm maximum opening). Avoid sudden movements of your hands within the cupboard and of your body outside the cupboard (turbulence must be avoided). The work base of the unit must not be cluttered; otherwise the airflow will not scavenge the toxic vapours. Your work should be conducted over a spill-tray (compatible with any chemical reagent you may be using!).

### *Use of Personal Protective Equipment (PPE)*

You may have to use additional safety equipment such as disposable gloves, face-shields, remote handling devices, screens (to protect against implosion of glassware used in vacuum work), respirators, disposable aprons and overshoes etc., your instructors, demonstrators or supervisors plus your practical manual (or other protocols) must be consulted as appropriate.

### *Use of glass tubing and other glass apparatus*

Cuts and lacerations from broken glass comprise the most frequent injury received whilst working in laboratories. Glass tubing must not be inserted into rubber bungs and corks unless it is held in a cloth or you are using leather work gloves. Rubber bungs should be lubricated with water or glycerol. Similarly, a condenser or other similar apparatus must be held in a cloth while rubber tubing is put on.

### *Heating liquids in a test tube*

This is often the cause of accidents. Before starting the procedure, warn colleagues about the hazard. Eye protection must be worn. Hold the test tube in a wooden "clothes peg" type holder; do not use a metal crucible tongs. A piece of paper folded over several times may also be used. Heat the tube gently without shaking and point it away from yourself and others. Heating sodium hydroxide solution is especially difficult as it tends to bump suddenly. It is wiser to use a boiling chip to prevent such problems.

## **Common hazards in laboratories**

The list of potential hazards that may be present in laboratories is too extensive to print in this manual but fire and electrical hazards are present in all laboratories.

## *Fire*

Smoking is prohibited in all college buildings. Always be conscious of the need to prevent a fire from occurring. Keep flammable solvents away from sources of heat and ignition. Switch electrical equipment off at the socket after use. Be particularly careful not to leave bench lamps or microscope lamps on in close contact with the bench surface - this can lead to scorching and hence to fire. Study the notices which are posted telling you what to do in the event of fire. Make a note of the location of emergency exits so that if a fire breaks out you know how to get out!

Be especially careful when handling highly flammable solvents such as diethyl ether, acetone, petroleum ether, etc. Use only the minimum quantity at the bench and keep the stock container closed and in its fire-proof cabinet when not in use.

Sources of ignition include gas geyser pilot-lights, thermostats on water baths, switches arcing, plug-tops arcing on removal from socket, static discharge from synthetic fibre clothing, as well as naked flames from Bunsen burners. Natural gas burns with a silent and colourless flame so that you may not be aware that a Bunsen burner is lit. Remember that a fully aerated Bunsen flame is invisible in sunlight. Watch out that you do not set fire to your clothing if you come too close to the burner. Matches and/or tapers should not be used to light Bunsens - use a gas lighter so that a smouldering match lying in a waste bin does not subsequently start a fire. Do not have round-flasks on a bench or shelf exposed to sunlight - the flask may act as a lens and lead to a fire starting on wood or paper in close proximity.

In case of fire, take the following action:

In a test tube - know in advance how to extinguish an experiment based on the chemicals in use. Remove test tube heat source if applicable. Remove oxygen by covering with a suitable cover, Pyrex watch-glass or dish.

In a beaker - cover as above. Do not use water or an extinguisher unless the fire extends beyond the vessel (danger of knocking over vessel). You may use sand from fire-buckets if provided.

On the bench or floor - get the nearest fire blanket and cover the fire to exclude air. Do not use water.

On somebody's clothing - push the person onto the ground and smother flames with a fire blanket. If your own clothes catch fire, roll from side to side on the ground until someone helps you.

**Note the location of fire blankets.**

**Note the operation of fire extinguishers – the correct choice of appliance is vital.**

**Do not use fire extinguishers unless you have been trained by College in their use.**

## *Electricity*

Most of the equipment you will be using operates off 220 volts, 50hz/AC Mains supply. Some of the equipment you will operate may be high-voltage apparatus.

You will need to be vigilant in your use of electricity. Disconnect portable equipment from the supply point whilst making changes in so far as is practicable. Do not override safety interlocks designed to protect you from shock.

Get into the habit of approaching electric apparatus, especially new or unfamiliar equipment, in a tentative manner before firmly grasping it or holding onto it. It is better to brush the back of your hand

against the piece of equipment rather than to grasp it. If it is "live" then your hand will be repelled and you may only receive a relatively mild shock.

Take the following action in the event of an electric shock:

- Cut off power to the apparatus either locally by means of a socket switch or plug
- OR
- Push or pull the victim away from the apparatus by means of an insulated piece of furniture - plastic chair, wooden stool etc.,
  - Apply immediate resuscitation procedures to the victim if he/she is unconscious and obtain medical assistance. At the very least, place the victim in the recovery (safe-airway) position to maintain an airway.
  - If you have been trained in the use of an AED, one is available in the sports centre (during opening hours) or from the college security van (ext. 1999).

## **Precautions specific to the physical lab**

Always distinguish between equipment of similar appearance but different function e.g. ammeters and voltmeters, microwave and receivers etc.

Beware of high and low temperatures e.g. Bunsen burners, soldering irons, liquid nitrogen etc.

Beware of optical hazards, particularly lasers.

Never keep heavy masses near the edge of a workbench.

Beware of electrical hazards such as high voltages or the use of incorrect supply voltage.

When working with a radioactive source, always keep it shielded and comply with the College rules (<http://www.tcd.ie/Buildings/Safety/rswelcome.php>).

Avoid spilling or handling mercury.

## Precautions specific to the chemical and biological laboratories

You must always wear a laboratory coat of the 'Howie' style conforming to the NISO specification (1993 or better) as sold in the Students' Union Shop (no 6 Front Square, College). Students will not be allowed to attend a practical if they do not have a laboratory coat. This must be worn closed. If your laboratory coat is alight, has an acid spill or microbial contamination, it is best removed from behind by a 'buddy' and then turned inside out. Note: Lab coat specifications may change in Sophister years and at postgraduate level.

You must carry on your person a pair of safety spectacles whilst you are in the laboratory and you should wear eye protection at all times when anything is being heated or shaken either at your bench or at adjacent ones, and in addition when instructed to do so (e.g. when handling irritant or toxic reagents).

Wearing contact lenses is forbidden. If you wear spectacles, you are recommended to use goggles of the 'PulSAFE' kind which go over ordinary spectacles.

Remove lab coats and gloves before leaving the laboratory.

Almost all chemicals are hazardous if used improperly, but some are especially so.

- Very hazardous chemicals include concentrated acids, volatile organic liquids, carcinogens.
- Any spill must be reported immediately.
- Read the Hazard Warning symbols and Risk and Safety Phrases information where provided on stock reagent bottles or containers.
- Obey special handling instructions printed on each bottle or container (see Appendix IV).
- Safety Data Sheets (SDSs) are available, from suppliers or compendiums, for all hazardous chemicals (for example, follow this link to Sigma-Aldrich MSDS System (<http://www.sigmaaldrich.com/safety-center.html>))
- The Chemical Hazards sections (<http://www.tcd.ie/Buildings/Safety/safetychemicalsafety.php>) of the College safety website should be consulted for further information

### *Acid on the skin*

Call demonstrator immediately. Concentrated sulphuric acid - wipe off the bulk of the acid with a cloth and then wash off the acid with a large volume of water from the tap. Place cloth in water immediately. Other acids or alkalis may be washed off directly.

### *Irritant material in the eye*

The injured person should bend forward with the head tilted so that the injured eye is at a lower level. Water from the eye bath is then squirted into the injured eye. Try to persuade the person being treated to open his/her injured eye (severe pain may prevent this). Call the College Emergency number 1999 (or 01-8961999 if using a mobile) and request an ambulance to transport the victim to hospital for evaluation and further treatment.

### *Chemical substance in the mouth*

Wash out the mouth with large quantities of water. Immediately inform the staff member in charge.



## **Precautions specific to fieldwork**

Fieldwork is defined as any practical work carried out by staff or students of the University for the purpose of teaching and / or research in places which are not under University control, but where the University is responsible for the safety of its staff and students and those exposed to their activities.

Fieldwork should never involve a significant risk to your safety or the safety of others.

It is the responsibility of the Head of Discipline or Head of School to ensure that the risk assessment for all fieldwork is undertaken and to ensure that a safe system of work has been established for all students.

This risk assessment must be undertaken by the fieldtrip leader and signed off by Head of Discipline or Head of School.

All students must read and understand their Discipline/School Safety Statement relating to fieldwork and must follow all instructions contained therein.

Students must follow all instructions outlined by fieldtrip leaders and demonstrators.

There is also a duty on the fieldwork participants to take reasonable care for their own safety and that of those affected by their work.

Staff and students on residential fieldtrips should be aware of the particular risks inherent in spending recreational time in unfamiliar locations, particularly bars and clubs, and in travelling to and from those locations and in their place of temporary residence. All residential fieldtrips are advised to take necessary precautions during their recreational time, and students must keep staff on the fieldtrip informed of their plans.

Those attending foreign fieldtrips are strongly advised to have individual travel insurance as they are only covered by the College's general liability policy.

If undergraduates are expected to work alone, the Discipline or School must lay down clear guidelines on the scope of the activities which may be undertaken. Please note that lone working is not encouraged.

All accidents and incidents on the fieldtrip should be reported to the fieldtrip leader who should have access to first aid equipment.

Students should always wear appropriate clothing and footwear for the conditions to be encountered on the fieldtrip.

## Appendix I: List and map of assembly points

Building	Designation	Assembly Point
The Lloyd Building	E	Between the Lloyd and O'Reilly Buildings, near the Arches
Hamilton Building	E	Between the Lloyd and O'Reilly Buildings, near the Arches
O'Reilly Institute	E	Between the Lloyd and O'Reilly Buildings, near the Arches
Biology Teaching Centre	E	Between the Lloyd and O'Reilly Buildings, near the Arches
Centre for the Environment	C	Grass Triangle ('Flat Iron') at East End of Boardwalk (College Park)
Chemistry Building; Zoology / Physiology Building	D	Grass triangle ('Flat Iron') at east end of Boardwalk (College Park)
Museum Building	B	Fellows' Square opposite entrance to old library
Physics Building; Botany Building; SNIAM Building	D	Grass triangle ('Flat Iron') at east end of Boardwalk (College Park)
Biochemistry Building	E	Between the Lloyd and O'Reilly Buildings, near the Arches
Westland Row; EM Unit East End 4/5; Genetics; Maths; Pharmacy.	E	Between the Lloyd and O'Reilly Buildings, near the Arches
TBSI Pearse Street	G	Cumberland Street
TBSI Pearse Street	F	Sandwith Street

Assembly points may change during the year, so please familiarise yourself with any changes when notified

# TRINITY COLLEGE DUBLIN FIRE ASSEMBLY POINTS

1. Do not tele from 1110 drawing. ueft gur8d dmenolono only.
2. All dmar-.IO'll to ba chacka:t on Biiia.
3. All •rwand DITmlllorato ba rapc'llld to thll affica.
4. Drawing tD be !Mdn conjuelion with relevant con11.11tan11drawingeand1 pecificiOI'8.

## FIRE ASSEMBLY POINT LEGEND

- @ THECAWANILE
- @ PROVOSTS HOUSE FORECOURT
- (R) TRIARC STABLES EXTRAMP/LIFT
- (R) FEWJWSQUARE
- (C) THE ROOBY GROUHI CAR PARK
- (@.) PEARSE STREET (EXIT GATE)
- @ THE FLATRON
- @ BETWEEN LLOYD/OREILLYNSTHUTE8(ARCIE9
- (C) OOLDSMITMALLCOURTYARD
- (R) BIH. C.UJIBERLAND STREET CORNER
- @ FOSTER PLACEIB.0.1. POI-TICO
- (D) DAVENPORT HOTEL
- @ WEBTAND SQUARE (REAR CAJIFARK)
- (C) SCREENCINEMA FORECOURT

CADRef: Z:\505\VC...rnt Collogolap\HN CB--  
Exl8mal Rol'll: NcD/ICF 1J.02.01

Director of Buildings' Office  
West Chapel  
Trinity College  
Dublin 2

Phone: (+353) 01 aee 22112  
Fax: (+8511) 0187937911  
Web: <http://WWW.1Colio/buildingo>  
Email: dl11wfrVI@tcd.ie

FireObservallona2DOB

Trl lty: College DJ>lln  
Main Campus FireObservallona  
FireAssembly Points

CH :  
Trinity College Dublin

Drawing No.  
505-F0-004  
Building Allu umber.  
505

## **Appendix II: Health and Safety organisation and management in the College and the Faculty of Engineering, Mathematics and Science**

The Board of the College determines overall policy on Health and Safety matters through the College Safety Committee and the College Safety Officer (Mr. Tom Merriman, West Chapel, Ext. 1914). But at local level the organisation and management is co-ordinated by each Faculty through its own Safety Committee and the Faculty Safety Representative and performed at School level by the Head of School and the School Safety Officers. In addition, the Board has appointed specific hazard officers (Chemical, Biological, Ionizing Radiation, Laser, etc.) who advise it on health/safety aspects of certain major hazard areas.

The Board and each Faculty, School, unit or area publish a 'Safety Statement' under the terms of 'The Safety, Health and Welfare at Work Act, 2005'. In the case of staff the appropriate local safety statements should be read in conjunction with this Faculty Health and Safety Guidance Manual because together they form the basis of the general 'Safety Statement' of this Faculty. Their scope is extended further by reference to individual schools/unit safety advice contained in various regulations, codes of practice, advice notes, briefing sessions, workshops, personal instruction etc., which you may be issued with during the course of this or subsequent years in College.

### **Legal framework for health and safety matters**

The legal general framework for health and safety matters in this country is provided by The Safety, Health and Welfare at Work Act, 2005, and a range of Statutory Instruments, but note that other specific statutes and regulations have force in the control and regulation of certain hazards and activities ( e.g. explosives, psychotropic drugs, ionizing radiation, etc.).

### **Mandatory health and safety introductory briefing sessions**

All new entrants must attend mandatory introductory talks on health and safety practices which are held during the first few weeks of Michaelmas term. Staff and postgraduate students should receive health and safety briefings from their School Safety Officers and supervisors you must register with your Safety Officer prior to starting active laboratory work.

In the case of students, additional instruction will be given during laboratory sessions early in the term. Take these seriously and learn to develop an attitude of vigilance and hazard awareness when working in laboratories or on field work. If for any reason you miss these sessions, contact the relevant School Safety Officer.

### **Staff safety representative**

A Staff Safety Representative has been elected to look after the interests of all personnel (not students) who work in the Faculty as provided under the 2005 Act. You should feel free to consult with the Safety Representative about any safety concerns.

Name: Mr. David Grouse.

## Appendix III: Hazard Labelling















# CLP Regulation (EC) No. 1272 / 2008





on the classification, labelling and packaging of substances and mixtures




Rev.0, October 2010



Classification			Labelling			
Hazard-		Abbreviation of classification (without H set)	Pictogram, code*	Signal-word	Code* Warning of danger	
Class	Category					Text
Explosives	Unstable explosive	Unst. Expl.	 GHS01		H200	Unstable explosive
	Division 1.1	Expl. 1.1			H201	Explosive; mass explosion hazard
	Division 1.2	Expl. 1.2			H202	Explosive; severe projection hazard
	Division 1.3	Expl. 1.3			H203	Explosive; fire, blast or projection hazard
	Division 1.4	Expl. 1.4		Warning	H204	Fire or projection hazard
	Division 1.5	Expl. 1.5	No Pictogram	Danger	H205	May mass explode in fire
	Division 1.6	Expl. 1.6	No Pictogram	-	-	No hazard statement
Flammable Gases	Category 1	Flam. Gas 1	 GHS02	Danger	H220	Extremely flammable gas
	Category 2	Flam. Gas 2	No Pictogram	Warning	H221	Flammable gas
Flammable Aerosols	Category 1	Flam. Aerosol 1	 GHS02	Danger	H222	Extremely flammable aerosol
	Category 2	Flam. Aerosol 2		Warning	H223	Flammable aerosol
Oxidising Gases	Category 1	Ox. Gas 1	 GHS03	Danger	H270	May cause or intensify fire; oxidiser
Gases under Pressure <sup>(1)</sup>	Compressed gas	Press. Gas	 GHS04	Warning	H280	Contains gas under pressure; may explode if heated
	Liquefied gas				H281	Contains refrigerated gas; may cause cryogenic burns or injury.
	Refrigerated liquefied gas				H280	Contains gas under pressure; may explode if heated
	Dissolved gas					
<sup>(1)</sup> = The hazard class "Gases under Pressure" is subdivided into 'Groups' (not 'Categories')						
Flammable Liquids	Category 1	Flam. Liq. 1	 GHS02	Danger	H224	Extremely flammable liquid and vapour
	Category 2	Flam. Liq. 2		H225	Highly flammable liquid and vapour	
	Category 3	Flam. Liq. 3		Warning	H226	Flammable liquid and vapour
Flammable Solids	Category 1	Flam. Sol. 1	GHS02	Danger	H228	Flammable solid
	Category 2	Flam. Sol. 2		Warning		

Classification			Labelling			
Hazard-		Abbreviation of classification (without H set)	Pictogram, code*	Signal -word	Code* Warning of danger	
Class	Category					Text
Self-reactive substances and mixtures <sup>(2)</sup>	Type A	Self-react. A	 GHS01	Danger	H240	Heating may cause an explosion
		Org. Perox. A				
Organic Peroxides <sup>(2)</sup>	Type B	Self-react., B	 GHS01 + GHS02	Danger	H241	Heating may cause a fire or explosion
		Org. Perox. B				
	Type C and D	Self-react. C&D	 GHS02	Danger	H242	Heating may cause a fire
		Org. Perox. C&D				
Type E and F	Self-react. E&F	No Pictogram		Warning		
	Org. Perox. E&F					
Type G	Self-react. G	No Pictogram	No Signal word	-	No hazard statement	
	Org. Perox. G					
<sup>(2)</sup> = Two separate hazard classes have the same categories (and are therefore grouped).						
Pyrophoric Liquids	Category 1	Pyr. Liq. 1	 GHS02	Danger	H250	Catches fire spontaneously if exposed to air
Pyrophoric Solids	Category 1	Pyr. Sol. 1		Danger	H251	Self-heating; may catch fire
Self-heating substances and mixtures	Category 1	Self-heat. 1		Warning	H252	Self-heating in large quantities; may catch fire
	Category 2	Self-heat. 2		Danger	H260	In contact with water releases flammable gases which may ignite spontaneously
Substances or mixtures which in contact with water emit flammable gases	Category 2	Water-react. 2		Danger	H261	In contact with water releases flammable gases
	Category 3	Water-react. 3		Warning		
	Category 1	Ox. Liq. 1	 GHS03	Danger	H271	May cause fire or explosion; strong oxidiser
Oxidising Liquids <sup>(2)</sup>	Category 2	Ox. Sol. 1		Danger	H272	May intensify fire; oxidiser
		Ox. Liq. 2				
Oxidising Solids <sup>(2)</sup>	Category 3	Ox. Sol. 2		Warning		
		Ox. Liq. 3				
	Ox. Sol. 3					
<sup>(2)</sup> = Two separate hazard classes have the same categories (and therefore grouped).						
Corrosive to metals	Category 1	Met. Corr. 1	 GHS05	Warning	H290	May be corrosive to metals

Classification			Labelling			
Hazard		Abbreviation of classification (without Hset)	Pictogram, code*	Signal -word	Code* Warnine of daneer	
Class	Category					Text
Acute Toxicity	Category 1	Acute Tox. 1	GHS06	inhaled Danger	H300	Fatal if swallowed
	Category 2	Acute Tox. 2			H310	Fatal in contact with skin
	Category 3	Acute Tox. 3			H330	Fatal if
	Category 4	Acute Tox. 4			H301	Toxic if swallowed
					H311	Toxic in contact with skin
					H331	Toxic if inhaled
	Category 4	Acute Tox. 4		Warning	H302	Harmful if swallowed
					H312	Harmful In contact with skin
					H332	Harmful if inhaled
Skin corrosion / irritation	Category IA	Skin Corr. IA	GHS05	Danger	H314	Causes severe skin burns and eye damage
	Category IB	Skin Corr. IB				
	Category IC	Skin Corr. IC				
	Category 2	Skin Irr. 2				
				Warning	H315	Causes skin irritation
Serious eye Damage / eye irritation	Category 1	Eye Dam. 1	GHS05	Danger	H318	Causes serious eye damage
	Category 2	Eye Irr. 2				
				Warning	H319	Causes serious eye irritation
Sensitisation of the respiratory tract or the skin	Respiratory Sensitisers Category 1	Resp. Sens. 1	GHS05	Danger	H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
	Skin Sensitisers Category 1	Skin. Sens. 1				
				Warning	H317	May cause an allergic skin reaction

Classification			Labelling					
Hazard-		Abbreviation of classification (without H set)	Pictogram, Signal code*	Signal word	Code* Warning of danger			
Class	Category					Text		
Germ cell mutagenicity	Category 1A	Muta. 1A	GHS08	Danger	H340	May cause genetic defects (3)		
	Category 1B	Muta. 1B			Warning	H341	Suspected of causing genetic defects (3)	
	Category 2	Muta. 2		Danger		H350	May cause cancer (3)	
Carcinogenicity	Category 1A	Care. 1A				H350i	May cause cancer when inhaled	
	Category 1B	Care. 1B					Warning	H351
	Category 2	Care. 2		(3) = State route of exposure if it is conclusively proven that no other routes of exposure cause the hazard.				
Reproductive toxicity	Category 1A	Repr. 1A	GHS08	Danger	H360 (4)	May damage fertility or the unborn child.		
	Category 1B	Repr. 1B			H360F (5)	May damage fertility.		
					H3600 (S)	May damage the unborn child		
					H360FD (5)	May damage fertility. May damage the unborn child.		
					H360Fd (S)	May damage fertility. Suspected of damaging the unborn child.		
Category 2	Repr. 2	H360Df (S)			May damage the unborn child. Suspected of damaging fertility.			
		Warning	H361 (4)	Suspected of damaging fertility or the unborn child.				
			H361f (S)	Suspected of damaging fertility.				
Additional category for effects on or via lactation	Lact.	No Pictogram	No Signal Word	H362	May cause harm to breast-fed children.			
(4) = (state specific effect if known)(state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard) (5) F = Fertility, D = Development (lowercase f, d = suspected effect)								
Specific target organ toxicity (single exposure)	Category 1	STOT SE 1	GHS08	Danger	H370	Causes damage to organs (6)		
	Category 2	STOT SE 2			Warning	H371	May cause damage to organs (6,7)	
	Category 3	STOT SE 3				Warning	H335	May cause respiratory irritation
			H336		May cause drowsiness or dizziness			
Specific target organ toxicity (repeated exposure)	Category 1	STOT RE 1	GHS08	Danger	H372	Causes damage to organs (6) through prolonged or repeated exposure (7)		
	Category 2	STOT RE 2			Warning	H373	May cause damage to organs (6) through prolonged or repeated exposure (7)	
				(6) = (state all organs affected, if known)				
(7) = (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)								



Classification			Labelling			
Hazard-		Abbreviation of classification (without H set)	Pictogram, code*	Signal-word	Code* Warning of danger	
Class	Category					Text
Aspiration Toxicity	Category 1	Asp. Tox. 1	 GHS08	Danger	H304	May be fatal if swallowed and enters airways
Hazardous to the aquatic environment	Acute Category 1	Aquatic Acute 1	 GHS09	Warning	H400	Very toxic to aquatic life
	Chronic Category 1	Aquatic Chronic 1			H410	Very toxic to aquatic life with long lasting effects
	Chronic Category 2	Aquatic Chronic 2			No Signal Word	H411
	Chronic Category 3	Aquatic Chronic 3	No Pictogram	No Signal Word	H412	Harmful to aquatic life with long lasting effects
	Chronic Category 4	Aquatic Chronic 4			H413	May cause long lasting harmful effects to aquatic life
<b>ADDITIONAL EU HAZARD CLASS</b>						
The warning of danger and the signal word included in the section for additional information can be found on the label.						
Hazardous to the ozone layer		Ozone	No Pictogram	Danger	EUH059	Hazardous to the Ozone Layer

\* = The Code for the Pictogram and the H-statement do not need to be included on the label.

**Classification and Labelling** is a set of criteria and rules used to determine if a chemical can cause harm to human health and the environment. It involves the identification and evaluation of the physical properties of a chemical, along with its health and environmental effects and then communicating those hazards via a label.

**The CLP Regulation (EC) No 1272/2008** on classification, labelling and packaging (CLP) of substances and mixtures entered into force on the 20th January 2009 and is direct acting in all European Member States. It has a phased transitional period, firstly for substances and then for mixtures, being the 1st December 2010 and then the 1st June 2015, respectively. These are extended to 1st December 2012 and 1st June 2017 if the substance or mixture is already "on the shelf".

**CLP** introduces the United Nations GHS into Europe and it amends and will eventually replace the existing European Directives 67/548/EEC for substances and Directive

1999/45/EC for preparations. These are transposed in Ireland by Statutory Instruments S.I. No 116 of 2003 (for substances) and S.I. No 62 of 2004 (for preparations), as amended.

**The Competent Authorities** in Ireland for the CLP Regulation are the Health and Safety Authority, for industrial chemicals, and the Pesticides Control Service Division of the Department of Agriculture Fisheries and Food for plant protection products and biocides. There is a CLP Helpdesk established to assist industry to meet their obligation under CLP.


















**Further sources of information**, assistance and guidance can be found at the following:

**HSA website** [www.hsa.ie/clp](http://www.hsa.ie/clp)

**CLP Helpdesk** email [clp@hsa.ie](mailto:clp@hsa.ie) Telephone 1890 289 389

**ECHA website** [http://echa.europa.eu/clp\\_en.asp](http://echa.europa.eu/clp_en.asp)

The content of this poster is subject to change as a result of adaptations to technical progress to the CLP Regulation please check the HSA and ECHA websites for updates. The HSA wish to acknowledge and thank the German Competent Authority, BAUA who provided the information on which this poster is based.

Previous Hazard Labels and Symbols		Current GHS Signal Words and Pictograms		
Indication of Danger & corresponding symbols (CPL) From Directives 67/548 /EEC & 1999/45 EC		Signal words & corresponding pictograms (CLP) From Regulation EC 1272/2008		
Indication of Danger	Symbol	Class/Category	Signal Word	Pictogram
Explosive E		Explosives 1.1-1.3 Explosives 1.4	Danger Warning	
Extremely Flammable F+ Highly Flammable F		Flammable Liquids 1,2 Flammable liquids 3	Danger Warning	
Oxidising O		Oxidising Liquids 1,2 Oxidising Liquids 3	Danger Warning	
No Match	No Match	(NEW) Gases under pressure, compressed gases	Warning	
Corrosive C		Skin Corrosion 1A,1B,1C Corrosive to metals 1	Danger Warning	
Very Toxic T+ Toxic T		Acute Toxicity 1,2,3	Danger	
Harmful Xn Irritant Xi		Acute Toxicity 4 Skin Irritation 2	Warning Warning	
Harmful Xn Toxic T	 or 	Aspiration hazard Respiratory sensitization, Germ cell mutagenicity, Carcinogenicity, Reproductive toxicity, Specific target organ toxicity	Warning or Danger	
Dangerous to the environment N		Hazardous to the aquatic environment 1	Warning	