Department of Materials Safety Induction for Part II Students

Ian Bishop

September 2022

OxfordMaterials

UNIVERSITY OF OXFORD

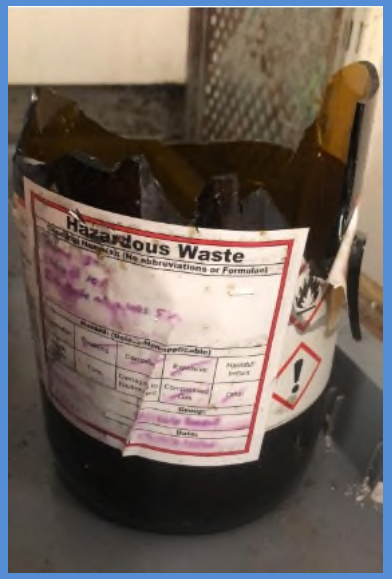
The Fundamentals of Health & Safety (H&S) Management

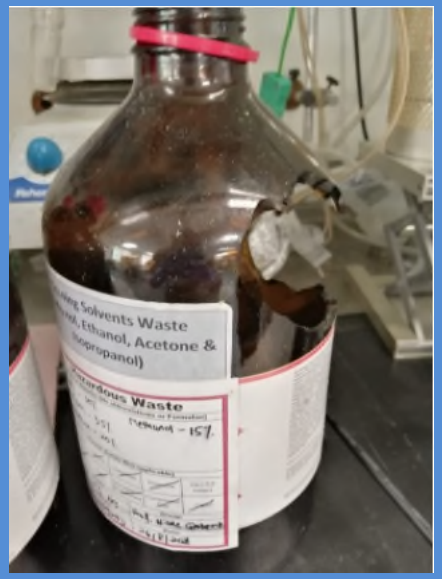
- Health and Safety at Work etc. Act 1974
- Regulatory Reform (Fire Safety) Order 2005
- Environmental Protection Act 1990 (hazardous waste and genetic modification)
- Construction (Design and Management) Regulations 2015
- Control of Asbestos Regulations 2012
- Radiation (Emergency Preparedness and Public Information) Regulations 2001
- Food Safety Act 1990

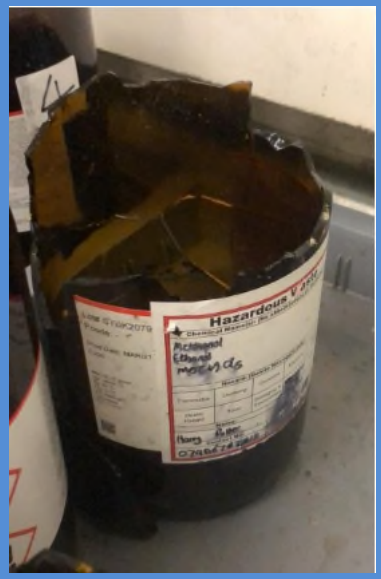
OxfordMaterials

UNIVERSITY OF OXFORD

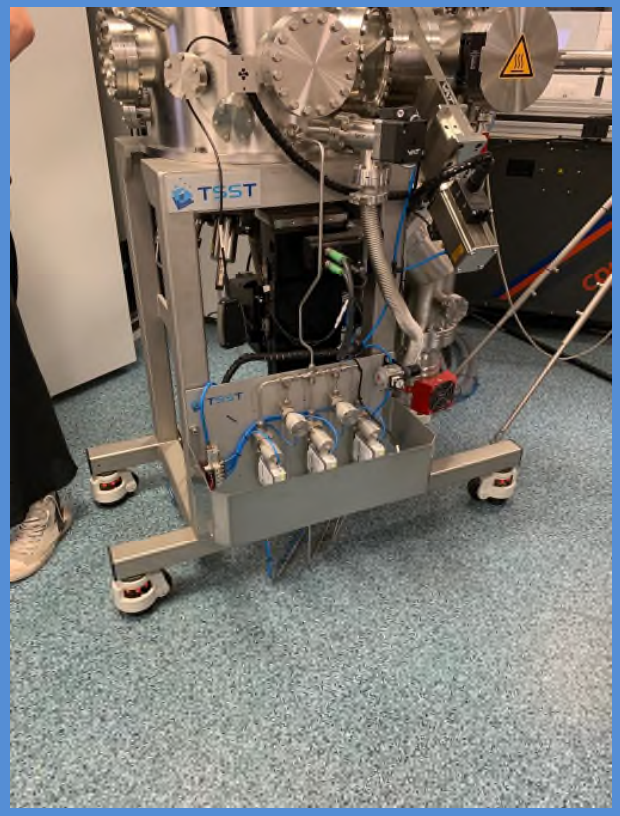
Accidents and Incidents: Chemical waste management







Accidents and Incidents: Personal Injury



OxfordMaterials

UNIVERSITY OF OXFORD

Accidents and Incidents: Fire Safety

Accidents and Incidents: Disposal of Sharps

Accidents and Incidents: Trip Hazard

OxfordMaterials

UNIVERSITY OF OXFORD

The University and H&S Policy

University Statement of H&S Policy

- Outlines the health & safety intent and objectives of the University
- Describes the managerial structure by which they are implemented.

Departmental Statements of Safety Organisation

- Describes detailed local safety arrangements in departments

Topic Specific Policy Statements

- The University's detailed safety arrangements on specific topics
- Drafted by the Safety Office
- Issued by the Health and Safety Management Subcommittee on behalf of Council

The University and H&S Policy

Departmental Statement of Safety Organisation

University H&S Policy Statements

Note that University Policy Statements are available on the web at https://www.materials.ox.ac.uk/local/safety/safety-policies.

Departmental Local Rules e.g.

- Welfare Arrangements
- Emergency Response
- Incident Reporting
- DSE Assessment & Eyesight Testing Arrangements
- Out of Hours Arrangements
- Access / Security Matters
- Specific Risks / Controls, including Hazardous Waste

The University and H&S Policy

Managers/Supervisors must provide information about:

- Risk Assessments (RAs), specific protocols, Standard Operating Procedures (SoPs) etc
- Provide or enable instruction and training (and maintain records)
- Provide PPE and advise how to clean, maintain and store PPE
- Specific emergency procedures

Department Safety Advisory Committee:

Forum for discussing health and safety issues

Wide representation from all areas, including:

- All staff groups
- Trade Unions reps
- Postgraduate students
- Undergraduate students

Meets termly

The Employee (i.e. you!) and H&S Policy

All Departmental employees, all students and all other persons entering onto the Department's premises or who are involved in Departmental activities have a duty to exercise care in relation to themselves and others who may be affected by their actions.

OxfordMaterials

UNIVERSITY OF OXFORD

The Employee (i.e. you!) and H&S Policy

- To carry out all work in accordance with instructions, advice, policies and procedures.
- To protect yourself and others by properly using any safety equipment or devices (e.g. machinery guards) provided.
- To protect yourself by properly wearing any personal protective equipment that is required as defined in local rules.
- To attend training where managers identify it as necessary for health and safety.
- To report all fires, incidents, and accidents immediately.
- To familiarise yourself with the location of firefighting equipment, alarm points and escape routes, and with the associated fire alarm and evacuation procedures.

Risk Assessments

Risk Assessments

- Personal risk assessment - obligatory for everyone
- Area risk assessment - for the lab/workplace in which you work
- Task specific risk assessment for hazardous procedures

Personal Risk Assessment

All individuals must complete a PERSONAL RISK ASSESSMENT

- Discussion with your supervisor about any risks involving your work, and how best to minimize these – it may be necessary to arrange training
- Confirmation that you have read and understand the Department Safety Policy
- Confirmation that you have read and understand the Laboratory Safety Manual
- Understand and will comply with the Safety Code of Conduct
- Signed by yourself, your Supervisor and the Department Safety Officer
- **Completed before you commence work**

YOUR SIGNATURE ON THE FORM IMPLIES THAT YOU HAVE DISCUSSED AND UNDERSTOOD THE SAFETY ASPECTS OF YOUR WORK

Personal Risk Assessment

NAME: ..... **DATE:** .....

Please return form by email to: ian.bishop@materials.ox.ac.uk

- This form must be completed by **all** new arrivals (employees, visitors, students etc.) in consultation with their supervisor before starting work, and returned within two weeks.
- **We aim to process forms within 2 weeks. Allow for this in any work schedule.**
- See separate guidance notes document on department website for assistance.
- A new form may be submitted at any time to reflect changes in work type/risk category.
- If answering 'Y' to any risk, fill out all subsequent columns with details requested.
- Please read the footnotes[1] for risk categories involved.
- **If you need further risk assessments/training you MUST ensure these are completed BEFORE commencing work.**

Will your work involve:	Y/N	If "Yes", give brief description (e.g. 'fully enclosed laser system', 'HF')	Is work covered by existing or forthcoming risk assessment? Y/N	Risk category	Training required Y/N
Radioactive isotopes					
X-ray machines					
Lasers					
Biological hazards Hazardous gas, chemicals or dust Workshop machinery Display screen equipment (more than 1hr/day)					
Manual handling / lifting heavy loads					
Electrical Work					
Cryogenic liquids					
Gas cylinders Work out of the Department Other significant risk (specify)		If yes, you **MUST** contact DSO for advice.			

Declaration of Worker: Where **NO** has been given as an answer in the personal risk assessment, it is in the belief that the work I shall be doing will expose me to no significant hazard.

[1] **Risk Categories**

A. Where work may not be undertaken without senior supervision;
B. Where work may not be started without advice from the Academic Supervisor. Advice should include the method of work and the safeguards to be used;
C. Where the risks are such that extra care must be observed, but where it is considered that the worker is adequately trained and competent in the procedures.

I make this declaration, having read the Departmental Safety Policy, and I recognise that, in the case of uncertainty, my supervisor or the Departmental Safety Officer is available to offer advice. If **YES** has been given as an answer, I recognise that is my responsibility to organise the required risk assessments and training through my supervisor/line manager. This must be done **within two weeks of completing the form**.

I have:

- Read and understood the Departmental Safety Policy, and Laboratory Safety Manual;
- Completed and understood the Personal Risk Assessment and Safety Induction form;
- Understand and will comply with the Safety Code of Conduct (as detailed in the LSM)

Name ..... **Building/Room**.....

Status:

☐ Member of Staff ☐ Visiting academic/researcher
☐ Postgraduate researcher ☐ Departmental visiting student
☐ Other (please specify): .....

(Digital) signature ..... **Date** .....

Declaration of Supervisor: Having specialist knowledge in the field of work to be carried out by the applicant, I believe that he/she has properly declared the circumstances under which his/her work will be undertaken. I furthermore have indicated the category of risk involved, and have named the person(s) who will immediately supervise work of Risk Category A. I will ensure the worker completes all further risk assessments and/or training before the work commences.

I have also discussed procedures for the following in accordance with the Department's Safety Policy and Laboratory Safety Manual:

1 - ☐Sources of Safety Information
2 - ☐Risk Assessment
3 - ☐Rules
4 - ☐Training
5 - ☐Waste disposal
6 - ☐Manual Handling
7 - ☐Use of private electrical equipment
8 - ☐Lone working
9 - ☐Fire
10 - ☐First aid
11 - ☐Accident reporting
12 - ☐Reporting faults & others

(fill check-boxes to indicate discussion has taken place)

Name ..... **Date** .....

(Digital) signature .....

Departmental Administrative record

DSO Approval: Signed ..... Date .....

OxfordMaterials

UNIVERSITY OF OXFORD

Area specific risk assessments: Laboratory Safety Manual

- Departmental Information (key contacts)
- Introduction
- Laboratory Standards
- General Laboratory Safety
- Laboratory Management Guidelines
- Hazardous Substances Standards
- Completing COSHH
- Hazardous Waste Disposal
- Fume Cupboard Use
- Spill Response
- Safety Code of Conduct
- Communications

Task specific risk assessments

- Detailed operating procedures and safety protocols have been written for some particularly hazardous equipment (processing equipment in High Bay at Begbroke)
- Other specific rules for using Hydrofluoric Acid (HF), lasers, radiation
  - If you use any of these you must become familiar with the safety protocols. Generally formal training will be required
  - These may require more detailed assessments than filling out a standard risk assessment or COSHH form

Training: Termly Safety Office led

- Introduction to Biological Safety & Genetic Modification
- Chemical Safety & COSHH
- Compressed Gas Safety
- Laser Safety for Research Supervisors
- Introduction to Laser Safety
- Introduction to Manual Handling
- Radiation Safety for Laboratory Workers
- Risk Assessment
- Supervisors' Responsibilities
- Working at Height

http://www.admin.ox.ac.uk/safety/safetytraining/

OxfordMaterials

UNIVERSITY OF OXFORD

Induction Training

- Accident, Incident and Near Miss Reporting (IRIS)
- Fire Precautions and Procedures
- Out of Hours Working
- COSHH
- Electrical Safety
- First Aid

Accident, Incident and Near Miss Reporting

Anything from small injuries i.e. small cuts, or such as near misses, floods, to equipment unintentionally malfunctioning and potentially causing harm should be reported.

To report an accident or incident, go to
https://safety.admin.ox.ac.uk/report-an-incident

All accidents & incidents are followed up by the Departmental Safety Officer. For more serious incidents, the University Safety Office may investigate and will investigate those where the HSE investigates.

OxfordMaterials

UNIVERSITY OF OXFORD

Fire Precautions and Procedures

If a fire breaks out:

- Raise the alarm and follow the evacuation procedure
- If there is time, close windows and doors and switch off electrical appliances
- Go to the assembly point

THE MAIN CONSIDERATION IS TO GET EVERYONE OUT SAFELY

Raising the alarm:

- Break the glass of a fire alarm call point – they are found at all exits
- Dial 999

Means of Escape:

- Familiarise yourself with the local escape routes
- Do not wedge open or obstruct fire doors
- Do not use the lift

OxfordMaterials

UNIVERSITY OF OXFORD

Preventing fire

- Good housekeeping
- Minimum quantities of flammable liquids, stored appropriately
- Avoid overloading electrical wiring
- Keep equipment clean, maintained and well-ventilated
- Food preparation!!!!

Out of Hours Working (before 8.00am and after 5.00pm)

The basic rules for the conduct of work outside normal working hours are as follows:

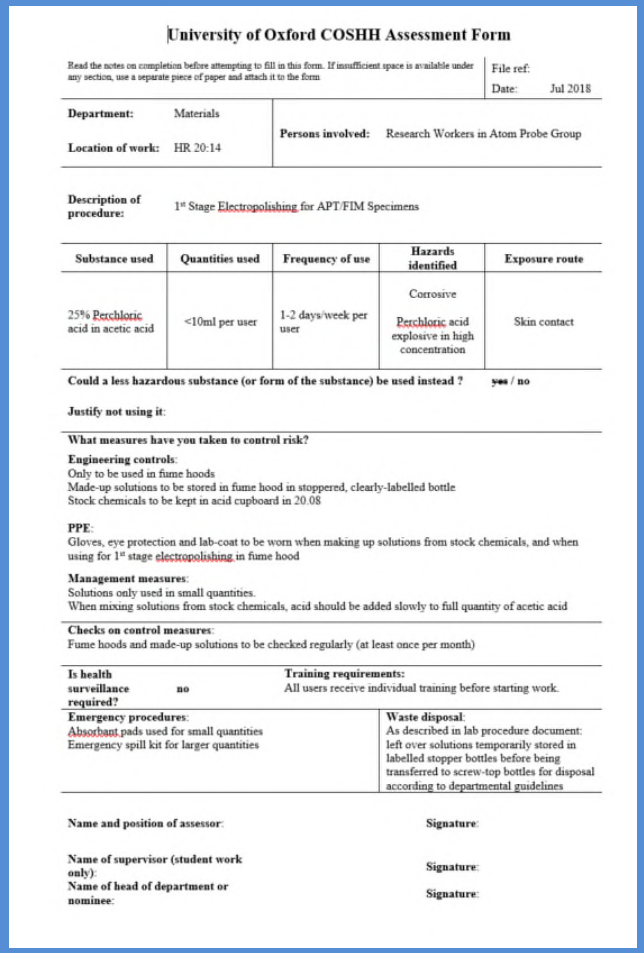
- Work in offices, libraries and computing areas may be carried out by people on their own, if required.
- Work in laboratories (other than the simple use of computers) may be undertaken only if:
  - authorised by the Laboratory Supervisor; and
  - undertaken with at least two persons present or at least a second person able to be contacted (within earshot)
- In most cases, authorisation will not be required for each occasion such work is carried out, but a separate authorisation will be required for each task undertaken.
- All hazardous work to be undertaken working alone or out of hours, must be covered by a written risk assessment.
- Requires specific arrangements for summoning assistance out of hours.

COSHH assessment

ALL HAZARDOUS MATERIALS REQUIRE COSHH ASSESSMENT:

1. Assess the Risk
2. Substitute a less Hazardous Substance if possible
3. Define the Control Measures:
   - Consider forms of control other than personal protective equipment. If PPE is used, it must be of the right specification.
   - Minimise quantities, define storage and disposal arrangements.
   - Consider accident conditions, such as spills.
4. Labelling
   - All chemicals should be clearly labelled
   - Use good quality labels - standard labels available from Stores
   - Write your name and the date on the label
5. Storage
   - Do not mix acid and alkaline solvents in the same cupboard
   - Use special chemical cupboards where possible

COSHH assessment form



University of Oxford COSHH Assessment Form

Read the notes on completion before attempting to fill in this form. If insufficient space is available under any section, use a separate piece of paper and attach it to the form

File ref:
Date: Jul 2018

Department: Materials
Location of work: HR 20:14
Persons involved: Research Workers in Atom Probe Group

Description of procedure: 1st Stage Electropolishing for APT/FIM Specimens

Substance used	Quantities used	Frequency of use	Hazards identified	Exposure route
25% Perchloric acid in acetic acid	<10ml per user	1-2 days/week per user	Corrosive Perchloric acid explosive in high concentration	Skin contact

Could a less hazardous substance (or form of the substance) be used instead ? ~~yes~~ / no

Justify not using it:

What measures have you taken to control risk?

Engineering controls:
Only to be used in fume hoods
Made-up solutions to be stored in fume hood in stoppered, clearly-labelled bottle
Stock chemicals to be kept in acid cupboard in 20.08

PPE:
Gloves, eye protection and lab-coat to be worn when making up solutions from stock chemicals, and when using for 1st stage electropolishing in fume hood

Management measures:
Solutions only used in small quantities.
When mixing solutions from stock chemicals, acid should be added slowly to full quantity of acetic acid

Checks on control measures:
Fume hoods and made-up solutions to be checked regularly (at least once per month)

Is health surveillance required? no

Training requirements:
All users receive individual training before starting work.

Emergency procedures:
Absorbant pads used for small quantities
Emergency spill kit for larger quantities

Waste disposal:
As described in lab procedure document: left over solutions temporarily stored in labelled stopper bottles before being transferred to screw-top bottles for disposal according to departmental guidelines

Name and position of assessor: **Signature:**

Name of supervisor (student work only): **Signature:**

Name of head of department or nominee: **Signature:**

Disposal of waste, excess and unwanted chemicals

The current regulations do not permit the disposal of any chemicals via sinks (at the Parks Rd site – disposal of some soluble chemicals via sinks is possible at Begbroke)

ALL chemicals have to be disposed of through the University Safety Office and its licensed Contractor
For details: see Department's website

Further information on waste disposal: Christina Foldbjerg Holdway

OxfordMaterials

UNIVERSITY OF OXFORD

Electrical safety

- All portable electronic equipment must have a CURRENT TEST CERTIFICATE. This is carried out every twelve months – arrange via Ashley Brown
- Non-standard new equipment must be tested by the electrical safety-testing technician (Ashley Brown) BEFORE BEING PUT INTO USE
- Arrange for equipment to be tested as soon as possible after purchase.
- Report faults to Ashley Brown. DO NOT ATTEMPT TO MAKE REPAIRS YOURSELF
- ALL in-house built equipment must conform to current safety standards. You must consult Les or Ashley at the design stage and the equipment must be tested before being put into use. Prototype equipment MUST be safe at ALL stages under ALL conditions

First Aid

First aid boxes are to be found in all corridors and numerous other locations within the Department.

If you use anything from the first aid boxes, let the first aid coordinator know and it will be replaced.

Notices in all buildings indicate who the first aiders are in that location.

Out of hours, help should be sought from University Security Services

OxfordMaterials

UNIVERSITY OF OXFORD

The Department Safety Team

Head of Department: Hazel Assender

Department Safety Officer: Ian Bishop/Charlotte Sweeney

Area Safety Officer: Philip Paling

Laser, Chemical and Biological Safety Officer: Christina Foldbjerg Holdway

Fire Officer and Electrical Safety Supervisor: Les Chorley

Senior Radiation Protection Supervisor: Paul Bagot

OxfordMaterials

UNIVERSITY OF OXFORD

Any Questions?