

# **GENERAL LABORATORY SAFETY GUIDELINES**

# Index

## Laboratory Procedures and Practices

- Laboratory Rules
- After Hours Procedure
- Autoclaves
- Biological Hazards
- Electrical Work
- Fire Equipment
- First Aid
- Gas Cylinders
- General Facilities / Layout
- Manual Handling
- Microwave Ovens
- Radiation
- Running Unattended Equipment
- Sharps / Broken Glass
- Tetanus
- Word processing

## Chemicals

- Chemical Laboratory Waste

## Complying with Regulations in Providing Labels and MSDS

- Labels
- Material Safety Data Sheets (MSDS)
- Hazardous Substance Risk Assessment

## Appendix

- Unattended Reaction Form
- Risk Assessment –Experiment/Task/Process
- Chemical Hazard Risk Assessment Form
- Safe Use of Microwave Oven
- Safe Work Procedure (for Microwave oven)

# Laboratory Procedures and Practices

Laboratory safety begins with a safe attitude. The guidelines set out below provide a starting point for planning and maintaining safety in the laboratory.

## Laboratory Rules

- No smoking, eating or drinking in the laboratory.
- No mouth pipetting of any substance.
- Safety glasses should be worn when doing laboratory work, which may involve the risk of eye injury. Glasses should also be worn in areas designated mandatory eyeglass areas.
- It is recommended that laboratory coats be worn when working in a laboratory.
- Everyone shall wear appropriate closed in footwear when in laboratories.
- Laboratory test procedure is to include information on chemicals, which may be hazardous and highlight any special precautions necessary.
- Unwanted chemicals are to be disposed of according to established laboratory practice. If uncertain of appropriate disposal method consult.
- Do not use Mercury thermometers except for specialist reasons. If you find one please hand it in for disposal.
- Dry ice, cryogenics, solvents or flammables are not to be taken into or used in controlled temperature rooms.
- Nothing but solid laboratory apparatus may be stored under fume cupboards.
- Anyone working "out of hours" should notify Security (7112) of his or her whereabouts. Everyone, other than staff, needs to have a "blue card" for permission to be in the building out of hours. These are available from the Head of School through your supervisor.
- Children should not be taken into laboratories.
- No flammables should be stored in refrigerators.(unless refrigerators are flameproof)
- Keep workbenches uncluttered and clean - return all unwanted materials to storage.
- Do not obstruct walkways, fire escapes, fire extinguishers or safety showers.
- Keep fire and smoke doors closed at all times
- Clean up spills immediately. If hazardous, evacuate the area and notify your supervisor.
- Ensure all electrical apparatus is switched off at the plug if not needed.
- Ensure all gas burners are turned off when not needed.
- Conduct a regular maintenance program of equipment used.
- Make sure you use correct techniques when lifting or moving equipment or heavy loads i.e. Keep your back straight and lift using your legs. If in doubt seek assistance.

## **AFTER HOURS PROCEEDURES**

All persons entering or remaining in the building during the hours 10.30pm to 6.30am Monday to Friday or at any time on Saturday, Sunday or Public Holidays should contact security on Ext 7112.

Experimental work which may involve significant risk should not be performed during after hour's period unless;

- The Head of Department has been informed
- University Security have been informed (ext 7112) with details date, time, location of work to be done and contact name and phone numbers

**PERSONAL SECURITY.** If you are concerned about your security or any other issues ring ext. 7112 (they offer an escort to your car service.)

## **AUTOCLAVES**

For information on the correct use of these pieces of equipment see a trained laboratory manager, not just anyone who happens to be around!!

Some guidelines:

- Ensure the boiler temperature and pressures are correct before attempting to start the autoclave's cycle.
- Ensure the door is shut firmly but not tight enough to squash the gasket out of shape.
- Ensure that the load is not too large and that steam has free access to all parts of the load. If steam cannot penetrate the load then it will not be sterilised.
- At the end of the cycle ensure that the chamber pressure is zero before opening the door. If there is still some pressure there is a danger of being burnt by the released steam.
- Use gloves that are both waterproof and heatproof to handle the load after the cycle to prevent burns from the hot load. These are provided in the autoclave rooms.

## **BIOLOGICAL HAZARDS**

All work with biological hazards, potential pathogens, human tissues/blood or recombinant DNA, is to be approved by the Biosafety Committee prior to work commencing. See Elsa Mardones ph 9850 8233 for information.

## **ELECTRICAL WORK**

No electrical work is to be carried out by staff or students. All electrical wiring is to be done by a licensed trade person.

Commercially available extension cords and power blocks may be used but the use of piggyback plugs and double adaptors is prohibited.

Any frayed cord is to be repaired by an electrician or replaced. If any electrical apparatus is being used with frayed wiring it will be removed for repairs immediately, even if the work has to stop!!

## **FIRE EQUIPMENT**

Ensure you know where the fire extinguishers, hoses and fire blankets are in your area and keep them clear of obstructions.

Report any used extinguisher to Ron Claassens 9850 8417 ( Lab Manager) so a replacement can be arranged.

Water hoses are for use by people skilled in their use i.e. Fire Department. Do not attempt to use them in case of fire.

If you have not been trained in the use of fire extinguishers do not attempt to put a fire out. Instead raise the alarm promptly.

## **FIRST AID**

First Aid Procedures. If a person is injured: Do not move the person unless there is a danger to life. Switch off any electricity or mechanical equipment (if it is safe to do so). Call for a First Aid Officer. If a First Aid Officer is not available and the injury appears serious DIAL 9999 and be prepared to state your name, the problem and the location of the emergency. The attendant will call an ambulance and attempt to locate the Occupational First Aid Officer or a Medical Practitioner. A Medical Practitioner will respond to; an unconscious patient, profuse bleeding, suspected head or spinal injuries, immobilization after a fall or major burns

First Aid kits are located around the buildings

Some brief notes are included here in case of emergency. These notes are not intended to replace the need for a qualified First Aid Officer but are pointers to the initial treatment of the injuries. Ensure you know the whereabouts of the safety showers in your area.

- **CHEMICAL SPLASHED IN EYE**

Irrigate the eyes with copious quantities of clean tap water for at least 10 minutes.

Ensure that the casualty sees a Doctor.

- **BURNS**

Acid/alkali burns - wash affected part thoroughly in running tap water or under safety shower.

Heat burns - wash under cool tap water for at least 10-20 minutes.

Phenol burns –For burns larger than 3 or 4 cm in diameter, Flood the affected area immediately with a 50% solution of Polyethylene Glycol and leave for a few minutes. Rinse with cold tap water. If pain persists repeat procedure.

**In all cases seek medical attention.**

**NOTE: IT IS UNIVERSITY POLICY TO REPORT ALL INJURIES AND HAZARDOUS INCIDENTS. A WRITTEN REPORT MUST BE SUBMITTED TO THE DEPARTMENT SAFETY OFFICER WITHIN 24 HOURS. <http://www.ohs.mq.edu.au/form5a.php>**

## **GAS CYLINDERS**

Gas cylinders require special treatment not only for the hazards posed by their chemical contents, but also the contents are under high pressure and are thus dangerous if handled incorrectly.

Points to be observed with gas cylinders:

- Ensure the cylinder is securely fastened in an upright position. The straps used should be strong enough to hold the cylinder and positioned high enough to provide stability.
- Ensure the correct type of regulator is used for the gas in the cylinder and the regulator is regularly serviced.
- Ensure all plumbing is adequate to withstand the intended pressures. This includes clamping all joints and testing joints with water for leaks. If the setup is to be permanent it is preferred the plumbing be constructed from a suitable metal.
- Store all cylinders not actually in use in the correct compressed gas store located outside the building.
- Return empty or redundant cylinders promptly, as a charge is made on the cylinder for the time rented.

## **MANUAL HANDLING**

The definition of manual handling means “Any activity requiring the use of force exerted by a person to lift, lower, push, pull, carry or otherwise move, hold or restrain any animate or inanimate object” (National code of Practice manual Handling 1990)

This definition could apply to just about all of the daily tasks that you perform in both the workplace or at home.

Back injuries are the most common manual handling injury in the workplace in Australia.

Those people affected, experience pain and lifestyle restrictions from injuries that may have been prevented. Manual handling injuries can occur suddenly or gradually over time.

A training module in manual handling can be found at <http://www.pers.mq.edu.au/safetycare/training.html>

## **MICROWAVE OVENS**

Microwave ovens can explode if not used properly

Before using a microwave oven you must:

1. Receive instruction in the safe use of the microwave oven from your supervisor.
2. Read, understand and follow the appropriate Safe Work Procedure.
3. Sign and date Safe Use of Microwave Oven form.



REMOVE LIDS FROM ALL CONTAINERS. NEVER heat objects that are sealed as they may explode, damaging the oven and blowing off the door.

Ovens used for laboratory applications cannot be used for food preparation.

Do not operate the oven if it is damaged or does not operate properly. It is imperative that the oven door seals properly and that there is no damage to the door seal, hinges, latches, or oven surfaces

## **RADIATION**

No radiation work is to be done by anyone without the express approval of Radiation Safety Officer. He will give guidance in correct and safe procedures and provide a radiation badge for use, where necessary.

Use of radioactive material must be done in laboratories designated as radioactive laboratories. Staff with requirements using isotopes outside of these areas must consult with Radiation Safety Officer before proceeding.

A detailed radiation safety procedure manual "Safety Procedures for Users of Radioactive Materials" is available from Radiation Safety Officer.

Staff or students must not proceed with experiments using radioisotopes until they have received appropriate safety instruction from Radiation Safety Officer.

## **RUNNING UNATTENDED EQUIPMENT**

Where it is necessary to run apparatus after hours, the potential hazards should be recognised and monitored. The apparatus may comprise such equipment which may present substantial likelihood of electrical, fire, chemical, flood, explosion or other similar hazards. See *appendix Unattended [Reaction Form](#)*

## **SHARPS / BROKEN GLASS**

There are 2 classes of `Sharps`:

- non-contaminated broken glass
- All other `Sharps`, such as hypodermic needles, razor blades etc.

Broken glass should be collected in broken glass bins available from Keith Maxwell (special cardboard boxes.) When these are full the lid is sealed shut and the whole box is taken to the big skip which is now located in the back of E5A building (on your way to the bus stops on Macquarie drive)

The cleaners are not responsible for emptying these containers. **Do not place broken glass in the normal bins!!**

All other `SHARPS` are considered contaminated and must be placed in the hard, yellow `SHARPS` containers located in all laboratories. These are available from the E8A Store. Contaminated sharps include hypodermic needles, syringes, needles, razor blades, scalpels etc. When full the container is disposed of by sealing in a yellow contaminated waste bag, available from the Store, and then placed in the contaminated waste bin. Do not dismantle syringes or recap needles before disposal, it is unsafe!! Simply place them in the Sharps container intact. It is your responsibility to take care of the disposal of all sharps, which your work generates.

## **TETANUS**

All laboratories and associated facilities are regarded as high-risk areas for tetanus. It is recommended that everyone protect themselves against the possibility of becoming infected. Injections of tetanus toxoid vaccine are available from the Student Health Service free of charge on production of your Medicare card.

## **WORD PROCESSING**

People using computer terminals should observe the appropriate guidelines to prevent repetitive strain injury, back problems and eyestrain. Briefly these guidelines include:

- Use an adjustable swivel chair with a lumbar support, adjusted so the feet can be set comfortably on the floor with the upper leg almost level.
- Set both the screen slightly below eye level and the keyboard slightly below elbow level.
- Operators are to take a 10 minute break every hour and are to do some other activity in that 10 minutes to relieve cramped muscles from sustained postures.
- Learn to touch type as this reduces the strain on eyes and neck.
- Do not type for more than a total of 4 hours in one day. Where low-key strokes are involved, the suggested maximum may be extended to 5 hours a day.

See training for Office Safety and Office Ergonomics at <http://www.pers.mq.edu.au/safetycare/training.html>

# CHEMICALS

All chemicals pose a risk of some degree. Ensure you are familiar with possible hazards of chemicals in use by consulting the Material Safety Data Sheet (MSDS) or asking your supervisor.

A chemical can be classified as a hazardous Substance and/or a dangerous good. Not all hazardous substances are also classified as dangerous goods and so the container will not necessarily have a dangerous goods label. This is because the dangerous goods “diamond” indicates an immediate hazard and not a long term health risk. Hazardous substances are chemicals harmful to health. (such as causing cancer) Dangerous goods have an immediate physical risk (such as fire or explosion.), or an immediate health risk (such as rapid poisoning)

Some hazards posed by chemicals include:

- Incompatible storage. Ensure only chemicals of the same hazard group are stored together. (Incompatible chemicals of the same class are to be kept apart)
- Skin absorption. To ensure no contact between the skin and chemicals use gloves. If contact occurs wash immediately with copious quantities of water.
- Respiration. Many chemicals are quite volatile and give off hazardous vapours. If this is the case use these chemicals in fume cupboards to prevent inhaling these vapours.
- Ingestion. Treat all chemicals as potentially poisonous. Do not eat, drink or mouth pipette in the laboratory. To prevent accidental ingestion of chemicals always remove lab coats and wash hands before going for a meal break. Gloves should not be worn outside the laboratory.

Laboratories should have written procedures for chemical handling, storage, spillage and disposal available. All staff and students using chemicals should be trained in procedures for chemical handling. Current chemical MSDS should be made available in each of the laboratories. Spill kits are to be made available and regularly maintained in each of the laboratories. Chemicals should be correctly labelled with correct information and hazard diamonds. Risk assessments are carried out for all processes using hazardous substances. Safety eyewear must be worn in designated areas. This means that it is mandatory for all persons in designated areas to wear eye protection at all times. Care should be taken when handling and transporting hazardous chemicals. Some guidelines are included to increase safety when transporting these chemicals:

- For containers of 2 litres or more use a carry basket.
- If transporting between buildings or labs use a trolley with safety rail.
- As soon as possible decant the chemical into a smaller container to reduce the volume handled and then return the large container to the bulk store promptly.

## WHAT TO DO WITH YOUR LABORATORY WASTE.

There are 2 types of waste;

### 1. **Biological waste**

- Tissue culture

Place in double lined autoclave bags (plain autoclave bags available from E8A Store). Autoclave and then when cool take to disposal skips located near E5A. A map describing this location can be found in the autoclave room E8C 204. See Elsa Mardones for instructions on using autoclaves. This waste should not be contaminated with chemicals.

- Blood waste (PC2)

Place in double lined biohazard autoclave bags. (These are the clear bags with the yellow diamond shape). Seal bags securely. Take to the bin in the shed near E8A (under the carport)

- Sharps containers

Place yellow sharps containers in autoclave bag, seal securely. Take to the bin in the shed near E8A (under the carport)

## 2. Chemical waste

### **Do NOT dispose of chemicals into drains**

Incompatible chemicals should not be stored together. (Do not mix Class if possible)  
Liquid waste **MUST** be in sealed plastic bottles (Not glass or tin) and correctly labelled  
(Plastic bottles are available from E8A store)

All Contaminated paper/gloves/tips should be collected in **DOUBLE** lined plastic bags and labelled correctly. (including acrylamide, ethidium bromide, phenol etc)

Chemical waste generated in the laboratory should be taken to the waste area in F7A (near the bulk liquid nitrogen facility). The key for the gate is located in the wooden key box outside the E8A Store.

Waste must be left;

**LABELLED** correctly

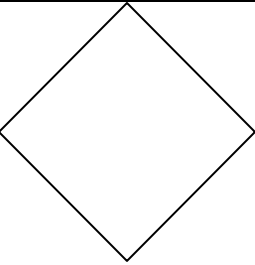
EPA (Environmental Protection Authority) regulations on the removal of waste require an inventory of all goods being disposed.

**LEFT IN THE APPROPRIATE AREA** depending on the Class of the waste [i.e. Class 6(toxic) and Class 8 (Corrosive) should be located in the far left hand bay, and Class 3 (flammable) in the right hand bay.]

Left in a **TIDY** manner

Fill in the **WASTE INVENTORY SHEETS** located behind the door. Please PRINT all the details so that it can be retyped into a chemical waste inventory. **IT IS IMPORTANT FOR EPA REGULATIONS, TO FILL IN THE DETAILS OF YOUR CHEMICAL WASTE ON THE SHEETS LOCATED BEHIND THE DOOR OF THE F7A WASTE AREA.**

e.g. of information required for waste label.

<b>CHEMICAL NAME</b>		
UN No.		
DATE		
USER		
Risk Phrases	Safety Phrases	

## **COMPLYING with REGULATIONS in PROVIDING LABELS and MSDS**

The Occupational Health and Safety Regulation 2001 (OHS Regulation) specifies legal obligations for the manufacture and use of Hazardous Substances.

### **LABELS**

Laboratory workers must ensure that containers of Hazardous Substances remain appropriately labelled and that any hazardous substances used are appropriately labelled. If a Hazardous substance is put into another container (decanted), the container **MUST** be labelled with product name and basic health and safety information from the supplier's label. A container must remain labelled until the substance is used up and the container cleaned. It may not be possible to put all information onto a label for a small container. The code of practice contains recommendations for label inclusions for containers of various sizes

For **Labels 500ml or more** the following information should be included on them:

- Signal Words, Dangerous goods class and Subsidiary risk labels.
- Identification Information Product Name
- Chemical name
- UN number.
- Ingredients and formulation details (where appropriate).
- Directions for use (where appropriate)
- Risk phrases
- Safety phrases
- First aid procedures.
- Emergency procedures
- Details of manufacturer or importer
- Expiry date.
- Reference to the MSDS

**Labels less than 500ml** will have the following information on them:

- Signal Words, Dangerous goods class and Subsidiary risk labels.
- Identification Information
- Product Name
- Chemical name
- Risk phrases
- Safety phrases
- First aid procedures
- Details of manufacturer or importer
- Reference to the MSDS

When a hazardous substance is decanted into equipment such as test tubes or columns, then the label may be attached to the supporting apparatus (eg. A test tube rack)

## **MATERIAL SAFETY DATA SHEETS (MSDS)**

### **What Are M.S.D.S.'s?**

MSDS are prepared by the manufacturer or importer of a product as a detailed information source and as a usage guide to accompany their products.

The MSDS should include information on

- Trade name of the product
- Ingredients of the chemical
- How it may be a danger to health or safety
- First aid instructions

- Safety precautions when using the product
- Safe handling and storage advice.

MSDS need to be regularly updated. The issue date should be less than 5 years old. They need to be complete (no pages missing), with hard copies of MSDS for each hazardous chemical used in the laboratory and should be kept in a place accessible to everyone. Everyone using hazardous chemicals needs to be trained in being familiar with MSDS and safe use of chemicals.

MSDS are used to

- Identify how the product is hazardous or dangerous
- Assist in carrying out risk assessments
- Find out how to use a product safely
- Decide if any improvements are needed to plant or procedures
- Check if emergency equipment and procedures are adequate
- Provide assistance to a medical practitioner if a worker needs medical attention as a result of workplace exposure

In case of accidents or emergencies a MSDS should be checked **BEFORE** commencing cleaning up

Material Safety Data Sheets are located in laboratories in your area. If a specific MSDS is not available then use the internet or contact the Supplier of the chemical to locate them.

## **HAZARDOUS SUBSTANCE RISK ASSESSMENT**

**To comply with the regulations a Hazardous Substance Risk Assessment needs to be completed for each use of a hazardous chemical.**

NOSCH provides a list of Designated hazardous Substances, it is by no means meant to be the final list but simply a place to start and will definitely need expanding. Almost all chemicals that are toxic, flammable, corrosive or oxidising will eventually need assessing.

<http://www.ascc.gov.au/ascc/HealthSafety/HazardousSubstances/>

**JUST BECAUSE A CHEMICAL DOES NOT APPEAR ON THIS LIST DOES NOT MEAN IT IS NON-HAZARDOUS, AN ASSESSMENT HAS TO BE MADE!!**

To this end a form has been prepared to assist in the preparation of a report with simple yes/no answers where possible. To fill it in you may download the form and print it from your word processor, or obtain one from Jenny Minard. To complete the form you will need a copy of the MSDS.

When your part of the form is completed it is passed onto the Chemical Safety Officer (Jenny Minard) for completion. See [Risk Assessment- Experiment/Task/Process](#) form and [Chemical Hazard Risk Assessment](#) form

### Risk Assessment Classification

These classifications are based on the information collected about the substance and the way in which it is used.

If a highly poisonous substance is kept in a sealed bottle in a locked up cabinet its classification would be very low but if it were used in the open daily it would be very high. This example is used to demonstrate the importance of running a risk assessment, as the results may be unexpected.

Determining the level of risk a chemical poses is made using the Risk Assessment form and MSDS. There are 4 levels of risk.

Risk Level

1. Risks are not significant and are not likely to increase
2. Risks are significant but are effectively controlled

3. Risks are significant but are not adequately controlled
4. There is insufficient information to assess risk and level of exposure

If after your assessment you select 3 or 4 then the chemical MUST NOT be used until the risk can be reduced to level 1 or 2. This is achieved through a hierarchy of controls. The Hierarchy of hazard controls is a list which emphasises controlling a hazard at the source. This is done by giving preference to the use of the controls outlined

### Hierarchy of Controls

Elimination -remove the hazard from the workplace

Substitution replaces the hazard with a less hazardous alternative

Isolation separates the hazard from the workplace or workers

Engineering Controls using plant and design to reduce the risks

Administrative controls modifying staff behaviour to control risks

Personal Protective Equipment providing physical protection worn by the employee (such as gloves and goggles)

### **In Summary**

Identify hazardous chemicals you are using

Read MSDS and follow instructions for use

Each person completes a Risk Assessment form for each hazardous chemical they use. This needs to be renewed when changes occur or after 5 years

The Risk Assessment is reviewed by Safety officer

It is then filed with M.S.D.S for reference

Label decanted bottles and prepared solutions correctly

Ensure your waste is properly disposed of in accordance with EPA regulations.

For further information on labels and MSDS see [www.workcover.nsw.gov.au](http://www.workcover.nsw.gov.au) Reading Labels and Material Safety Data Sheets.

For further information on Occupational Health and Safety within the University see <http://www.pers.mq.edu.au/safetycare/index.html>

# Unattended Reaction Form

<b>Experiment/Task:</b>	
<b>Date:</b>	
<b>Person Involved:</b>	
<b>Signature:</b>	
<b>Phone:</b>	
<b>Location where Experiment/Task will be performed (Include building/room # and bench):</b>	

<b>Has a Risk Assessment been Carried Out:</b>	<b>Yes</b>	<b>No</b>
<b>Summary of Experiment/Task:</b>		
<b>Equipment/Services Used:</b>		
<b>Chemicals Used:</b>		
<b>Reason the Reaction must be Performed Unattended:</b>		

<b>EMERGENCY PROCEDURES:</b>	
<b>Emergency Contact(s):</b>	<b>Phone Number:</b>

<b>APPROVED BY:</b>	<b>The experimental setup should be inspected before approval is given. A Risk Assessment must be Performed</b>
<b>Viewed Risk Assessment:</b>	<b>Yes</b> <b>No</b>
<b>Supervisor</b>	
<b>Signature</b>	

**This completed form should be placed with the Reaction with copies to the Departmental Manager and for your own records**

Taken from Department of Chemistry and Biomolecular Sciences.

# Risk Assessment –Experiment/Task/Process

Faculty of Science, Macquarie University

A risk assessment must be carried out for each process/method involving a hazardous chemical. To be jointly completed by Experimenter and Supervisor

Assessor's Name (Print) \_\_\_\_\_ Phone No: \_\_\_\_\_ Date: \_\_\_\_\_

Assessor's Signature \_\_\_\_\_ Area of use :( Building /Room) \_\_\_\_\_

Description of Experiment/Task/Process: \_\_\_\_\_

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Equipment/Services to be used: \_\_\_\_\_

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Substances to be used:

Substance Name	Manufacturer of substance	Catalogue No	Grade/Concentration	Hazardous Substance? Yes or No	Hazard category

Controls to be applied to reduce risks: \_\_\_\_\_

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I certify that the risks of this experiment/task/process are negligible or adequately controlled.

Supervisor (print name) \_\_\_\_\_ Signature \_\_\_\_\_ Date \_\_\_/\_\_\_/\_\_\_

# CHEMICAL HAZARD RISK ASSESSMENT FORM

## Faculty of Science

A risk assessment must be carried out by EACH person for EVERY HAZARDOUS CHEMICAL used. Each chemical needs a separate form. Consult and read the Material Safety Data Sheet before completing, If no MSDS is available go to H tick 4  
**PLEASE PRINT CLEARLY**

Substance Name: \_\_\_\_\_ Date of Assessment \_\_\_\_\_

CAS No \_\_\_\_\_ UN No \_\_\_\_\_ Class \_\_\_\_\_ PG No \_\_\_\_\_

Risk Phrases (list full) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Safety Phrases (list in full) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Summary of process/method \_\_\_\_\_ Quantity used in procedure \_\_\_\_\_

Assessed by (PRINT your name) \_\_\_\_\_ Ph EXT \_\_\_\_\_

**A. Concentration Used** \_\_\_\_\_ (A concentration cut off level for a substance represents a level [expressed as a percentage on a weight/weight basis] at above which that substance must be considered hazardous)

Is the concentration above level listed as hazardous? (as listed in Designated Hazardous Substances

.www.nohsc.gov.au Hazardous Substances Information System)

YES  Go to B

NO  Go to I tick 1

## B. Dangerous Goods Class Labelling

All products must be labelled in accordance with regulations.

(i) Which (if any) Dangerous Goods Class does the substance belong?

3(Flammable) 4(Flammable solid) 5(Oxidizing) 6(Toxic) 8(Corrosive) (Other)

(ii) Has the product been decanted?

YES  NO  Go to C

If YES then has it been labelled in accordance with regulations?

YES  Go to C NO  Go to I tick 3

## C. Method of Use and Exposure Risks.

Is the chemical used in way in which fumes, gases or dust particles are given off? YES  NO

Are any of the following, Eyes, Skin, Inhalation, or Ingestion an exposure risk? YES  NO

Is the substance a Carcinogen or a Mutagen or a Teratogen? YES  NO

If you answered yes to **any** question in C then go to D. If you answered NO to all, go to E

### D.1 Protective controls

Is it necessary to work in fume hood?

YES  Go to D2

Is it necessary to wear suitable protective clothing, gloves or eye/face protection?

YES  Go to D2 NO  Go to I tick 3

3

**D.2** Are all these protective controls readily available, clean and functional? YES  go to E NO  Go to I tick 3

## E First Aid

What first aid measures should be taken in case of an accident involving this chemical? \_\_\_\_\_

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## F Spills

What steps should be taken in the event of a spill of this chemical? \_\_\_\_\_

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Are the required resources and facilities in place? YES  Go to G NO  Go to I tick 3

## G Training

What training been given in the correct handling of this substance? \_\_\_\_\_

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Are you satisfied you understand the hazards involved in the use of this chemical?

YES  Go to H NO  Go to I tick 3

## H Disposal

What are the disposal methods? \_\_\_\_\_

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Are the required resources and facilities in place? YES  Go to I NO  Go to I tick 3

## I RISK ASSESSMENT CLASSIFICATIONS (Tick appropriate Risk Class box)

1.  Risks are not significant and are not likely to increase.
2.  Risks are significant but **are** effectively controlled.
3.  Risks are significant and are **not** adequately controlled.
4.  There is insufficient information to assess risk and level of exposure.

Select 1. if you are using a concentration less than which is considered hazardous or no precautions are required.

Select 2. if you are satisfied that adequate controls are in place.

Select 3. if you answered anywhere where you answered '**NO** go to I 3'

Select 4. if you are uncertain about risks, and no MSDS is available.

If you select 3. or 4. the chemical **MUST NOT** be used, until the risk can be reduced to 1. or 2.

If risk/s cannot be reduced then protocol may have to be changed or an alternative chemical found.

**ASSESSMENT APPROVAL: I am satisfied that the risks are not significant and/ or adequately controlled.**

Assessor's signature \_\_\_\_\_ Date \_\_\_\_/\_\_\_\_/\_\_\_\_

Supervisor Name (Print) \_\_\_\_\_ Signature. \_\_\_\_\_ Date \_\_\_\_/\_\_\_\_/\_\_\_\_

# SAFE USE OF MICROWAVE OVEN

Before using this microwave oven you must:

- 1) Receive instruction in the safe use of the microwave oven from your supervisor.
- 2) Read, understand and attach a copy of the appropriate Safe Work Procedure.
- 3) Sign and date this page.
- 4) Get your supervisor to sign and date this page.
- 5) Make two copies of this page and the Safe Work Procedure.
- 6) Lodge the original with the Head of Department, copy 1 with Jenny Minard and copy 2 in the appropriate folder adjacent to the microwave.

I have received instruction in the safe use of this microwave oven from my supervisor. I have read and understood the Safe Work Procedure/s attached for its use. I understand that there is an absolute ban on placing any bottle or other container with a lid inside the microwave oven.

USER

SUPERVISOR

NAME (Print):

NAME (Print):

SIGNED:

SIGNED:

DATE:

DATE:

## SAFE WORK PROCEDURE

**Explanatory note:** Safe work procedures need to be developed and documented. These procedures define how a task should be safely conducted. The development of the procedure must involve consultation with members of staff who carry out the task in the workplace.

Task: USING MICROWAVE TO.....

SOP No: Version: 1 Issue Date:

Division / Office: Department:

Supervisor / Manager:

Other Contacts:

HAZARDS	Heat burns, exploding vessels, fires, radiation
PROTECTIVE EQUIPMENT & EMERGENCY EQUIPMENT	Heat proof gloves, safety instructions, safety glasses, enclosed footwear
BEFORE YOU START	Read and follow instructions for use. <b>REMOVE LIDS FROM ALL CONTAINERS</b>
NEVER	Never put sealed containers in the microwave. Never make adjustments to or tamper with any component of the oven. Do not try to perform repairs on your own. The oven operates on high voltage and amperage that can be lethal if improperly handled Never attempt to dry, heat or sterilise clothes, blankets or wheat bags in microwave ovens as a fire may result. Never use recycled paper in microwave ovens unless they are specifically approved for microwave use. Recycled products including paper towels have minute metal flecks; these can cause sparks and even flames.
GENERAL PROCEDURES	Do not operate the oven if it is damaged or does not operate properly. It is imperative that the oven door seals properly and that there is no damage to the door seal, hinges, latches, or oven surfaces  Ovens must be cleaned on a regular basis to prevent biological contamination, fire potential, and door seal damage.  Ovens used for laboratory applications cannot be used for food preparation. Conversely, food preparation ovens should never be used for other applications.  Do not use aluminium foil or any metal containers, metal utensils, metal objects, or objects with metal or foil trim in the oven. Such items can cause arcing, damaging the oven and creating a fire or burn hazard.  <b>Do not heat objects that are sealed as they may explode, damaging the oven and blowing off the door.</b>  Never heat any flammable or combustible liquid in the oven. A fire and/or explosion may result.  Set appropriate power and time for the procedure being undertaken.  Be careful when removing containers from the microwave oven. Containers or their contents may be very hot, resulting in burns or spills of hot materials. Containers have been known to explode after tightening the lid following removal from a microwave oven  If a fire should start inside the oven, leave the door closed, disconnect the power cord, if safe to do so, and call the emergency number 9999.  Only use microwave-safe utensils. The instructions for the microwave oven often specify what types of containers etc are safe to use for that appliance  If your oven is damaged or you have a reason to believe it may be leaking, immediately unplug

	and inform your supervisor.
<b>SPECIFIC PROCEDURES</b> Include: Procedure Chemicals Personal protective equipment Methodology Identified risks	
<b>WHEN YOU FINISH</b>	Ensure oven is left clean

*Approved by:*

**DATE**