What do we do here?

How can we do it safely?
SCS Safe working practice

We all need to wear personal protection equipment

Transport and store chemicals safely

Use chemicals according to safe guidelines

Dispose of waste safely

Know how to deal with incidents if they occur

Ask for help if uncertain or inexperienced!

Lab managers will provide technical advice, answer any questions, ensure the practices above are followed – and talk to SCS colleagues if necessary.
Setting up a chemical reaction
SCS Types of work

Closed | Low risk | Closed

6 am | MONDAY - SUNDAY | 12 pm

**Definition** | Office work

Instrument measurements such as UV, IR, NMR

**No SCS access outside these hours**
If stuck inside, call **security** on 85000 or (09) 3737 999
SCS Types of work

Definition | Any work with hazardous, toxic or corrosive chemicals.

Virtually all lab work

Specialised high risk work as approved and signed off by PiC or lab manger
SCS Types of work

- Carcinogens, explosives, radioactive material, highly toxic chemicals (e.g. CO, HF, cyanide) or controlled drugs

- Any experiment that would need immediate medical treatment if something goes wrong

- Must be approved and signed off by lab manager

**Definition**

9 am - 5 pm

MONDAY - FRIDAY
Lab managers **Person in charge (PiC) list**

Work **above low risk** must have another adequately trained person within earshot to assist. **One person on the Lab Manager | PiC list must be present**

Staff and PhD students only

**Lab managers & PIs are responsible** for ensuring **PiCs** are trained and competent to carry out and supervise junior lab workers, and to approve **specialised higher risk activities**.

**Take 5 assessments** signed by the Lab manager or PiC must be available for any work being done in the lab

Working alone in labs **is prohibited**. There must always be one person **within earshot**

**Specialised higher risk activities** must be approved by Lab Manager
A nearby co-worker within earshot
A co-worker NOT within earshot
Safe lab wear **Personal protection equipment**

**Always wear** in lab. **Remove** in offices & normal lifts

Wear in lab.
Remove one to open doors or touch communal objects
*See SMOUs*

Always wear in lab.
Prescription glasses are not adequate

Available if required
Safe lab wear **Safety glasses**

- Safety glasses must be worn properly at all times in laboratory areas

  - **Prescription glasses** provide no protection from chemical splashes coming from the sides and are inadequate for labwork

- PhD students **may not** use PRESS accounts to buy labcoats or safety glasses from the Science Student Centre

- PhD students **are eligible** to use PRESS accounts to order prescription safety glasses from the [UoA Optometry Clinic](#). See your lab manager or professional staff.

- **Long hair** tied back safely.
### Safe lab wear **Shoes**

<table>
<thead>
<tr>
<th>![Green Check]</th>
<th>![Boots]</th>
<th>![Sneakers]</th>
<th>![Safety Shoes]</th>
<th>![Dress Shoes]</th>
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<tbody>
<tr>
<td>CLOSED SHOES</td>
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<tr>
<th>![Red X]</th>
<th>![Flip Flops]</th>
<th>![Sandals]</th>
<th>![High Heels]</th>
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<tbody>
<tr>
<td>OPEN SHOES</td>
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If unsure, ask your **lab manager** for guidance
Lab safety **Location of key equipment**

You must know where these items are and be shown them during your lab induction

**Defibrillator** at SCS reception in 302 L6
Safety information UoA HSW Website

SCS Forms for lab safety sign-off

Safe Method of Use (SMOU) guidelines for common reagents. These should be consulted before beginning or quenching a reaction.

Material Safety Data Sheets (MSDS) information for all chemicals required for Take 5 assessments.
Safety information UoA HSW website

Health and safety topics

Explore our collection of health and safety topics. These contain important information that helps protect our University community from harm.

Home / Health, safety and wellbeing / Health and safety topics

- Asbestos
  - Learn about asbestos and the actions the University is taking to ensure that all our buildings are safe.
  - Find out more

- Biological materials
  - Learn about the University's biological safety and containment requirements.
  - Read now

- Chemical safety
  - Find out about chemical safety, including how to transport and store chemicals, important rules to follow and more.
  - Explore now

Scroll down for many more topics below!
Chemical safety

Learn more about chemical safety, including how to transport and store chemicals, what to do in an emergency, important rules to follow and more.

Rules, guidelines and Safe Methods of Use (SMOU)

- Frequently asked questions
- Databases
- Transporting chemicals
- Purchase, storage and disposal of chemicals
- Workshop: HSE and exempt laboratory managers
- Workshop: Chemical safety induction programme
- Sichem
- Hazardous spills
- Emergency information

Rules and Safe Methods of Use (SMOU)

Stay safe in our chemical labs by following the rules and the SMOU.

View now
Safety at the School of Chemical Sciences

The following downloadable documents contain information that is specific to the School of Chemical Sciences.

**Guidelines**
Offer local rules and advice for operating safely within SCS research spaces.

[Download this PDF](#) 1.6 MB

**Safety seminar**
Annual attendance at this seminar is a requirement for students wishing to access SCS research spaces.

[Download this PDF](#) 2.6 MB

**General information and reporting form**
Learn more about what to report and how to do it.

[Accident, incident and hazard reporting form](#) 319.1 KB

**Defining accidents and incidents**

**Incidents**
Any unplanned event or occurrence resulting in, or having a potential for injury, ill-health, damage or other loss.

**Accidents**
An incident that has caused harm, fatality, ill-health, damage or other loss.
Wellbeing information UoA HSW website
Safety information UoA HSW website

Tour
Chemical transport is regulated. Fines of $2K (individual) and $10K (UoA) are possible.

ChemCouriers can be used between UoA sites. See Tasdeeq to arrange.

Public transport must NOT be used.

Use a sturdy carrier or trolley and a secondary container when moving chemicals within SCS.
Safety information **SciTrack**

Chemical storage is regulated.

Accurate locations of all chemicals are kept in **SciTrack**. See your professional staff member to query or update these records.

Any time chemicals are **moved** see your professional staff team member to update the location.

When chemicals are **disposed of** make sure you see your professional staff team member to update the records.

* this is very important

UoA and SCS are easily searched for **existing chemicals in stock**, that may usually be **borrowed from other groups** on request.
Safety information **Chemical storage**

Chemicals must be **segregated by hazard class** (no matter how few and in all locations). This is a **legal requirement**. All labs in SCS have designated chemical storage areas.

![Chemical hazard symbols]

All samples and reagents **must be labelled**, including research samples. **Structure, name or CAS number** is required, and a lab book reference if relevant.

Large samples (>50g) should display **complete safety information**

**Consult your professional staff team member or supervisor** before storage. Check the MSDS for storage details.
Class 1. Explosive
1.1 Substances with a mass explosion hazard
1.2 Substances which present a projection hazard but no mass explosion hazard
1.3 Substances which present both a fire hazard and a minor blast or projection hazard (or both) but not a mass explosion hazard
1.4 No significant hazard
1.5 Very insensitive substances with a mass explosion hazard
1.6 Very insensitive articles with no mass explosion hazard

Class 2. Gases
2.1 Flammable gases
2.2 Non-flammable, non-toxic gases
2.3 Toxic gases

Class 3. Flammable liquids

Class 4. Flammable solids
4.1 Flammable solids, self-reactive substances and solid desensitised explosives
4.2 Materials liable to spontaneous combustion
4.3 Substances which, in contact with water, release flammable gases

Class 5. Oxidizing substances and organic peroxides
5.1 Oxidizing agents
5.2 Organic peroxides

Class 6. Toxic and infectious substances
6.1 Toxic substances
6.2 Infectious substances

Class 7. Radioactive substances and articles

Class 8. Corrosive substances

Class 9. Miscellaneous dangerous substances
Consult your supervisor or PiC before starting a new type of experiment, or scaling up, or using unfamiliar equipment.

Complete and sign a Take 5 assessment before beginning each experiment. This is a legal requirement. It needs to be available while the reaction is in progress.

For new or junior researchers the Take 5 assessment should be signed by a PiC or supervisor.

Part of the Take 5 involves finding and reading the MSDS and SMOU guidelines for potentially dangerous reagents.

You are stating that necessary safety equipment is available and you know where it is
Unattended experiments

Complete and sign an unattended experiment form before leaving any experiment. It needs to be clearly visible while the reaction is in progress.

For new or junior researchers the unattended experiment form should be signed by a PiC or supervisor.

The PiC or supervisor must inspect the reaction before signing the form.

An all-hours contact phone number must be clearly visible.

Consider long-term risks including cooling water failure, reaction exotherm, unreliable gas supply and breakage.
Collect waste in a suitable container by type and compatibility. Consult your professional staff team member, PiC or supervisor to check.

The more information the better. Disposal costs are very high for unlabeled waste.

NO NEEDLES in chemical waste under any circumstances!
This is a serious problem in chemical waste and very dangerous for the disposal company.

Please read the relevant SMOU guidelines.
Keep **aqueous waste**, **halogenated solvents** and **non-halogenated solvents** separate.

All waste goes to the **SCS chemical stores**

No chemical waste in the normal rubbish bins

**SCS waste water is monitored.** Only minimally contaminated waste with acceptable pH and low organic content can go down the lab sinks.

Please read the relevant **SMOU guidelines.**
Reaction safety **Glass and needles**

Collect glass/sharps waste in the dedicated **sharps bin**

Broken glass is collected in a dedicated **glass bin**.

Some broken glassware can be repaired. Ensure it is **cleaned of chemical residues** before taking to the glassblower.
Reaction safety **What causes the most lab incidents?**
Reaction safety **What causes the most lab incidents?**

Cuts due to broken glass are the main source of injuries needing first-aid treatment each year at SCS!

Take care in attaching hoses to any glass equipment, capping NMR tubes, using glass pipettes and disassembling gas manifolds.
Pay extra attention and do not use excessive force when attaching rubber tubing to glass! This includes gas adaptors, manifolds or any other weak joints. Rotate the joining partners with steady pressure or use a tiny smear of grease (if appropriate for your work).

If the glass breaks the edges are extremely sharp and will deeply cut your hand. Each year (including this one) SCS has several incidents of this kind.
**Reaction safety Syringes**

Syringes are used to safely transfer solvents and reagents into reaction vessels through rubber septa.

Disposal plastic syringes are suitable for many uses.

Add the solvent or reagent carefully – the needle can pop off if pressure builds up, and the syringe contents will be sprayed across you and your surroundings.

Luer lock syringes MUST be used for any transfer of toxic or corrosive reagents.

Ensure the needle is securely twisted in place.

Ask your supervisor or professional team member if you need help to get hold of a Luer lock syringe.
One of the purposes of the Take 5 assessment is so that you know how to deal with potential reagent spills - before they happen.

Consider reagent quenching, disposal and spill clean-up measures. Warn researchers nearby if appropriate.

Are there volatility, flammability or toxicity issues to manage?

Spill kits are required to be available in all labs. Consult your professional team member if uncertain.

In the event of a spill, make sure a PiC is notified immediately so the clean-up can be managed.

Don’t tackle a large solvent spill alone.

If in doubt, evacuate and call 111
Fire extinguishers can be found in every lab (CO₂ and powder)

Only tackle small fires. If no progress is made after 20 seconds trigger the fire alarm and evacuate. Call 111

Particular dangers are pyrophoric materials (NaH, LAH) and organic solvents. If you are able, remove solvent containers from the site of the fire and secure in solvent cabinets.

If the fire was in your area, inform the fire warden or SCS staff at the SCS fire alarm board at the Symonds St steps after evacuating. Explain to any wardens why you must speak to staff.

Notify your supervisor or PiC immediately
First aid cabinets are on every floor of 301 and 302

Smaller first aid boxes are available in labs

Diphoterine spray should be used immediately on any chemical burn (solvent, acid, base but not HF). Can be used in eyes. Ask your supervisor or a PiC where it is kept in your laboratory.

Immediately notify your supervisor or PiC. If there is any doubt, call 111 and request an ambulance.

Obtain the relevant MSDS to assist medical staff and accompany the patient to hospital.

If you have an existing medical condition (known allergies, asthma) make sure notify your supervisor and PiCs.
SCS safety improvement Incident reporting

An incident is when something unexpected happens, but nobody is injured. A near-miss is a wake-up call.

An accident involves any personal injury, no matter how minor.

All these must be reported. Any use of first aid requires an incident form to be submitted. See your professional staff team member for assistance in completing the incident form.

No blame is attached to reporting!
All this information is very valuable in working out the best H&S plans and keeping everyone safe at all times. Make sure to submit a form each time.

If you have any concerns about any issue anywhere in SCS don’t hesitate to contact SCS H&S staff, your supervisor, PiC or professional team member. Ensure you are satisfied that the issue has been addressed.
SCS safety improvement **Incident reporting**

*2 hours after accident*

*5 days after accident*

*1 year after accident*
LEVEL

Level 4 - Eliminate
Likely that disease is not contained

Level 3 - Restrict
Heightened risk that disease is not contained

Level 2 - Reduce
Disease is contained, but risks of community transmission growing

Level 1 - Prepare
Disease is contained

**Essential work only**
Very limited numbers, stringent spacing and working requirements. Masks.
**Hours** 8am-5pm, Mon-Fri

**Approved high-priority work**
Small numbers may be permitted in labs, with FoS approval via Mike Wadsworth. Masks.
**Hours** 8am-5pm, Mon-Fri

**Most research work**
Majority of researchers, under personnel limits in labs & offices and 1m spacing
Desk work, meetings and lectures done remotely. **Hours** 6am-12am, Mon-Sun

**Undergraduate lectures**
Research resumes essentially as normal.
**Hours** 6am-12am, Mon-Sun
Lab & office access, and personnel limits are by approval (e.g. floorplan above). You must adhere to them.

Bathrooms and other shared spaces may have special arrangements.
## COVID19 Level 2,3 Workspace draft plan | SCS 301 Level 7

**Draft 2.0  24 Aug 2020  
Dr Dan Furkert**

### GENERAL SAFETY CONSIDERATIONS

**ACCESS** is requested for a maximum of 35 people to work in these labs at one time
21 in the MAB,DPF research group and 14 in the JS group

**LAB USE**  Numbers for maximum occupancy are indicated on the floorplan (previous page). Lab users should exercise discretion in maintaining 1m **physical spacing** during work, paying particular attention to **workflow pinch points** such as sinks, communal instruments/equipment, corridors and entry/exit points. Lab managers are asked to reduce occupancy or apply a roster system if **necessary** to maintain spacing.

**TOILETS**  These are in **normal usage**. Users are asked to use common sense and wait if necessary, to maintain 1m **physical spacing** during entry/exit and hand washing.

**ACCESS**  Everyone who enters the floor must sign the access register in the lift lobby. Full contact details of all lab users must be kept by the lab manager or professional staff member responsible for the area. Visitors or service personnel are permitted but must make contact with the lab manager or professional staff member responsible and supply their details. Researchers may access other areas in SCS including NMR and 302. Transfer between SCS and SBS is permitted.

**MASKS**  Masks or face coverings must be worn at all times in labs, offices and while moving around University property. **Disposable** masks must be worn in laboratories and workshops.

**GENERAL**  In all situations researchers are asked to apply common sense to maintain 1m physical spacing and conduct their daily operations **so as to minimize any risk of spread of COVID19** should it be carried into the workspace.

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Risk assessments and procedures have been agreed and approved by FoS, and may sometimes seem unexpected. **You must adhere to them.**
Real-time Safety Information **UoA Alert app**

**UoA Alert** is the official emergency and safety app of the University of Auckland. The app will send you important safety alerts and provide instant access to campus safety resources, information and other useful links.

See [https://superuoa.custhelp.com/app/answers/detail/a_id/16329](https://superuoa.custhelp.com/app/answers/detail/a_id/16329) for more
COVID Levels Summary

Confirm with your supervisor or PiC that you are permitted to access the offices or labs, before travelling to work at UoA. **Access only possible after official approval.**

On arrival check the **working regulations and personnel numbers** with professional staff or your supervisor.

Use the government **COVID Tracer app**

Raise any **questions or concerns** about personal spacing, lab hours and permitted activities with your supervisor or professional staff, quickly.

**Please be patient** with approvals and information supply. There are many backroom processes to provide access to SCS.

**Your access may be withdrawn if guidelines are not followed**
Seminar sign-off SCS form to submit

Download the guidelines pdf and print out the last two pages

Scan and email the 2 signed forms to fos.accessrequest@auckland.ac.nz

Keep one copy to show security if your authorisation to work is questioned
Hi Dan,
Can you add a slide at the end of the Safety seminar presentation that says the following please:

Complete the two forms at the end of the Guidelines document, scan and email back to fos.accessrequest@auckland.ac.nz
You need to include “Safety Forms” and your name in the subject line.
The originals should be kept in your lab book.

Farnaz will collate the emails at her end.

Download the guidelines pdf and print out the last two pages

Submit one copy of the completed and signed form to SCS reception

Keep one copy to show security if your authorisation to work is questioned
SCS Safe working practice

We all need to wear **personal protection equipment**

Transport and store chemicals safely

Use chemicals according to **safe guidelines**

Dispose of waste safely

Know how to **deal with incidents** if they occur

**Ask for help** if uncertain or inexperienced!

**Lab managers** will provide technical advice, answer any questions, ensure the practices above are followed. Consult your SCS colleagues if necessary.