



# RISKASSESS USER GUIDE

## Background

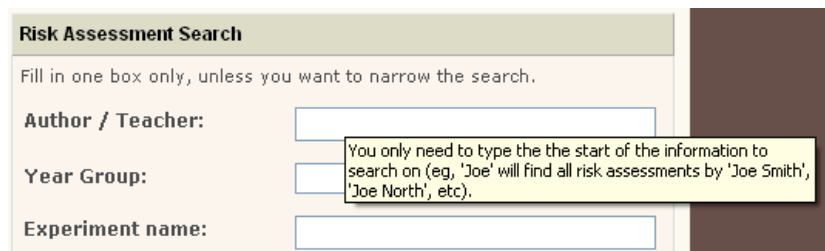
According to Australian and New Zealand laws, schools are legally required to conduct a risk assessment before each practical experiment. Each person is required to carry out a risk assessment for the actual tasks that they are going to do. A teacher assesses the risks for the experiment in the classroom; a laboratory technician assesses the risks of preparing the package of equipment and chemicals for the class, and then disposing of chemicals and equipment afterwards. It is not possible to do a risk assessment for another person.

RiskAssess provides a convenient and rapid method to meet these legal obligations. It also helps avoid accidents with up-to-date safety information on equipment, chemicals and living things. RiskAssess saves time for teachers and laboratory technicians by providing a risk assessment proforma, automatic equipment ordering and laboratory scheduling. It also saves paper and filing, by using electronic documents and electronic signatures.

## This Guide and On-Screen Help Within RiskAssess

This guide will help you get started with RiskAssess. It also provides hints and suggestions for getting the most out of RiskAssess.

The RiskAssess system is easy to use, and has help information on-screen next to fields and buttons. Further help is available by leaving your mouse pointer over boxes and buttons – often you will see further information appearing in a yellow box.



**Risk Assessment Search**

Fill in one box only, unless you want to narrow the search.

**Author / Teacher:**

**Year Group:**

**Experiment name:**

You only need to type the the start of the information to search on (eg, 'Joe' will find all risk assessments by 'Joe Smith', 'Joe North', etc).

## Questions & Suggestions

Please let us know if you have any questions or comments. We are always keen to receive any suggestions for ways to improve RiskAssess.

*Dr Phillip Crisp*

for general discussion and feedback

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*James Crisp*

for technical issues and computer questions

<http://jamescrisp.org/contact/riskassesscontact/>

## Log In and Home Page

When you first log in to RiskAssess, you will see the home page for your school.

**RISKASSESS**  
Risk Assessments For Schools

**EcoSolve High School Home Page** [Log out](#)

**Blank Risk Assessment**

[Start Blank Risk Assessment >](#)

Alternatively, to copy an existing risk assessment, find it with the search box on the right.

**Laboratory Scheduling**

View the laboratory schedule for:  
[Today](#) | [Tomorrow](#) | [1 Week](#) | [4 Weeks](#)

**Recent Risk Assessments**

- [Identifying minerals](#) by Phillip Crisp (seconds ago)
- [crystal growing](#) by Tina Jones (1 min ago)
- [Organisms](#) by Jim Lo (2 mins ago)
- [Electromagnet](#) by Tina Jones (4 mins ago)
- [Effectiveness of cleaning](#) by Tina Jones (13/8/11)

**Risk Assessment Search**

Fill in one box only, unless you want to narrow the search.

**Author / Teacher:**

**Year Group:**

**Experiment name:**

**Procedure / Reference:**

**Date:**

**Chemicals / Equipment / Living things used:**  For example: burette, sodium hydroxide

**Or list:** [All](#) | [Deleted](#)

**Safety Information Search**

See safety information without doing a full risk assessment.

**RiskAssess News** [Download the User Guide for RiskAssess](#)

**13 August 2011 - RiskAssess has been upgraded to Release 3!**

We believe the new features in the Release 3 will be of great value to all schools. Release 3 allows better recording of control measures and approvals, but retains a simple format for experiments with "low" risk.

Users in Queensland Government Schools should find Release 3 particularly valuable, since Release 3 fully satisfies the new requirements of the Queensland Department of Education and Training (RiskAssess is a "more detailed risk

Each risk assessment you perform will be saved on the RiskAssess system. The last 5 risk assessments performed at your school are shown in the “Recent Risk Assessments” box. You can also find risk assessments performed at your school using the “Risk Assessment Search” box on the right.

The “Laboratory Scheduling” provides a day-by-day view of practicals in your school, and is particularly useful for scheduling experiment preparation and for communicating between teachers and laboratory technicians. Future experiments and experiments performed last week can be viewed. See “Laboratory Scheduling” section for more details.

The “Safety Information Search” lets you do a quick search on any item in the database (e.g. chemical, equipment or living things) to find out safety information about it, without doing a full risk assessment.

“RiskAssess News” keeps you up-to-date on the latest new features and improvements in the RiskAssess system.

## Your First Risk Assessment

When you begin to use the software, there are no existing risk assessments. Click the “Start Blank Risk Assessment >” button, and you will be presented with the risk assessment form. Either a teacher or a laboratory technician can initiate a risk assessment for an experiment.

First, fill in general information about the risk assessment:

<b>School:</b>	<b>Ecosolve High School</b>
<b>Author:</b>	Tina Jones
<b>Experiment name:</b>	Effectiveness of cleaning
<b>Text reference: (or procedure if no reference)</b>	Take swabs of various locations around school and then apply different cleaning/killing solutions to see which is most effective

For the text reference, you can either write out a procedure, or simply provide a reference to a text box.

Next, information about classes and preparation:

Classes for Which Experiment is Required			
<b>Teacher:</b>	Tina Jones		
<b>Year group:</b>	10		
<b>Chemical user codes:</b> <a href="#">Explanation of codes</a>	Teacher 2	Lab Tech	
<b>Scheduling:</b> You can leave off the year for classes in 2011	Room 303	Period A	Date (d/m/yy) 14/11/11
			<a href="#">More classes...</a>
<b>Scheduling notes:</b> Additional scheduling notes for the laboratory technician			
<b>Equipment / chemicals to be prepared by laboratory technician:</b> <i>For example</i> 10 groups of: 3 x Mg ribbon, 2cm long 1 x 50mL 1M HCl bottle	Qty x Item (or groups) 20 agar plates box of disposable gloves (unopened if possible) methylated spirits 16 antibiotic discs (all same type of antibiotic, any broad-spectrum would do) box of cotton swabs (unopened if possible)		

“Chemical user codes” are compulsory in NSW Government schools and you may find them helpful. See the “Explanation of codes” for details. The software will automatically check the user codes of chemicals against those of the users. Any entry

of a chemical user code will prevent use of a chemical forbidden in NSW Government schools.


The “Scheduling” section allows you to specify when and which room the practical is in. Filling in these fields allows you to use the automatic laboratory scheduling system (see later section on Laboratory Scheduling).

The “Equipment/chemicals to be prepared by laboratory technician” and “Scheduling notes” allows communication of requirements between teacher and laboratory technician (see Ways to Use RiskAssess at Your School for more details).

Choose the equipment, chemicals and living things for the experiment. Type each item in the appropriate box and either click the “Search and Add” button or press the "return" key to locate it in the database:

**Equipment, Chemicals & Living Organisms for Risk Assessment**

For each section below, enter one or more words to search on and then click 'Search & Add'. If a match is found, it will be added to your risk assessment. For example, in the 'Chemicals Used' section, enter 'iron oxide', click the button, and it will be added to your risk assessment. You can also search by chemical formula (eg, 'CH<sub>3</sub>COOH'), and incomplete words (eg, 'ir ox' will find iron oxide).

<p><b>Equipment</b></p> <p>agar plate <a href="#">Remove</a></p> <p>gloves, rubber <a href="#">Remove</a></p> <p>tape <input type="text"/> <input type="button" value="Search &amp; Add"/></p>	<p> Multiple results found. Click one below, or search again.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <a href="#">tape, adhesive</a></li> <li><input type="checkbox"/> <a href="#">tape, adhesive</a></li> <li><input type="checkbox"/> <a href="#">tape, duct</a></li> <li><input type="checkbox"/> <a href="#">tape, electrical</a></li> <li><input type="checkbox"/> <a href="#">tape, packing</a></li> <li><input type="checkbox"/> <a href="#">taper</a></li> <li><input type="checkbox"/> <a href="#">adhesive tape</a></li> <li><input type="checkbox"/> <a href="#">adhesive tape</a></li> <li><input type="checkbox"/> <a href="#">cellotape</a></li> <li><input type="checkbox"/> <a href="#">duct tape</a></li> <li><input type="checkbox"/> <a href="#">electrical tape</a></li> </ul>
<p><b>Chemicals Used</b></p> <p>methylated spirits <a href="#">Remove</a></p> <p><input type="text"/> <input type="button" value="Search &amp; Add"/></p>	
<p><b>Chemicals Produced</b></p> <p><input type="text"/> <input type="button" value="Search &amp; Add"/></p>	
<p><b>Living Organisms</b></p> <p><input type="text"/> <input type="button" value="Search &amp; Add"/></p>	

When searching, you can enter the first part of a word. For example, if you enter “spat” and click the "Search and Add" button, “spatula” will be automatically entered. If there are several options that match the letters you have entered in the text box, a list will come up and you can click the appropriate option to be automatically entered. You can also search with chemical formulae. For example, “hcl” will find “hydrochloric acid” at its various concentrations (along with a few oxychloro acids).

If you cannot find an item of equipment, a chemical or a living organism in the database, enter it in the “Other Items” text box at the end, along with any known potential hazards and standard handling procedures.

**Other items:**

Include potential hazards & standard handling procedure

antibiotic disk - only place on agar

By running 'Generate Risk Assessment' you accept the [Conditions of Use](#) for the RiskAssess website.

When you have completed the form, click “Generate Risk Assessment >”. You will then see the resulting risk assessment with information on equipment, chemicals and living things incorporated from the RiskAssess databases. The image of the one below has been cut short to save space in the guide - it has further sections.

RISK ASSESSMENT		EcoSolve High School	
<b>Effectiveness of cleaning</b>			
<b>Written by:</b> Tina Jones	<b>Commenced on:</b> 13 Aug 2011	<b>Expires:</b> 13 Nov 2012	
<b>Classes for which experiment is required</b>			
<b>Teacher:</b> Tina Jones (user code 2)	<b>Year Group:</b> 10	<b>Room</b>	<b>Period</b> <b>Date</b>
		303	A    14/11/11
<b>Items to be prepared by laboratory technician</b>			
20 agar plates			
box of disposable gloves (unopened if possible)			
methylated spirits			
16 antibiotic discs (all same type of antibiotic, any broad-spectrum would do)			
box of cotton swabs (unopened if possible)			
1 permanent marker			
sticky tape			
<b>Procedure or reference, including variations</b>			
Take swabs of various locations around school and then apply different cleaning/killing solutions to see which is most effective.			
<b>Equipment to be used</b>			
<b>agar plate</b>			
<i>Potential hazards</i>		<i>Standard handling procedures</i>	
May contain pathogenic organisms, depending on what has been growing on it.		Sterilize either by autoclaving (e.g. in pressure cooker) or by immersion in bleach before disposal; alternatively, used plates may be taken to a hospital for disposal. Autoclaving has the advantage that the plates do not need to be opened for sterilization.	
<b>rubber gloves</b>			
<i>Potential hazards</i>		<i>Standard handling procedures</i>	
May easily be punctured, allowing entry of liquid.		Keep out of sunlight. Take care not to puncture. Check for punctures before use.	
<b>sticky tape</b>			
<i>Potential hazards</i>			
Do not tape over mouth or nose.			
<b>Chemicals to be used and produced</b>			
<b>ethanol</b>		<b>CH<sub>3</sub>CH<sub>2</sub>OH</b>	
(ethyl alcohol, alcohol, absolute alcohol, methylated spirits, duplicating fluid, duplicator spirit, Fordiograph fluid)			
Class: 3	PG: II	<b>7-12</b>	Users: 1,2,3,4,5
			UN: 1170    CAS: 64-17-5
<i>Potential hazards</i>		<i>Standard handling procedures</i>	
HIGHLY FLAMMABLE; DO NOT USE NEAR IGNITION SOURCES; slightly toxic; prolonged contact with skin causes irritation. Forms violently explosive mixtures with nitric acid and other oxidising agents. Reaction of ethanol with acidified dichromate solution is highly exothermic.		Store and use away from ignition sources. Methylated spirits is the usual form in which ethanol is obtained; it contains methanol (5%), water (5%) and small amounts of pyridine and other coal-tar products to make the liquid unpalatable. Methylated spirits is adequate for most	

Review the risk assessment. If you want to change anything, click the “Author’s Update” button at the top. This takes you back to the form, and you can fix any errors or omissions. “Author’s Update” should **not** be clicked to re-use the risk assessment

for a different day, or for a different teacher. “Create Modifiable Copy” should be used for this. See the Re-using and Sharing Risk Assessments section later in this document for more information.

### The Actual Risk Assessment

You carry out the actual risk assessment when you consider the risks listed under the heading “Risk assessment”.

<b>Knowledge</b>			
<input type="checkbox"/> I have read and understood the potential hazards and standard handling procedures of all the equipment, chemicals and living organisms.			
<input type="checkbox"/> I have read and understood the Material Safety Data Sheets for all chemicals used and produced.			
<input type="checkbox"/> I have copies of the Material Safety Data Sheets of all the chemicals available in or near the laboratory.			
<hr/>			
<b>Risk assessment</b>			
I have considered the risks of:			
<input type="checkbox"/> fire	<input type="checkbox"/> breakage of equipment	<input type="checkbox"/> electrical shock	<input type="checkbox"/> radiation
<input type="checkbox"/> explosion	<input type="checkbox"/> cuts from equipment	<input type="checkbox"/> escape of pathogens	<input type="checkbox"/> waste disposal
<input type="checkbox"/> chemicals in eyes	<input type="checkbox"/> sharp objects	<input type="checkbox"/> heavy lifting	<input type="checkbox"/> inappropriate behaviour
<input type="checkbox"/> inhalation of gas/dust	<input type="checkbox"/> rotating equipment	<input type="checkbox"/> slipping, tripping, falling	<input type="checkbox"/> special needs
<input type="checkbox"/> chemicals on skin	<input type="checkbox"/> vibration and noise	<input type="checkbox"/> falling objects	<input type="checkbox"/> other risks
<input type="checkbox"/> runaway reaction	<input type="checkbox"/> pressure	<input type="checkbox"/> heat and cold	

Your personal knowledge, all the database information and the “Knowledge”, including the MSDSs for chemicals, provide the basis for your risk assessment. You must carry out a risk assessment for the actual tasks you are going to do. A teacher assesses the risks for the experiment in the classroom; a laboratory technician assesses the risks of preparing the package of equipment, chemicals and living things for the class, and then disposing of chemicals and equipment afterwards. It is not possible to do a risk assessment for another person. RiskAssess is a tool that provides information, a template and a structure in which you may do your risk assessments.

The risk assessment follows the Australian/New Zealand ISO Standard AS/NZS 31000:2009. When you identify a risk from the checklist, you need to consider its “likelihood” and its possible “consequences”. The “severity” of the risk is assessed using the School’s risk matrix (also known as risk level matrix). Click the “School’s risk matrix” link for sample risk matrices and further information.

You can also see the standard for more details. It is recommended that your school obtain a copy of the Standard and the Risk Management Guidelines HB 436:2004, and that persons carrying out risk assessments be familiar with them. The Australian/New Zealand standard may be obtained from Standards Australia Ltd (at <http://www.standards.org.au>).

The logic of the risk assessment process is as follows:

First of all, you assess the “inherent level of risk”, that is, the risk level without control measures. Control measures are measures put in place to make an activity safer. Click the appropriate button: "Low risk", "Medium risk", "High risk" or "Extreme risk".

If the inherent level of risk is “low” for both the classroom experiment (teacher) and the preparation/cleanup (laboratory technician), the risks can be managed by routine procedures in the classroom/laboratory. Both the teacher and laboratory technician should complete the certification section to state that the risks are “low”.

If the inherent risk is “medium” or greater for either the classroom experiment or the preparation/cleanup, you must enter control measures in the appropriate text box and you must click on "Save Control Measures" to save the control measures in the risk assessment form. You can edit your entry or add control measures by clicking "Update Measures". Remember to click "Save Control Measures" each time you complete an entry. Sufficient and appropriate control measures must be put in place to reduce the risk level to “low risk”. Both the teacher and laboratory technician should complete the certification section to state that the risk level has been reduced to "low risk".

**Certification by teacher**

I have assessed the risks associated with performing this experiment in the classroom on the basis of likelihood and consequences using the [School's risk-level matrix](#), according to Australia/New Zealand/International Organization for Standardization Standard AS/NZS ISO 31000:2009 and the Risk Management Guidelines, HB 436:2004.

I consider the [inherent level of risk](#) (risk level without control measures) to be:

Low risk   
 Medium risk   
 **High risk**   
 Extreme risk

**Control Measures:**

Use only pea-sized lump of sodium.  
Ensure beaker is filled to the top with water.  
Keep students well back.

safety glasses   
 gloves   
 lab coat   
 fume cupboard   
 demonstration

Save Control Measures >

With the specified control measures in place, I have found that all the risks are "low risk". Risks will therefore be managed by routine procedures in the classroom, in combination with the specified control measures.

**Name:** .....   
**Signature:** .....   
**Date:** .....   

If the classroom component of the experiment has a “high” or “extreme” level of inherent risk, additional approval must be obtained from an authorised person. Click on “authorised person” for details.

**Approval by authorised person**

(An [authorised person](#), e.g. Head of Department or Principal, is required to approve the experiment when the inherent level of risk in the classroom is "high" or "extreme")

I note that the inherent level of risk for this experiment is "high" or "extreme". As an [authorised person](#), I approve this experiment, on the condition that the above control measures are put in place in the classroom.

**Name:** .....   
**Signature:** .....   
**Date:** .....   

As classroom experiments with a “high” or “extreme” level of inherent risk have the greatest potential to cause injuries, it is important that an authorised person check that adequate control measures have been put in place to reduce the risk level to "low risk". In this case, signatures of the teacher, the laboratory technician and the authorised person are required, prior to the risk assessment being archived.

When you first generate a risk assessment, no inherent risk level is assigned. Once you choose an inherent risk level, the form will automatically change to show only the

relevant control measures and signature boxes. Even if you are printing the form rather than using electronic signatures, we recommend you select the inherent level of risk and enter control measures (if required) using RiskAssess, as this will decrease the number of pages you will need to print.

### Review

To keep track of modifications, problems or ideas about experiments, a button for “Add Review Notes” is provided at the top of the page. A new window will appear and you can enter your notes and click "Save Notes".

You can update the review notes by clicking "Update Review Notes", entering changes and clicking "Save Notes" button.

Each time you press the “Save Notes” button, the information entered here is stored with the risk assessment and is available whenever the risk assessment is viewed again (e.g. for review and update the following year or when another member of staff is planning to copy the risk assessment for another class).

### Re-using and Sharing Risk Assessments

Once you make a risk assessment for a particular experiment, for a given room, period and date, it is stored on the RiskAssess system. This risk assessment should not be modified ever again, even if you are doing a similar experiment. Instead, a copy of the risk assessment should be made using the “Create Modifiable Copy” button. This new risk assessment will have all of the information that the old one had, and can be customised with any changes in procedure, and the correct scheduling information relating to room, period, date etc. This approach allows you to use the automatic laboratory ordering and scheduling system, and complies with the legislation, as you are signing a risk assessment of the exact practical you are performing (i.e. for a particular period, on a particular day, in a particular room). The RiskAssess system makes it very quick and easy to copy and customise existing risk assessments to save you time.

You can re-use risk assessments that you or other staff at your school have created. First, find the risk assessment you want to copy. If it was one of the last 5 risk assessments at your school, you will see it in the “Recent Risk Assessments” box on the home page. Otherwise, you can find it using the “Risk Assessment Search” box on the home page. Once you have found the relevant risk assessment, and read the

Review Notes (if present), click the “Create Modifiable Copy” button at the top of the page.

The screenshot shows a navigation bar with four buttons: 'Create Modifiable Copy' (highlighted with a red box), 'Author's Update', 'Add Review Notes', and 'Home Log out'. Below the buttons, the text 'RISK ASSESSMENT' is on the left and 'Ecosolve High School' is on the right.

You will then have your own copy of the risk assessment, which you should review and customise to suit your own experiment; you can also enter relevant scheduling information (room, period, date, etc). This process satisfies the legal requirement to regularly review and update risk assessments. It allows the teacher and laboratory technician to comply with legislation by showing they have performed and signed a risk assessment of the particular experiment they will be doing at a specified time and place.

### Laboratory Scheduling

From the home page, you can choose to view the laboratory scheduling for different time periods.

The screenshot shows a box titled 'Laboratory Scheduling' with the text 'View the laboratory schedule for:' followed by four links: 'Today', 'Tomorrow', '1 Week', and '4 Weeks'.

The laboratory scheduling screen is a day-by-day view of future or previous experiments. It shows summary information about each experiment, and also provides a link to the full risk assessment for further details and/or electronic signing. As soon as a new risk assessment is entered in the system for an experiment, it will automatically show up in the scheduling screen.

The screenshot shows the 'Laboratory Schedule' screen with a dropdown menu set to 'Four Weeks' and buttons for 'Print' and 'Download for Excel (CSV)'. Below, there are two sections for dates: 'Monday, 18 October 2010' and 'Tuesday, 19 October 2010'. Each section contains a table with columns: Period, Room, Year, Teacher, Experiment & Procedure, and Prepared?. The 'Prepared?' column is highlighted with a red box.

Period	Room	Year	Teacher	Experiment & Procedure	Prepared?
<b>Monday, 18 October 2010</b>					
B	201	11 Chemistry	Joe West	<a href="#">Acid And Metal</a> Science Spectrum 8.5	<input checked="" type="checkbox"/>
B	404	11 Chemistry	Tina North	<a href="#">Acid And Base</a> Science Spectrum 12.4	<input type="checkbox"/>
<b>Tuesday, 19 October 2010</b>					
Period	Room	Year	Teacher	Experiment & Procedure	Prepared?
C	302	11 Chemistry	Tina North	<a href="#">Acid And Base</a> Science Spectrum 12.4	<input type="checkbox"/>

In many schools, teachers prepare risk assessments and then send them to laboratory technicians for review, signing and preparation. The scheduling screen helps this process by giving the laboratory technicians an up-to-date list of experiments that they can review, sign and prepare. Since laboratory technicians can do all this all from

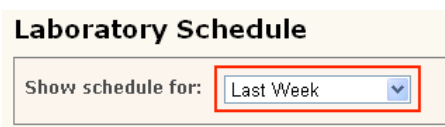
the scheduling screen, it is generally not necessary for teachers to email risk assessments to laboratory technicians, or notify them by other means.

There is also a “Prepared?” tick box marked in red above. The tick box is designed to help laboratory technicians keep track of which practicals they have already prepared, and which still need preparation. The tick box also helps teachers by giving them a way to easily confirm that their practical request has been received and prepared.

It can often be beneficial to have a ‘cut-off time’ for practicals to be lodged in RiskAssess (e.g. one or two days before the practical), to allow the laboratory technicians time to prepare in advance, and get an accurate listing of upcoming practicals. In rare cases where the ‘cut-off time’ was missed, teachers may still email the risk assessment to laboratory technicians to ensure that they are aware of it (it will also show up automatically on the scheduling screen).

In schools where laboratory technicians initiate the risk assessments, the scheduling screen is still useful to help co-ordinate preparation and to give a calendar view of upcoming risk assessments.

It is also possible to see a view of previous risk assessments by choosing “Last Week” from the “Show schedule for:” list. This window becomes available when you click any of the scheduling options.



### **Ways to Use RiskAssess at Your School**

Either the teacher or laboratory technician can create the risk assessment in RiskAssess. Both of them need to review and sign the risk assessment. As each risk assessment has fields for equipment and chemicals for preparation, scheduling details and notes, it also acts as a good communication tool between teachers and laboratory technicians. There are several recommended approaches for using RiskAssess effectively at your school.

#### *Paper Based (Good Starting Point)*

You may choose to print each risk assessment and have the teacher and laboratory technician sign it with a pen, and then file it. This is a good starting point, but takes additional time and paper.

You can use the “Print” button at the bottom of generated risk assessments to print directly from the web page. For high quality printing, click “Save / Print PDF” and then print from the PDF document. The “Email”, “Print” and “Save / Print PDF” buttons are at the bottom of the generated risk assessment, since they are generally used after reading the risk assessment (you may need to scroll down to see them).

	Email	Print	Save / Print PDF
You can enter multiple email addresses with ; between them.			

Note that using a paper based workflow still allows you to use the “Laboratory Scheduling” screen to see a day-by-day view of upcoming and previous practicals.

#### *Electronic Documents Stored on the RiskAssess System (Recommended)*

Using electronic documents saves time and paper. You can choose to sign the risk assessment electronically by clicking the “Sign Electronically” button.

##### **Certification by teacher**

I have assessed the risks associated with performing this experiment in the classroom on the basis of likelihood and consequences using the [School's risk-level matrix](#), according to Australia/New Zealand/International Organization for Standardization Standard AS/NZS ISO 31000:2009 and the Risk Management Guidelines, HB 436:2004. I have found that all the risks are "low risk". Risks will therefore be managed by "routine procedures" in the classroom.

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

##### **Certification by laboratory technician**

I have assessed the risks associated with preparing the equipment, chemicals and living organisms for this experiment and subsequently cleaning up after the experiment and disposing of wastes, on the basis of likelihood and consequences using the [School's risk-level matrix](#), according to Australia/New Zealand/International Organization for Standardization Standard AS/NZS ISO 31000:2009 and the Risk Management Guidelines, HB 436:2004. I have found that all the risks are "low risk". Risks will therefore be managed by "routine procedures" in the laboratory.

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Both the teacher and the laboratory technician need to sign each risk assessment. If the classroom component of the experiment has an inherent risk level of “high “ or “extreme”, additional approval is required from an “Authorised person”

##### **Approval by authorised person**

(An [authorised person](#), e.g. Head of Department or Principal, is required to approve the experiment when the inherent level of risk in the classroom is "high" or "extreme")

I note that the inherent level of risk for this experiment is "high" or "extreme". As an [authorised person](#), I approve this experiment, on the condition that the above control measures are put in place in the classroom.

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Usually, after creating a risk assessment, you would sign your part electronically. You then need to let the other person(s) know about the risk assessment so that they can review and sign it. There are two alternative approaches to do this:

1. Risk assessments are automatically included in the “Laboratory Scheduling” screen. This means that if teachers usually create the risk assessments, they do not need to tell the laboratory technicians about each one. Instead, laboratory technicians, who are using the “Laboratory Scheduling” screen, will see the risk assessments there, and can check and sign them (see “Laboratory Scheduling” above for more information”).
2. Alternatively, you can send the risk assessment by email to another person for checking and second (or third) electronic signing. For example, if laboratory technicians generally create the risk assessments, they can then email them to the appropriate teacher (or vice versa). The risk assessment can also be emailed to the authorised person, if required. When a person receives a risk assessment by email, it includes a hot link in the email to go directly to the risk assessment in the RiskAssess system, making it quick and easy to sign electronically.

When two electronic signatures (or three, in a case where the inherent risk is "high" or "extreme") have been attached to a risk assessment, the risk assessment is

automatically stored in the RiskAssess system as an archival electronic document in PDF format. It may not be further modified and is a valid document for legal purposes.

**RISK ASSESSMENT** Kwai High School

### Iron production

Written by: Philip Crisp    Commenced on: 20 Sep 2009    Expires: 20 Dec 2010

**Classes for which experiment is required**  
 Teacher: Philip Crisp (user code 1)    Year Group: 12 Chemistry    Room: Period: Date:  
 611 2 1/10/09

**Items to be prepared by science technician (user code 2)**  
 1 x DRY flower pot, terra cotta  
 iron oxide  
 aluminium turnings  
 magnesium ribbon  
 aluminium powder  
 sand

**Procedure or reference, including variations**  
 D&W, p48, Thermite reaction

**Chemicals to be used and produced**

<b>aluminium metal</b> (aluminium foil, aluminium turnings, aluminium sheet) Class: nc    PG: none <b>K-12</b> Users: 1,2,3,4,5 <i>Potential hazards</i> Harmless.	<b>Al</b> CAS: 7429-90-5
<b>aluminium metal powder</b> (aluminium powder) Class: 4.3    PG: II <b>7-12</b> Users: 1,2,5 <i>Potential hazards</i> Fine particles or turnings are flammable, burning with an intense flame; fine particles are toxic if inhaled into the lungs; otherwise non-toxic. Finely-divided aluminium reacts violently with metal oxides such as iron oxide ("thermite reaction") to form aluminium oxide and the corresponding metal. Reaction with easily-reduced metal oxides, such as lead oxide and copper oxide, is explosive and should not be attempted. The thermite reaction must be carried out with extreme care, and only by an approved teacher. Burning metal reacts explosively with water, carbon dioxide (e.g. from fire extinguisher) and chlorinated solvents.	<b>Al</b> UN: 1396    CAS: 7429-90-5 <i>Standard handling procedures</i> Store in tightly sealed container to prevent reaction with moisture and oxygen in air.
<b>iron</b> (iron metal, iron filings, iron powder, iron reduced, iron wire, iron nails, ferrum redactum) Class: nc    PG: none <b>K-12</b> Users: 1,2,3,4,5 <i>Potential hazards</i> Harmless.	<b>Fe</b> CAS: 7439-89-6

You can enter multiple email addresses with ; between them.

It is not necessary to print the electronic document, although we recommend you store a copy of the risk assessment on your computer as an additional back up. You can download the risk assessment by clicking the "Save/Print PDF" button, so you can move or copy the file to a subdirectory or folder for archival purposes.

To help you track which risk assessments have been signed electronically, different icons are used whenever risk assessments are listed:



Has not yet been signed electronically by all required parties and can be updated with "Author's Update".



Has been signed by all required parties, and can no longer be updated. It can still be re-used and customised using "Create Modifiable Copy".

**Long-term Storage of Risk Assessments**

Risk assessments are stored on the RiskAssess system in as secure a manner as we can arrange. RiskAssess operates from a server in Australia, with continuous backup to a server in the USA. Both servers are backed up by their providers. In addition, we carry out regular backups to a computer in Australia, which is also backed up. While we can give no legal guarantee that RiskAssess will preserve your data, we have made the system as secure and long-lived as we can. We will do our utmost to ensure long-term data storage, but we cannot legally warrant that RiskAssess will forever store your records. We recommend that you save your risk assessments on your own school system, as an additional backup.

**Contact the Team**

If you have questions or suggestions, please contact us.

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for technical issues and computer questions

<http://jamescrisp.org/contact/riskassesscontact/>