

RiskAssess User Guide

Background

Schools are legally required to conduct a risk assessment before each laboratory 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 for preparing the package of equipment and chemicals for the class, and then for disposing of these items 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. RiskAssess can be used on computers, iPads (and other tablets) and on smart phones (iPhone, Android, etc). RiskAssess can be accessed from home or from any location with an internet connection.

For student use, we have developed a new version of RiskAssess called Student RiskAssess. Student RiskAssess allows students to carry out risk assessments as required for the new Australian Curriculum for Science, for the International Baccalaureate, and for extended investigations (student-initiated experiments). For more information, see:

http://www.riskassess.com.au/info/student

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:	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).
Experiment name:	

Questions & Suggestions

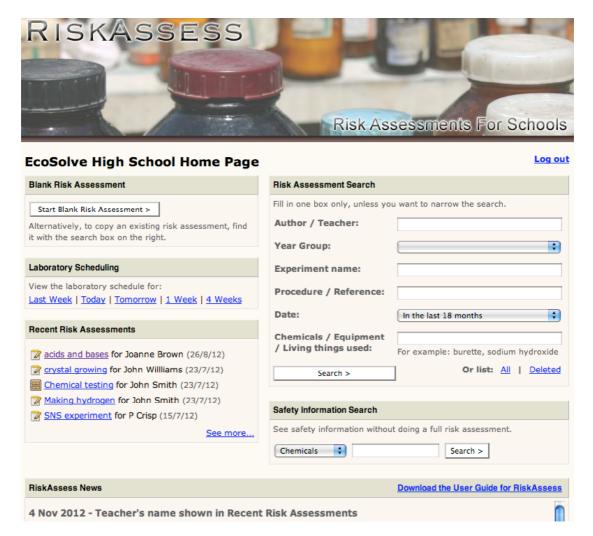
Please let us know if you have any questions or comments. We are always keen to receive any suggestions for ways to improve RiskAssess.

Dr Phillip Crisp for general discussion and feedback phillip@ecosolve.com.au +61 (0)2 9415 8677

James Crisp for technical issues and computer questions http://jamescrisp.org/contact/riskassesscontact/

Log In and Home Page

The RiskAssess log in (user name and password) relates specifically to your school campus. Any number of science staff from your school campus can use RiskAssess at the same time. Staff can log in to RiskAssess from any internet connection, whether it be at home, at school or elsewhere. Staff can use ipads and smart phones as well as computers and laptops to log in, as long as they are connected to the internet. Staff from other schools cannot view the risk assessments generated by your school campus.



When you first log in to RiskAssess, you will see the home page for your school campus. You can return to the home page at any time by clicking anywhere in the photo area.

Each risk assessment you perform will be saved on the RiskAssess system. The last five risk assessments performed at your school are shown in the "Recent Risk Assessments" box. The name of the teacher is shown next to the name of each experiment. If you would like to see the Author's name or more than the five recent risk assessments shown on the home page, click the "See more..." link in the "Recent Risk Assessments" box. You can also find risk assessments performed at your school using keywords in the "Risk Assessment Search" box on the right. See later section on Searching for Previous Risk Assessments for more details.

The "Laboratory Scheduling" provides a day-by-day view of experiments 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 later section on *Laboratory Scheduling* 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 generating a risk assessment.

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

Your First Risk Assessment

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:

Risk Assessme	nt and Practical Order
School:	EcoSolve High School
Author:	Phillip Crisp
Experiment name:	Making hydrogen
Text reference: (or procedure if no reference)	Science World 7, p.52 Cork to be used to trap hydrogen gas prior to "popping".

For the "Text reference", you can include links (such as http://intranet/lab.pdf or www.example.com/lab.pdf), and they will be automatically turned into clickable hotlinks in the resulting risk assessment. They will open in a new window when clicked. This is helpful if you are referring to experiments, MSDS's, etc on the web, or on your school intranet. Alternatively, you can write out a procedure in detail, refer to one of your standard procedures by name, or simply provide a reference to a text. You can also copy and paste text from another document into the box.

Classes for Which Experiment is Required Teacher: John Smith + Year group: 10 Teacher Lab Tech Chemical user codes: Explanation of codes 1 💠 2 💠 Room Period Date (d/m/yy) Scheduling: You can leave off the year 2 4 15/8/12 for classes in 2012 More classes

Next, you enter information about classes and preparation:

Please make sure the magnesium

2 x magnesium ribbon 1 x 1M hydrochloric acid (1M)

ribbon is not corroded.

8 aroups of

Qty x Item (or groups)

Scheduling notes:

for the laboratory technician

to be prepared by

For example 10 groups of:

Additional scheduling notes

Equipment / chemicals

laboratory technician:

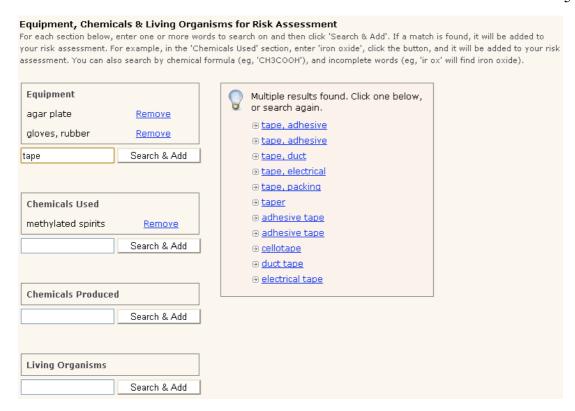
 $3 \times Mg$ ribbon, 2cm long $1 \times 50mL$ 1M HCl bottle

"Chemical user codes" are compulsory in NSW Government schools. The RiskAssess team recommends their use in all schools. If you click the "Explanation of codes" link, you will get further details about these codes. If you enter numbers into the boxes for the codes, RiskAssess 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. If you do not want to use this feature, do not enter any numbers in the boxes for the codes.

The "Scheduling" section allows you to specify when and where the experiment will take place. 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" allow communication of requirements between teacher and laboratory technician (see later section on 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:



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 using a lower-case chemical formula. 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.



When you have completed the form, read the "Conditions of Use" and 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 next image has been cut short to save space in the guide - it has further sections.

RISK ASSESSMENT			Eco	Solve High Scho
Maki	ing hydrogen	1		
Written by: Phillip Crisp Commenced on: 23 Ju	2012 Expires:	23 Oct 2013		
Classes for which experiment is required Feacher: John Smith (user code 1) Year Group:	10	Room	Period	Date
		2	4	Wed 15/8/12
		Please ma		nagnesium ribbon
Items to be prepared by laboratory technician (use	r code 2)			
3 groups of 2 x magnesium ribbon 1 x 1M hydrochloric acid (1M)				
Procedure or reference, including variations Science World 7, p.52 Cork to be used to trap hydrogen gas prior to "popping".				
Equipment to be used				
box of matches				
Potential hazards	Chandred hand			
		ling procedures		
Box burns violently if ignited.	Keep dry. Used box. Count box	matches shou		turned to the
Box burns violently if ignited.	Keep dry. Used	matches shou		turned to the
	Keep dry. Used	matches shou		turned to the
cork test tube rack	Keep dry. Used box. Count box	matches shou		turned to the
cork	Keep dry. Used box. Count box	matches shoules out and in.	ld never be re	turned to the
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cork test tube rack test tube, small (~75 x 8 mm), borosilicate ("p	Keep dry. Used box. Count box	matches shoules out and in.	ld never be re	s. Sweep up
test tube rack test tube, small (~75 x 8 mm), borosilicate ("p Potential hazards Breakage of test tubes. Cuts from chipped test-tube rims Small test tubes more likely to eject material during	Keep dry. Used box. Count box Dyrex") Standard hand is. Inspect and dis	matches shoules out and in.	ld never be re	s. Sweep up
test tube rack test tube, small (~75 x 8 mm), borosilicate ("p Potential hazards Breakage of test tubes. Cuts from chipped test-tube rims Small test tubes more likely to eject material during exothermic reactions.	Keep dry. Used box. Count box Dyrex") Standard hand is. Inspect and dis	matches shoules out and in. ling procedures card any dama ith brush and d	ged test tubes ustpan; do no	s. Sweep up
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test tube rack test tube, small (~75 x 8 mm), borosilicate ("p Potential hazards Breakage of test tubes. Cuts from chipped test-tube rims Small test tubes more likely to eject material during exothermic reactions. wooden splint Potential hazards When lit, it acts as ignition source; causes burns.	Neep dry. Used box. Count box Dyrex") Standard hand. Inspect and dis broken glass w Standard hand.	matches shoules out and in. ling procedures card any dama ith brush and dispersions of the control of the cont	ged test tubes	s. Sweep up ot use fingers.
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test tube rack test tube, small (~75 x 8 mm), borosilicate ("p Potential hazards Breakage of test tubes. Cuts from chipped test-tube rims Small test tubes more likely to eject material during exothermic reactions. wooden splint Potential hazards When lit, it acts as ignition source; causes burns.	Keep dry. Used box. Count box Dyrex") Standard hand dis broken glass w Standard hand Extinguish all t	matches shoules out and in. ling procedures card any dama ith brush and dispersions of the control of the cont	ged test tubes	s. Sweep up ot use fingers.
test tube rack test tube, small (~75 x 8 mm), borosilicate ("p Potential hazards Breakage of test tubes. Cuts from chipped test-tube rims Small test tubes more likely to eject material during exothermic reactions. wooden splint Potential hazards When lit, it acts as ignition source; causes burns. Chemicals to be used and produced hydrochloric acid solution, 0.2 M to 4 M (1% to	Keep dry. Used box. Count box Dyrex") Standard hand dis broken glass w Standard hand Extinguish all t	matches shoules out and in. ling procedures card any dama ith brush and dining procedures apers with wat	ged test tubes ustpan; do no er before dispo	s. Sweep up bt use fingers. psal. HCl(aq)

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 customise the risk assessment for an experiment taking place on a different day, or performed by a different teacher. Click "Create Modifiable Copy" for this situation. See the later section on Sharing and Customising Risk Assessments 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".

Knowledge				
∃ I have read and understood the potential hazards and standard handling procedures of all the equipment, chemicals and living organisms.				
∃ I have read and understood the Material Safety Data Sheets for all chemicals used and produced.				
∃ I have copies of the Materi	ial Safety Data Sheets of all the	e chemicals available in or near	the laboratory.	
Risk assessment				
I have considered the risks of:				
⊕ fire	→ breakage of equipment	electrical shock	radiation	
→ explosion	cuts from equipment	escape of pathogens	→ waste disposal	
→ chemicals in eyes	sharp objects	→ heavy lifting	inappropriate behaviour	
→ inhalation of gas/dust	→ rotating equipment	→ slipping, tripping, falling	⇒ special needs	
	\odot vibration and noise	→ falling objects	other risks	
	→ pressure	→ heat and cold		

Your personal knowledge, all the RiskAssess database information and the data included in each relevant chemical Material Safety Data Sheet (MSDS), 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 for preparing the package of equipment, chemicals and living things for the class, and then disposing of the items appropriately 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 own risk assessments.

The risk assessment follows the ISO Standard 31000:2009, Risk Management – Principles and Guidelines. 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.

It is recommended that your school obtain copies of ISO Standard 31000:2009 and the Risk Management Guidelines HB 436:2004, and that persons carrying out risk assessments be familiar with them. Copies of these documents may be obtained from your national Standards Organization.

The logic of the risk assessment process is as follows:

First of all, you assess the 'inherent level of risk' for an experiment, 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" to describe the inherent risk level.

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 you click the "routine procedures" link, you will be taken to a page containing some suggestions by the RiskAssess team for the sorts of routine procedures that your school might consider adopting. This page also includes a link to a page that describes procedures and issues relating to the safe culturing of microorganisms.

If the inherent risk is 'medium' or greater for either the classroom experiment or the preparation/cleanup, you need to enter control measures in the appropriate text box and you 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 will need to be put in place so that the risk level is reduced to 'low risk'. There are tick boxes available for commonly used control measures such as safety glasses, gloves etc. Both the teacher and laboratory technician should complete the certification section to state that the risk level has been reduced to 'low risk'. Both electronic signatures are required for RiskAssess to automatically archive the risk assessment. See the later section on *Archiving Risk Assessments* for more information.

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 matrix, according to International Organization for Standardization Standard 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:				
O Low risk Medium risk	• High risk	Extreme risk		
Control measures: Hold test tube away from body when por Explain possibility of test tube breakage Ensure students check test tubes for significant tubes.	and importance of safety gl			
safety glasses gloves Save Control Measures >	☐ lab coat ☐ apron	∏ fume cupbo	ard 🗌 demonstrat	ion
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:	Sign Electronically

If the classroom component of the experiment has a 'high' or 'extreme' level of inherent risk, additional approval will need to be obtained from an authorized person. Click on "authorized person" for details.

Approval by authorized person (An <u>authorized person</u> , 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 <u>authorized person</u> , I approve this experiment, on the condition that the above control measures are put in place in the classroom.				
Name:	Signature:	Date:	Sign Electronically	

As classroom experiments with a 'high' or 'extreme' level of inherent risk have the greatest potential to cause injuries, it is important that an authorized person check that adequate control measures have been put in place to reduce the risk level to 'low risk'. In this case, electronic signatures of the teacher, the laboratory technician and the authorized person are required, prior to the risk assessment being archived automatically. See the later section on *Archiving Risk Assessments* for more information.

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.

Signing of Risk Assessments

RiskAssess contains an electronic signing feature for use by both the teacher, and the laboratory technician (and the authorized person, if necessary). When you click the "Sign Electronically" button, a new box will appear. You should enter your full name into the appropriate box and refer to the note below the signature.



Should you decide not to use the electronic signature feature, you can always print the risk assessment (see later section on *Printing and Emailing Risk Assessments*), and sign the appropriate sections by hand.

Archiving Risk Assessments

RiskAssess has an automatic archiving feature. When two electronic signatures (or three, in a case where the inherent risk is 'high' or 'extreme' in the classroom) 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 (that is, a non-modifiable format) valid for legal purposes.

Keeping Track of Electronic Signing of Risk Assessments

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, can no longer be updated and has been automatically archived. It can still be customised using "Create Modifiable Copy". See later section on *Sharing and Customising Risk Assessments* for more details.

Printing, Emailing and Saving Risk Assessments

You can click the "Print" button at the bottom of a generated risk assessment to print directly from the web page. However, the quality of the printout will relate to your chosen browser. For consistently high quality printing, it is better to click "Save / Print PDF" and then print from the PDF document, which has been appropriately

formatted by the RiskAssess system. You can also save the PDF document to a subdirectory or folder on your school computer for back-up purposes (see later section on Long-term Storage of Risk Assessments).

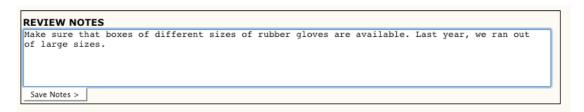
If you wish to email the risk assessment, enter the email address of the recipient in the appropriate box. If you wish to email the risk assessment to several people, enter the email addresses with a; between them. When a recipient receives a risk assessment by email, the email will include summary information about the risk assessment. This summary information shows up in the text of the email, so the recipient of the email can see more about the risk assessment without having to open the attached PDF file. The email also includes a link to the risk assessment in the RiskAssess system, making it quick and easy to sign electronically.

The "Email", "Print" and "Save / Print PDF" buttons are all 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).



Review Notes

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 the "Save Notes" button.



Each time you click the "Save Notes" button, the information entered here is stored with the risk assessment and is available whenever the risk assessment is viewed again (such as, for the review and update of the risk assessment the following year, or when another member of staff is customising the risk assessment for a different class).

Searching for Previous Risk Assessments

RiskAssess has a "Risk Assessment Search" box on your home page that allows you to search for a particular risk assessment created at your school. For example you can search for the risk assessment using the Experiment Name and the Teacher's name, or any other combinations of the categories of key words shown in the "Risk Assessment Search" box. You only need to enter one part of the Author's name. For example, if you type in 'Joe,' all risk assessments by 'Joe North' or 'Joe Smith' will be searched for. Once you click the "Search>" button, RiskAssess will produce a list of all relevant risk assessments. You can sort the results by clicking the column heading you wish to sort by. For example, click on the 'Date' heading to sort all of the search results in order from most recent risk assessment to oldest risk assessment. Clicking a second time on the column heading will reverse the sort (for example, from oldest to most recent). The arrow next to the column heading shows the direction of the sort. Click on the appropriate risk assessment to retrieve it.

The "Recent Risk Assessments" box is visible on the home page and contains the last five risk assessments that have been created at your school. You may retrieve a risk assessment from this list, by clicking on it. If you would like to see more than the five recent risk assessments shown on the home page, click the "See more..." link in the "Recent Risk Assessments" box.

You can obtain a list of deleted risk assessments by clicking on the "Deleted" link (see later section on *Deleting and Undeleting Risk Assessments*) in the "Risk Assessment Search" box. You can obtain a list of all risk assessments generated at your school by clicking on the "All" link in the "Risk Assessment Search" box.

Sharing and Customising Risk Assessments

You should generate a risk assessment for a particular experiment, in a given room, for a particular period and date. Should you want to repeat the same experiment at a different time or place, you should generate a new risk assessment with the appropriate details. You can do this easily through RiskAssess by clicking on the "Create Modifiable Copy" button. This new risk assessment will have all of the information that the old one had (except the scheduling information and Teacher field will be blanked). It can then be customised with any changes in procedure, the correct teacher 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 experiment you will be performing (that is, 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 created by yourself or other staff, to save you time. First, find the risk assessment you want to customise. See earlier section for *Searching for Previous Risk Assessments*. This can be an archived risk assessment, or one still in editable form (a risk assessment before all the appropriate electronic signatures have been added). 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.



You will then have your own editable copy of the risk assessment. All the fields will be the same as the original risk assessment, except those relating to the teacher and the scheduling information. These fields will be blank and will need to be customised with the appropriate information. You should review and further customise the risk assessment to suit your own experiment.

Deleting and Undeleting Risk Assessments

Occasionally, there is a need to delete a risk assessment, possibly due to scheduling difficulties or staff absences. Bring up on screen the risk assessment you wish to delete. When you click the "Delete" button at the top of the screen, a warning message appears asking if you really wish to delete this risk assessment. If you click "OK", the risk assessment will appear to be deleted. It will no longer show up on the recent risk assessment list, or in the laboratory scheduling. If for some reason you decide you would like to recover a deleted risk assessment, go to the home page and click the "Deleted" link in the "Risk Assessment Search" box to view a list of all deleted risk assessments. Click on the relevant risk assessment and it will be brought up on screen, with a message stating that it has been deleted. If you click the button "Undelete this risk assessment" (next to this message), the risk assessment will be recovered. It will again be visible and retrievable in the usual ways.

Special Issues for Schools without Laboratory Technicians

In some schools, there is no laboratory technician. In these cases, the teacher who is responsible for the preparation before the experiment and the disposal after the experiment, should sign the section labelled 'Certification by laboratory technician' as the teacher is fulfilling this role. Once both electronic signatures are attached, the risk assessment will be archived.

Special Issues for Laboratory Technicians

Laboratory technicians may wish to carry out risk assessments for activities, which relate to a number of laboratory classes, such as the preparation of dilute acid solutions. It is recommended that the title of these risk assessments include the words 'Standard procedure', such as 'Standard procedure: Preparation of dilute acid solutions'. These risk assessments can easily be retrieved by using the key words 'standard procedure' and the author's name in the "Risk Assessment Search" box. See earlier section on Searching for Previous Risk Assessments for more details. Since there is no classroom component for these activities, it is not appropriate for the teacher to sign the teacher's certification. Instead the laboratory technician should put N/A in the teacher's signature area, after clicking the "low risk" button. This way the risk assessment will be archived in the RiskAssess system in non-editable format.

Laboratory Scheduling

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



The laboratory scheduling screen is a day-by-day view of future experiments (up to 4 weeks, that is: 28 days from the current date) or last week's experiments (up to 7 days before the current date). 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.



In many schools, teachers prepare risk assessments and then email them to laboratory technicians for review, signing and preparation. Alternatively, laboratory technicians can view the scheduling screen and click the link to the risk assessments for review, signature and preparation. If laboratory technicians are checking the scheduling screen regularly, it is generally not necessary for teachers to email the risk assessments to them, or notify them by other means.

There is also a "Prepared?" tick box for each scheduled experiment. The tick box is designed to help laboratory technicians keep track of which experiments they have already prepared, and which still need preparation. The tick box also helps teachers by giving them a way to easily view that their experiment request has been received and prepared.

It can often be beneficial to have a 'cut-off time' for experiments to be lodged in RiskAssess (perhaps, one or two days before the experiment), to allow the laboratory technician time to prepare in advance, and get an accurate listing of future experiments. In rare cases where the 'cut-off time' has been missed, teachers may still email the risk assessment to the laboratory technician to ensure that the technician is aware of it (it will show up automatically on the scheduling screen). The time when the risk assessment is first lodged is automatically shown on the scheduling screen

(for example - Lodged: 15 Jul 2012, 10:09pm). This is useful to determine which person has ordered an item of equipment first.

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 future risk assessments.

The laboratory schedule can be printed by clicking the "Print" button on the appropriate laboratory schedule screen. If you would rather download the schedule into an excel file, click "Download for Excel (CSV)".

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 electronically sign the risk assessment for the assessment to be automatically archived (in cases when the inherent risk is 'high' or 'extreme' in the classroom, a third signature is required). 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 System (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.

Note that using a paper-based workflow still allows you to use the "Laboratory Scheduling" screen to see a day-by-day view of future and last week's experiments, if the information has been entered into RiskAssess.

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 (See Signing Risk Assessments in earlier section).

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 'Authorized person' (see *The Actual Risk Assessment* in earlier section).

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 earlier section on *Laboratory Scheduling* 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 authorized person, if required. The email includes a link, which when clicked, will retrieve the relevant risk assessment in the RiskAssess system, making it quick and easy to sign electronically.

When two electronic signatures (or three, in the cases where the inherent risk in the classroom is 'high' or 'extreme') have been attached to a risk assessment, the risk assessment is automatically archived. See earlier section on *Archiving Risk Assessments*.

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 (see later section on *Long-term Storage of Risk Assessments*). 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 storage purposes.

Student Risk Assessments

The Australian Science Curriculum and the International Baccalaureate require that students plan and conduct a range of their own experiments. Queensland science students currently carry out extended experimental investigations. The RiskAssess team recommends that schools following such programs purchase an additional subscription called Student RiskAssess to be used only by students. The student subscription has a different log in to the usual school subscription and, therefore, students would not have access to the risk assessments created by teachers and laboratory technicians. It has all the usual features of RiskAssess and has been customised for student use. For more information, see: http://www.riskassess.com.au/info/student

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 Japan. Both servers are backed up by their providers. In addition, RiskAssess data are backed up several times a day to storage services in Hong Kong and the USA, which are also themselves 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. We also recommend the use of archival CDs for long-term storage; those based on a gold/phthalocyanine chemistry may be the most durable.

Risk assessments should be backed up and stored according to your school policy. The RiskAssess team recommends that risk assessments be stored for the lifetime of

the people involved. The reason for this is that a Court of Law could waive the Statute of Limitations, in the event of chemical injuries such as cancers, which may take decades to become apparent.

Frequently Asked Questions

In case you are having any problems, check out the "Frequently Asked Questions" link on the webpage: http://www.riskassess.com.au/info/faq

Contact the Team

If you have any further questions or suggestions, please contact us.

Dr Phillip Crisp for general discussion and feedback phillip@ecosolve.com.au +61 (0)2 9415 8677

James Crisp for technical issues and computer questions http://jamescrisp.org/contact/riskassesscontact/

You can also click the link "Contact Us" at the bottom of every screen in RiskAssess.