

RiskAssess

Risk Assessment Tool for Science Laboratories including lab scheduling, prac ordering and GHS labelling

Schools are legally required to conduct risk assessments prior to experiments (HSW Act 2015) and label chemicals in "small containers" according to the GHS (HSW Regulation 2017)¹. More than 280 schools in New Zealand and 2250 in Australia subscribe to RiskAssess and have conducted over 6,500,000 risk assessments!

RiskAssess is a web-based system that makes performing risk assessments quick and easy. Using RiskAssess, schools can meet their legal obligations and make their science laboratories safer.

RiskAssess is customised for use by teachers and laboratory technicians and includes:

- an electronic template for risk assessments, following the NZ Standard on Risk Management
- GHS chemical safety information for more than 3,000 chemicals and solutions
- disposal advice for all chemicals and solutions
- safety information for equipment and living organisms
- laboratory scheduling system, including lab ordering
- GHS labelling system for pure chemicals and solutions
- hot-links to SDSs, documents, diagrams, websites . . .
- recording of inherent risk level and control measures
- easy sharing of experiment templates for customisation
- full text of eBook "Safety in Schools" (30 chapters; 250 p)
- use on computers, iPads, tablets and smart phones
- storage of risk assessments for legal purposes
- online help and learning resources
- complies with all New Zealand requirements
- training videos.

2 WEEK 2 WEEK FREE TRIAL FREE TRIAL FREE TRIAL FREE TRIAL Send Your school name to send Your school name to info@riskassess.co.nz

The cost of a year's subscription to RiskAssess is \$350.00 + GST per school campus. A subscription lasts 365 days from the date that payment is received and includes all upgrades during that period. Subscription to Student RiskAssess is also available for an additional \$350.00 + GST per school campus.

You can subscribe online at www.riskassess.co.nz or contact Phillip Crisp on +61 2 9415 8677 or info@riskassess.co.nz if you wish to discuss RiskAssess further.

¹Please see http://www. riskassess.co.nz/info/ legally_required for a summary of the legislation.

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RiskAssess

RiskAssess is an integrated web-based tool designed to assist school staff to create risk assessments in a standard printable format, specially customised for school laboratories.

Safety data about chemicals, equipment and living organisms are stored in RiskAssess. When you choose a chemical or other item, RiskAssess automatically incorporates safety information into the risk assessment. A series of simple prompts leads users through the system, making it easy to create risk assessments for each experiment.

Each risk assessment contains sections in which the teacher and laboratory technician separately certify that risks have been assessed for their particular area of responsibility. If the inherent level of risk is "medium" or above, control measures need to be entered; experiments with "high" or "extreme" level of inherent risk require approval by an authorised person. RiskAssess includes provisions for monitoring and for review in each risk assessment, as required by law. RiskAssess easily satisfies all New Zealand requirements.

RiskAssesss can also assist communication between teachers and laboratory technicians for planning and preparing experiments, and for laboratory scheduling. RiskAssess includes fields relating to the timetabling of the experiment and the items to be used. Both teachers and lab techs can access risk assessments through the lab scheduling system or, alternatively, risk assessments can be emailed.

Risk assessments can be printed, stored online, searched online, shared between staff, copied and archived for legal purposes. A paper-based or paperless work flow can be followed, depending on school policy.

All databases for chemicals, equipment and living organisms are regularly updated and extended. There have been many upgrades of RiskAssess including a laboratory scheduling system and the addition of GHS chemical information and solution data.

RiskAssess includes an easy-to-use chemical labelling system (GHS compliant) for >1600 pure chemicals and their common solutions, plus a custom labelling system for mixtures and commercial products.

User feedback assists the RiskAssess team in deciding which features to include in upgrades.

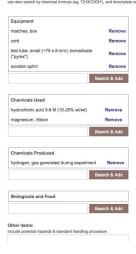
Our team invites feedback and contributions from users, so that the system can be improved. The RiskAssess team provides prompt and personal service, should you have any problems.

www.riskassess.co.nz

>> EXAMPLES **See below** for a screenshot of the RiskAssess software in use. **See right** for a sample risk assessment.

RiskAsses Tools for Safe Science	is
Risk Assessment and	I Practical Order
School:	EcoSolve High School
Author:	Phillip Crisp
Experiment name:	Making hydrogen
Text reference: (or procedure) Can include web links. Eg. http://www.example.com	Science World 7, p.52 Cork to be used to trap hydrogen gas prior to "popping".
Classes for Which Experimen Teacher: Year group:	Phillip Crisp
Chemical training codes: Explanation of codes	Teacher Lab Tech
Scheduling: You can leave off the year for classes in 2018	Room Pentod Date (dim/yr) 611 3 1/3/18 Image: State (dim/yr) 1/3/18 Image: State (dim/yr) 1/3/18 Image: State (dim/yr) 1/3/18
Scheduling notes: Additional scheduling notes for the laboratory technician	
	Qty x Item (or groups)

quipriment, similarities and biologicals for rush Assessment or each section below, enter one or more words to search on and then citic. "Search & Add. If a match is found, it will be added to your risk seesment. For example, in the "Chemicals Used" section, enter 'iron xolde', citick the button, and it will be added to your risk assessment. You



LEGAL NOTE

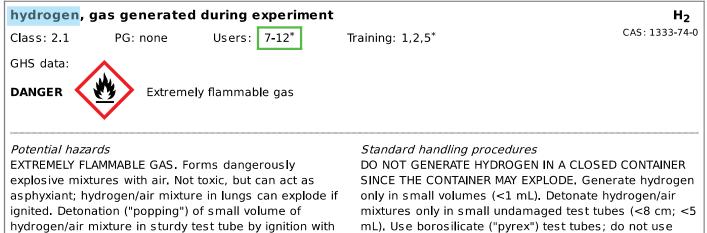
Teachers and lab techs carry out risk assessments on different activities. A teacher assesses activities in the classroom and a lab tech assesses activities before class and after class. Only the person carrying out an activity can take into account all the factors, including facilities available, student behaviour, students with allergies and students with special needs.

RISK ASSESSMENT	Making	hydrogen		EcoSo	lve High School
Written by: Phillip Crisp	-	iced on: 10 Jun 2	2018 E >	pires: 10 S	ep 2019
Classes for which experiment is requi		-		•	•
-	ear Group:	10	Room	Period	Date
			611	2	Wed 4/7/18
Items to be prepared by laboratory techni	cian (trainir	ig code 2)			
8 groups of 2 x magnesium ribbon, 2 cm 1 x 2M hydrochloric acid, bottle, 50 mL			Data entered b	y user naded.	
Procedure or reference, including vari Science World 7, p.52 Cork to be used to trap hydrogen gas prior to '			Data entered b are shown st are shown st All other text in automatic	hau nerate 5 generate ally by the ally by the ess system.	
Equipment to be used			RISK		
box of matches					
<i>Potential hazards</i> Box burns violently if ignited.		<i>Standard handlin</i> Keep dry. Used m box. Count boxes	atches shou		returned to the
cork					
test tube, small (~75 x 8 mm), borosil	icate ("pyr	ex")			
Potential hazards Breakage of test tubes. Cuts from chipped test rims. Small test tubes more likely to eject ma during exothermic reactions.		Standard handlin Inspect and disca broken glass with fingers.	ard any dama	aged test tub	
wooden splint					
Potential hazards When lit, it acts as an ignition source; may ca Possibility of splinters, especially if damaged.		<i>Standard handlin</i> Extinguish all tap			posal.
Chemicals to be used					
hydrochloric acid 3-8 M (10-25% wt/wt	:)				HCI _(aq)
Class: nc PG: none Users: 7-1	_	ining: 1-5			CAS: 7647-01-0
GHS data: WARNING Causes serious eye Causes skin irritation	irritation	J			
Potential hazards Irritates eyes, lungs and skin.		<i>Standard handlin</i> Avoid inhalation c			
magnesium, ribbonClass: 4.1PG: IIIUsers: 7-12*	Train	ing: 1-5		UN: 1869	Mg CAS: 7439-95-4
GHS data: DANGER In contact with water re-	eleases flamı	mable gases whicl	n may ignite	spontaneous	ily
Potential hazards Burns with white-hot flame; UV radiation emitt flame may cause eye damage; do not allow st view flame from close distance. Reaction with may be violent after a long induction period. R magnesium with dichromate salts, nitrate salt	tudents to ethanol Reactions of	<i>Standard handlin</i> Keep containers t			corrosion.

phosphorus or halogenated solvents can be dangerously violent. Reaction of magnesium with silica (sand) to form silicon may be dangerously exothermic if the silica is not completely dry. Do not use magnesium as an alternative to aluminium in the thermite reaction; the reaction is dangerously explosive. Magnesium ribbon can, however, be used as a fuse for the thermite reaction.

match or wooden taper is generally safe; breakage of

Chemicals to be produced



Knowledge

I have read and understood the potential hazards and standard handling procedures of all the equipment, chemicals and biological items, including living organisms.

thin-walled soda glass test tubes. Protect against flying

Date:

broken glass from breakage of test tubes.

I have read and understood the (Material) Safety Data Sheets for all chemicals used and produced. I have copies of the (Material) Safety Data Sheets of all the chemicals available in or near the laboratory.

Risk assessment

test tube is possible.

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	s lipping, tripping, falling	allergies
chemicals on skin	vibration and noise	falling objects	special needs
runaway reaction	pressure	heat and cold	other risks

Certification by Teacher

Name:

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 31000:2018.

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

Signature:

Low risk	Medium risk	High risk	Extreme risk		
Control me	easures:				
Explain pos Ensure stu	-	breakage and i bes for signs of	mportance of safety glasses. f damage before popping.		
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.					

Certification by Laboratory Technician

I have assessed the risks associated with preparing the equipment, chemicals and and biological items, including 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 matrix, according to International Organization for Standardization Standard ISO 31000:20¹⁸.

Low risk	Medium risk	High risk	Extreme risk		
Risks will the	refore be manage	d by routine pr	ocedures in the laboratory	y.	
Name:		Sig	nature:	Date:	
Monitoring	and review				
This risk asso certification.	essment will be m	nonitored using	comments below and will	l be reviewed within 15 months from the date	of
				Attach further pages as requi	ired

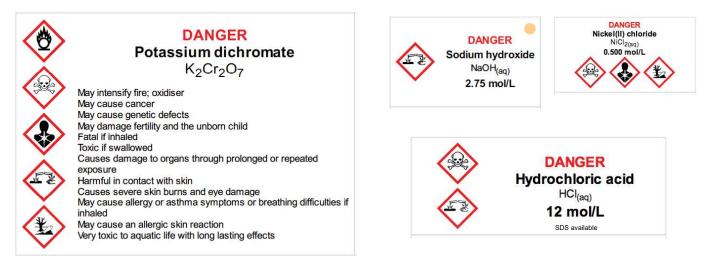
Laboratory scheduling

Laboratory technicians can use the scheduling screen to see future and past experiments, and keep track of those they have prepared. Experiments occurring today, tomorrow, this week, next four weeks, last week or any dates can be viewed. Other features include a check box to show that an experiment has been prepared, a prep note box, summary details, and a hotlink to provide easy access to the original risk assessment. Teachers can use the scheduling screen to access risk assessments, view any equipment conflicts and to check that an experiment has been prepared. Rescheduling of an experiment is arranged with a click of a button. Experiments for any date range can be downloaded in CSV format for further processing in Excel.

Wednesday, 4 July 2018						
Period	Room	Year	Teacher	Experiment & Procedure	Prepared?	
Save No	611 e Mg ribbon. ote > 5 July 2018	10	Phillip Crisp	 Making hydrogen Science World 7, p.52 Cork to be used tc trap hydrogen gas prior to "popping". Lodged: 10 Jun 2018, 3:21pm 	D	
Period	Room	Year	Teacher	Experiment & Procedure	Prepared?	
1 Add Prep	436 Note	11 Chemistry	Eva Crisp	Crystal growing Science World p45 Lodged: 10 Jun 2018, 3:26pm		

GHS labelling

A simple labelling system allows laboratory technicians to produce GHS-compliant labels in four sizes for 1600 pure chemicals and their common solutions. Just enter the name of the chemical and the concentration (if it is a solution), then click "Download labels" for a perfect A4 sheet of labels that you can print on sticky label sheets in Avery sizes or print on paper and cut out! Options are available for custom labels for commercial products, colour spots, and "SDS available".



Learning resources

www.riskassess.co.nz/info/learning_resources

• THE BOOK: "Safety in Schools" by Phillip Crisp

- full text of 30 chapters of training book (250 pages), covering many important topics in schools. Now available for download as an eBook for use by staff and students at schools subscribing to RiskAssess.

FREE RESOURCES

- Routine safety procedures
- recommendations for routine laboratory requirements
- Safe culturing of microorganisms
- general advice
- Proforma for creating a chemical register
- a starting point for you to create your own in Excel
- Legal requirements for schools to perform risk assessments
- current legal requirements for New Zealand
- Risk assessment and control of risks
- explanation of the logic and the process
- free chapter from "Safety in Schools" book
- Inherent level of risk
- definition and explanation
- · School's risk matrix: assessing the severity of risk
- see various risk matrices currently in use
- Globally Harmonised System of Chemical Classification and Labelling
- explanation of GHS and the GHS solution data
- Presentations on risk assessment
- Powerpoint files for you to use