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Workplace Chemical Management

-What is Practical?

Gary Chaplin
Associate Director
Occupational Health and Safety Unit

OH&S Awards 4th place

3rd place

2nd place

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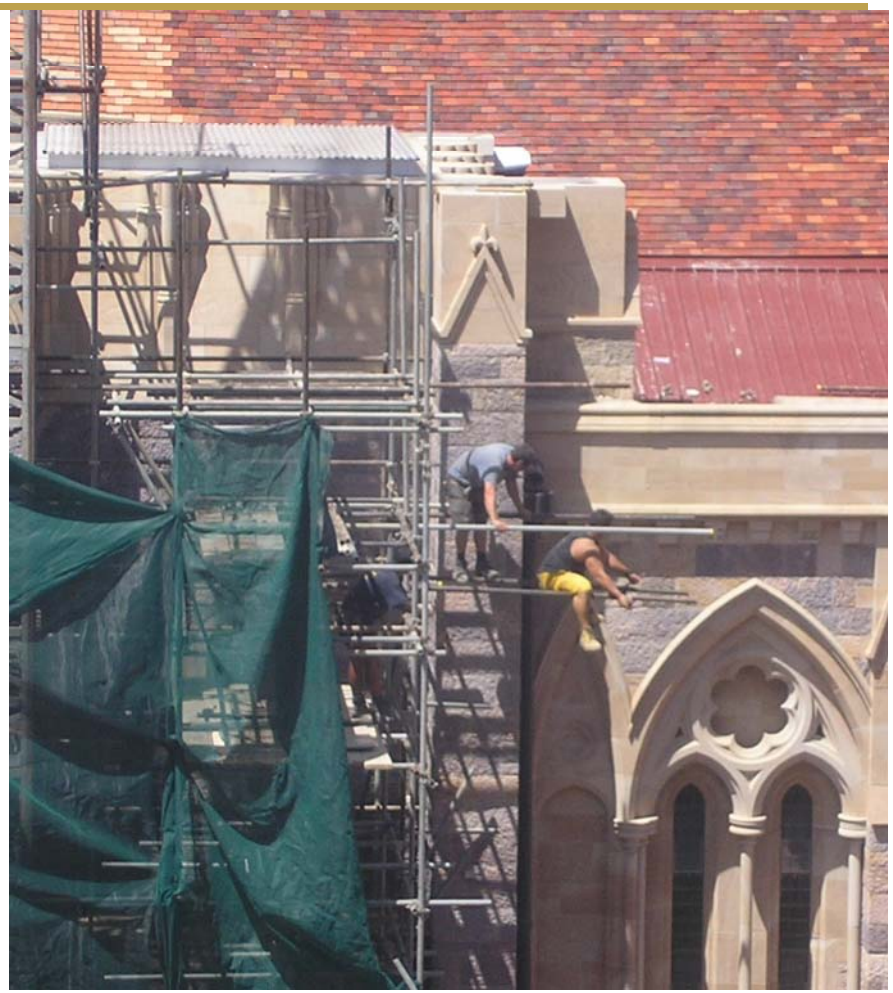

Ann Street, Brisbane 13:45, 14 January 2005

And the winner is!!

Overview

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- Brief discussion on myriad of legislative requirements
- Differences between dangerous goods and hazardous substances
- Examples of incidents and the realities of a chemical management system for a large organisation
- Discussion/Questions

Workplace Chemical Management

Legislation and Standards

- NT Dangerous Goods Act and Regulations
- NT Workplace Health and Safety Act
- Hazardous Substances under Division 5 of the NT Workplace Health and Safety Regulations
- National Code of Practice for Management of Hazardous Substances at a workplace
- National Standard for Handling of Workplace Dangerous Goods


Body Glove

Workplace Chemical Management

Legislation and Standards (cont)

- National Codes for labelling and classifying hazardous substances and preparation of MSDS's
- ADG for Transport by road and rail
- IATA for Air transport
- AS 1940 Flammable liquids
- AS 3780 Corrosive substances
- AS4452 Toxic substances
- AS 2243 Safety in Laboratories-
- and the list goes on????????

Dangerous Goods

- NT Dangerous Goods Act Oct 2009
- Div 5 NT Dangerous Goods Regulations Jan 2010
- National Standard for the Storage and handling of Dangerous Goods 2001
- Goods that are named in Column 2 appendix 2 of the ADG Code
- Now Part 2 of ADG 07 ?
- Licenses required if storage is above the thresholds of DG Regulations

Dangerous Goods (cont)

- Placarding required under schedule 1 of National Standard
- Manifests and emergency preparedness also under schedule 1 of National Standard
- Storage amount threshold for manifests similar to manifest requirements under Qld DGSM Act

The Big Red Box

- Manifests also required under Qld DGSM Act
- Must be kept in Red HAZMAT box at each entrance to facility
- UQ HAZMAT box broken into multiple occasions
- Possible breaches of Security Sensitive Biological Agents and Chemicals of Security Concern??

UQ Explosion Incident

- Boxes of chemicals 30 years old found in office after researcher deceased
- During inspection a bottle of Picric acid found with 20 gms dry acid remaining with metal lid
- Minerals and Energy explosives experts called
- Substance too dangerous to move from site and ordered detonated on site
- Detonation occurred at St Lucia Brisbane Campus

Hazardous Substances

- Classified under Div 5 of the NT WH&S Regulations Jan 2010
- Definition is from National Occupational Health and Safety Commission(NOHSC)
- Specified responsibilities for Suppliers
- Duties to provide information on Hazardous substances by Employers

Suppliers

- Produce Material Safety Data Sheets (MSDS)
- Ensure MSDS is provided at first supply
- Ensure appropriate labelling
- Provide any other information including NICNAS report to employer if requested

Employers

- Obtain MSDS from Supplier
- Does this mean hard copy??
- Ensure MSDS availability to any worker who may be exposed to the substance
- Ensure all containers adequately labelled
- Keep Hazardous Substances register
- Maintain health surveillance program for any worker exposed to substances in Schedule 8

Chemical Management Program

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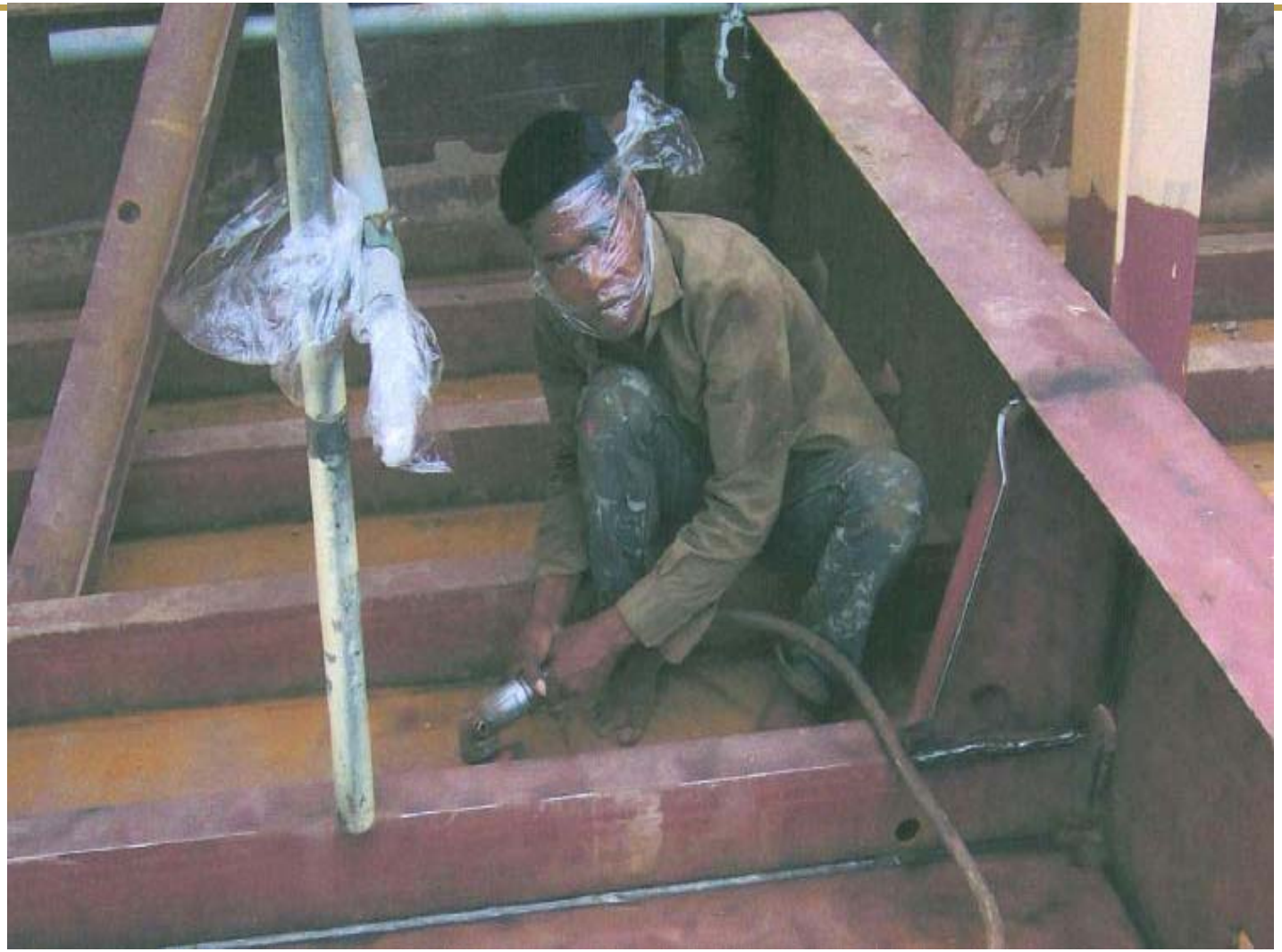
- 16,000 staff on payroll
- 40,000 “visitors” per day
- 1700 individual registered laboratories with 300 more coming on line
- Chemical manifest for 2009 showed over 300,000 packages of chemicals on site
- Approximately 35,000 different substances

Chemical Management Program

- Hazardous Substances and Dangerous goods tracking system
- Tracks all “chemicals” at purchase
- Used to generate DG manifest and hazardous substances register
- Electronic updated copies available for emergency services
- Use of web based MSDS system that relies mostly on “third party” developed MSDS’s

Chemical management program

- Web based electronic chemical risk assessment system
- Again used for both dangerous goods and hazardous substances
- Emphasises risk analysis for chemical usage as opposed to chemical storage
- Available for all staff to see risk analysis and methodology used
- Importance of emergency preparedness and competency in safety equipment ie how do you use a safety shower?
- Generic chemical risk analysis included in system to assist workers



Risk Management: Chemical Risk (Chemical Identification) - Windows Internet Explorer

https://www.risk.admin.uq.edu.au/frmChemOne.asp?

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Risk Management: Chemical Risk

Version: p10.0507a

User: Gary Chaplin

Logout

Chemical ID | Hazard Info | Exposure Info | Risk Determination | Risk Control

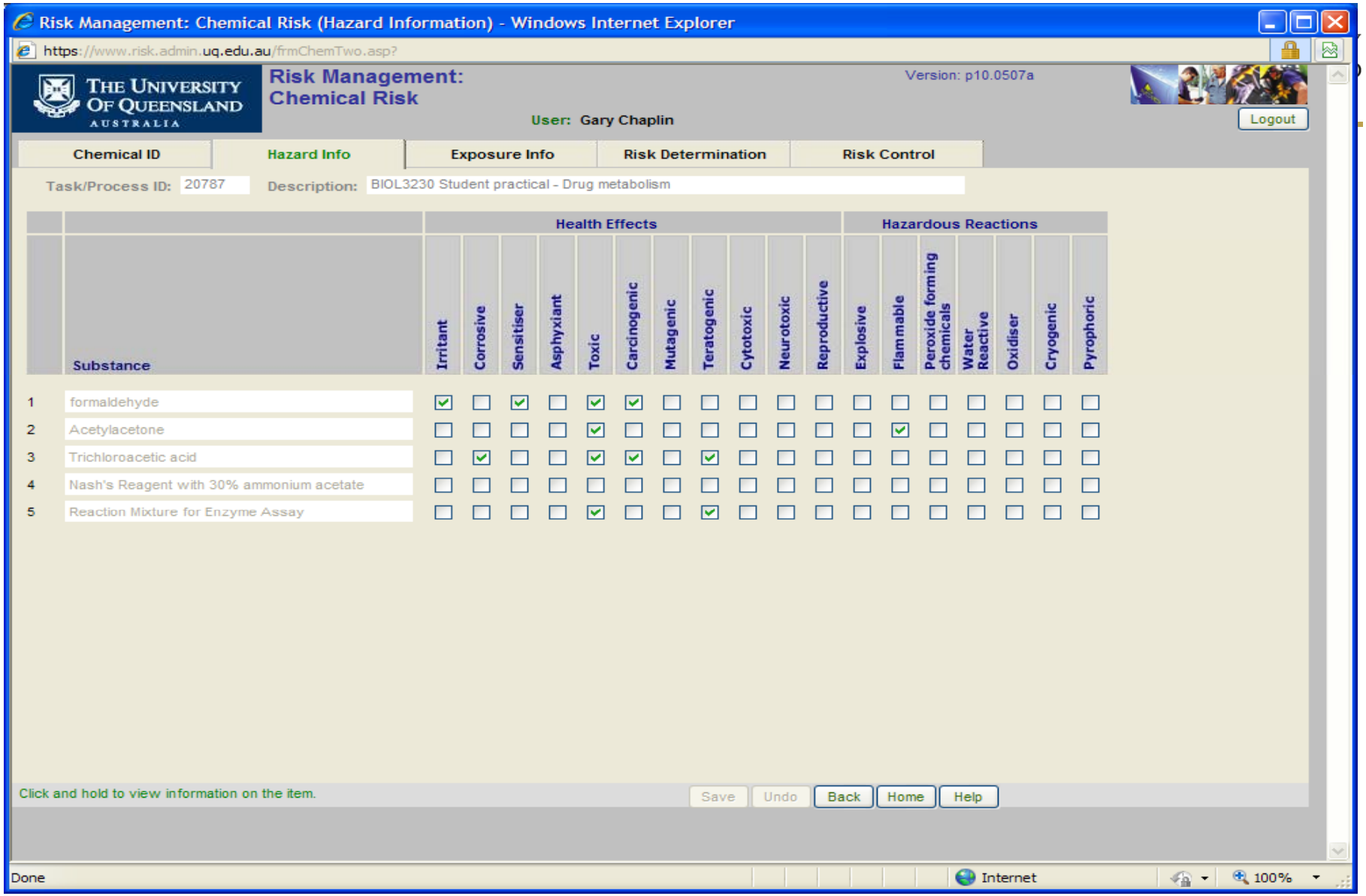
Task/Process ID: 20787 Description: BIOL3230 Student practical - Drug metabolism

	Substance	UN Nmbr	Form	Conc	Hazardous Substance?	Dangerous Goods Class
1	formaldehyde	3334	liquid	6.5%	yes	8 - Corrosive
2	Acetylacetone	2310	liquid	4%	yes	3 - Flammable liquid
3	Trichloroacetic acid	1839	liquid	12.5%	yes	8 - Corrosive
4	Nash's Reagent with 30% ammonium acetate	none	liquid	100%	no	n/a
5	Reaction Mixture for Enzyme Assay	none	liquid	100%	yes	6 - Toxic or infectious

Add Substance Delete Substance

Click and hold to view information on the item.

Save Undo Back Home Help


Risk Management: Chemical Risk (Hazard Information) - Windows Internet Explorer
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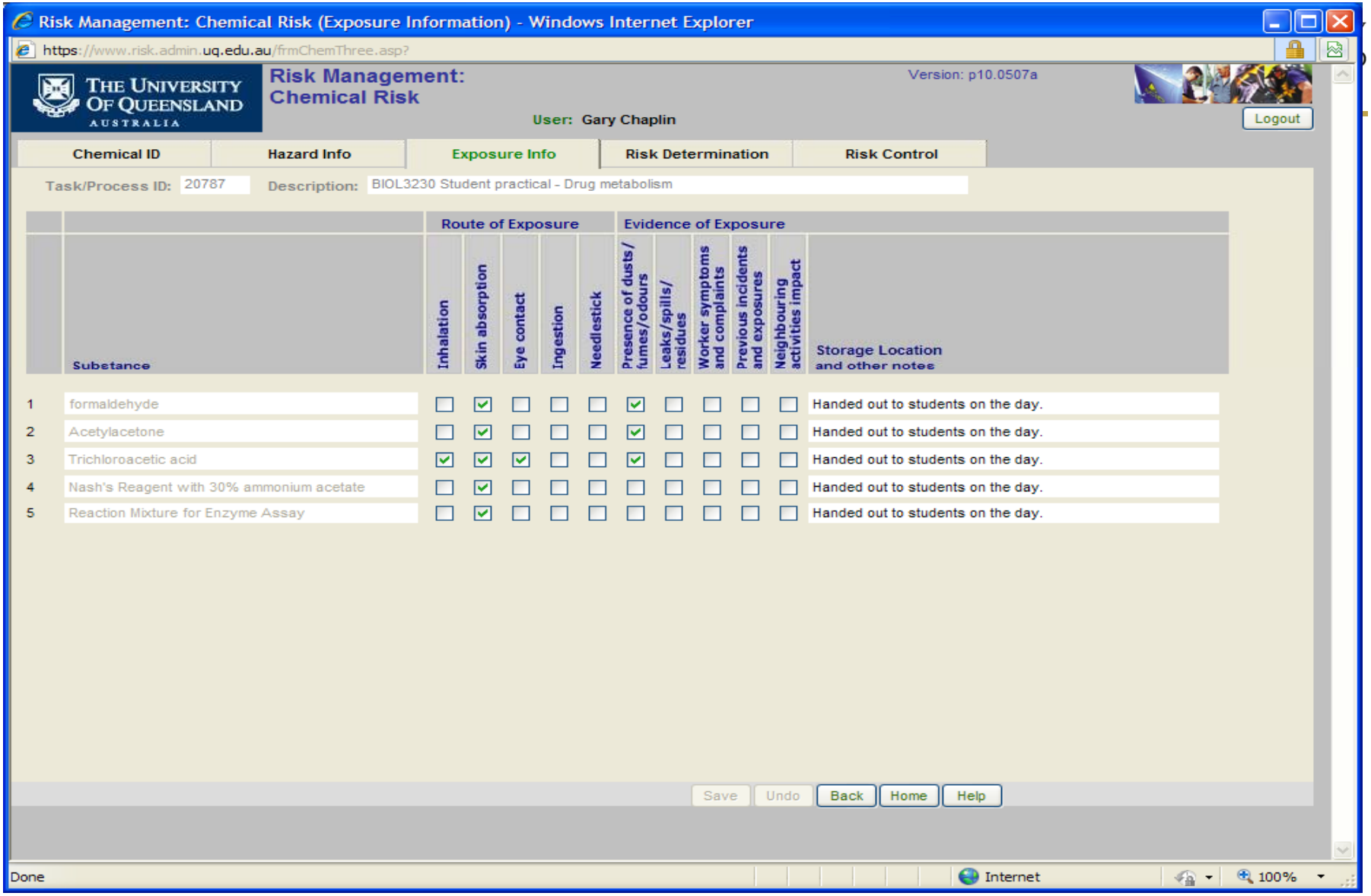
Risk Management: Chemical Risk
Version: p10.0507a
User: Gary Chaplin
Logout
Chemical ID
Hazard Info
Exposure Info
Risk Determination
Risk Control
Task/Process ID: 20787
Description: BIOL3230 Student practical - Drug metabolism
Health Effects
Hazardous Reactions
Substance
Irritant
Corrosive
Sensitiser
Asphyxiant
Toxic
Carcinogenic
Mutagenic
Teratogenic
Cytotoxic
Neurotoxic
Reproductive
Explosive
Flammable
Peroxide forming chemicals
Water Reactive
Oxidiser
Cryogenic
Pyrophoric
1 formaldehyde
2 Acetylacetone
3 Trichloroacetic acid
4 Nash's Reagent with 30% ammonium acetate
5 Reaction Mixture for Enzyme Assay
Click and hold to view information on the item.
Save
Undo
Back
Home
Help
Done
Internet
100%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Risk Management: Chemical Risk
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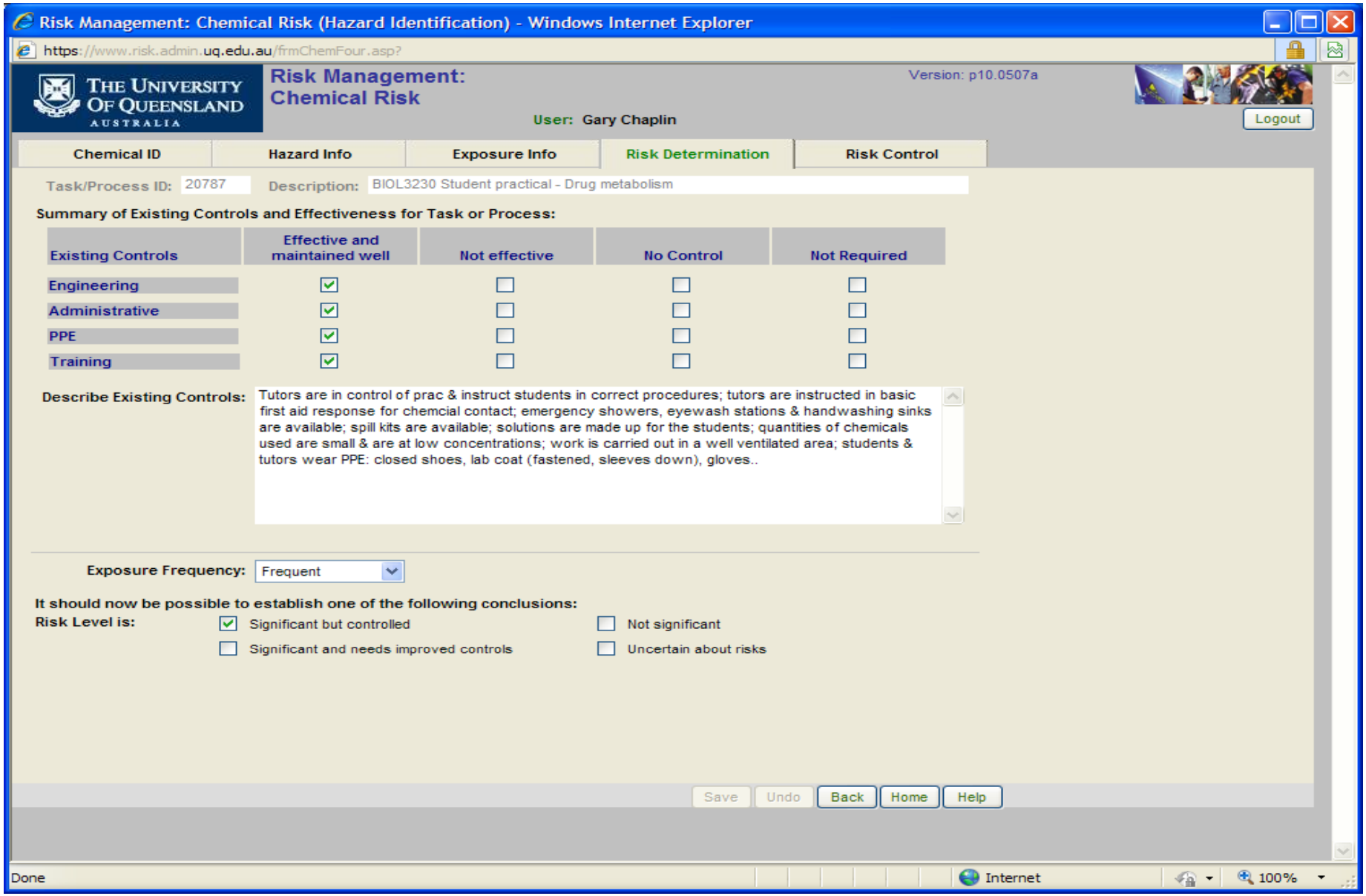
Logout
Chemical ID
Hazard Info
Exposure Info
Risk Determination
Risk Control
Task/Process ID: 20787
Description: BIOL3230 Student practical - Drug metabolism
Route of Exposure
Evidence of Exposure
Substance
Inhalation
Skin absorption
Eye contact
Ingestion
Needlestick
Presence of dusts/ fumes/odours
Leaks/spills/ residues
Worker symptoms and complaints
Previous incidents and exposures
Neighbouring activities impact
Storage Location and other notes
1 formaldehyde — Handed out to students on the day.
2 Acetylacetone — Handed out to students on the day.
3 Trichloroacetic acid — Handed out to students on the day.
4 Nash's Reagent with 30% ammonium acetate — Handed out to students on the day.
5 Reaction Mixture for Enzyme Assay — Handed out to students on the day.
Save
Undo
Back
Home
Help
Done
Internet
100%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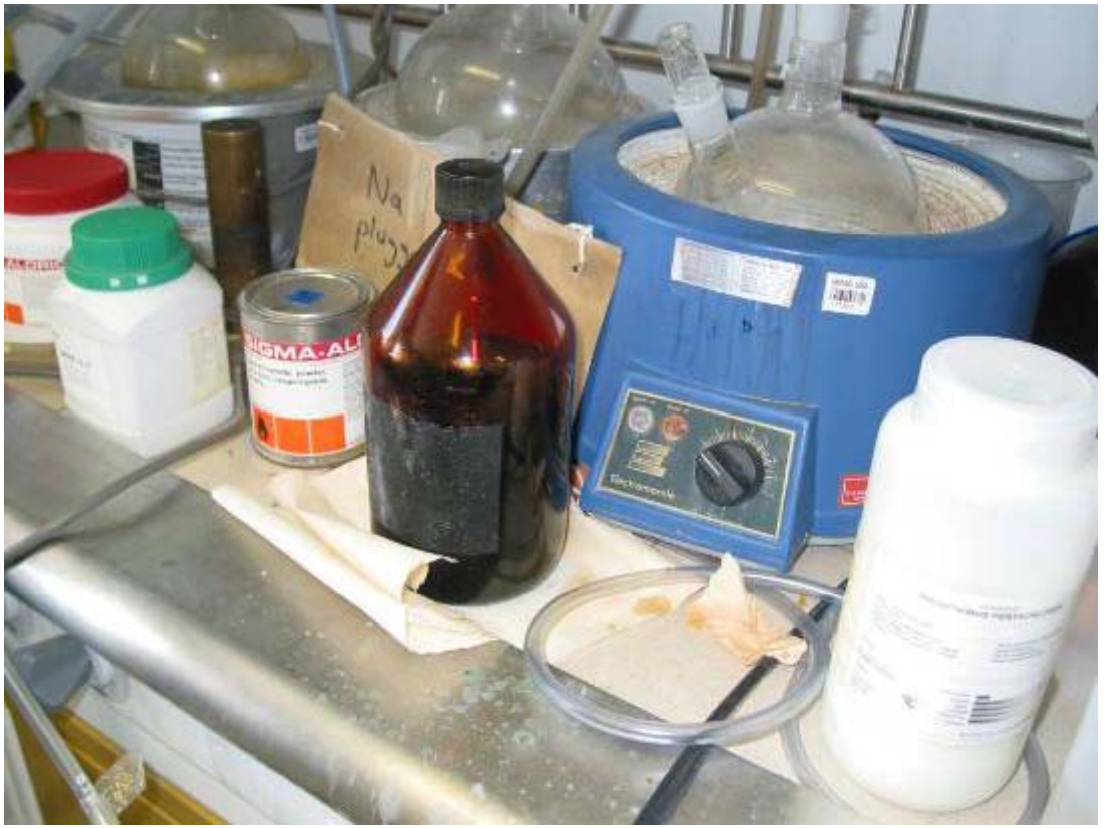
Version: p10.0507a
User: Gary Chaplin
Logout
Chemical ID
Hazard Info
Exposure Info
Risk Determination
Risk Control
Task/Process ID: 20787
Description: BIOL3230 Student practical - Drug metabolism
Summary of Existing Controls and Effectiveness for Task or Process:
Existing Controls
Effective and maintained well
Not effective
No Control
Not Required
Engineering
Administrative
PPE
Training
Describe Existing Controls:
Tutors are in control of prac & instruct students in correct procedures; tutors are instructed in basic first aid response for chemcial contact; emergency showers, eyewash stations & handwashing sinks are available; spill kits are available; solutions are made up for the students; quantities of chemicals used are small & are at low concentrations; work is carried out in a well ventilated area; students & tutors wear PPE: closed shoes, lab coat (fastened, sleeves down), gloves..
Exposure Frequency:
Frequent
It should now be possible to establish one of the following conclusions:
Risk Level is:
Significant but controlled
Not significant
Significant and needs improved controls
Uncertain about risks
Save
Undo
Back
Home
Help
Done
Internet
100%


Na
plugs

Conclusion

- Multiple legislative layers make full compliance difficult at best
- Chemical management systems may be simpler for small to medium enterprises but it is harder for these enterprises to obtain competent advice on risk assessments
- Some requirements such as DG manifests may have limited value to emergency services
- Option of electronic systems may be suitable for large employers but cost effectiveness needs to be considered
- Discussion/Questions???????