

## Risk Assessment for task or process

<b>Date:</b> 20 Feb 2005	<b>School / Dept:</b> BMSF	<b>Assessment completed by:</b> Martin Bucknall	<b>Contact No.:</b> X51995 Or Mobile 0402 445 972
<b>What is the task?</b> Hydrolysis of Plasma Proteins		<b>Location where task is being conducted:</b> BMSF M304 Bldg C27	
<p><b>Briefly explain the procedure for this task</b> (incl. Ref to other procedures)</p> <p>Proteins are precipitated from human plasma samples using Acetone/HCl precipitation with centrifugation. The pellet obtained is acetone washed, then dried under reduced pressure. Waters/Eldex hydrolysis containers which have ported Teflon screw caps, are prepared for use by the addition of concentrated HCl and phenol. Sample tubes containing the protein pellets are placed inside the hydrolysis containers using tweezers. The hydrolysis containers are then capped, then repeatedly evacuated and flushed with nitrogen. Finally the containers are evacuated and placed in a hydrolysis oven at 110 Degrees Celsius for 24 to 72 hours. Upon completion of hydrolysis, the containers are allowed to cool, then vented to atmosphere and uncapped. Sample tubes containing hydrolysed are removed with tweezers and evaporated under reduced pressure to remove excess HCl. Sample tubes are sealed under nitrogen and stored in a dessicator.</p>			

Step in Process	Hazards in carrying out this step eg.	Risk (Harm) eg	EXISTING CONTROLS	Risk Rating with existing controls? <i>See next page</i>			ADDITIONAL CONTROLS REQUIRED	Risk Rating with additional controls?		
				consequences	Likelihood	rating		consequences	likelihood	rating
List major steps or tasks in process eg – Blood collection – Centrifugation – Loading truck – Stacking shelf	– Noise – Dust/fumes/Vapours etc. – Heat/cold – Electrical – Moving Parts	– Electric shock – Eye infection – Fire / explosion – Physical injury – Cut / graze – Chemical burn	List all current controls that are already in place or that will be used to undertake the task eg – List of Personal Protective Equipment (PPE) – Identify types facility, location – Existing safety measures – Existing emergency procedures	3	D	M	Additional controls may be required to reduce risk rating eg – Greater containment (PC2) – Additional PPE – gloves safety glasses – Specific induction / training			
Aliquot human plasma	Biohazard	Infection	Wear Goggles, Labcoat, Gloves, perform procedure in fume hood	3	D	M	Enforcement of existing controls			
Prepare solution of HCl in Acetone and aliquot into sample tubes	Chemical	Physical injury from HCl burns	Wear Goggles, Labcoat, Gloves, perform procedure in fume hood	3	D	M	Enforcement of existing controls			

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Cool and centrifuge sample tubes	Chemical Moving parts	Eye splash of HCl solution. Mechanical hazards of using centrifuge, cuts from broken glass.	Wear Goggles, Labcoat and Gloves	3	E	M	Enforcement of existing controls			
Remove supernatants	Chemical	Eye splash HCl solution	Wear Goggles, Labcoat, Gloves, perform procedure in fume hood	3	E	M	Enforcement of existing controls			
Evaporate under reduced pressure	Chemical Moving parts	Eye splash HCl solution. Mechanical injury from speedivac apparatus. Finger and Hand injuries	Wear Goggles, labcoat, Gloves. Note and report any irregularities in the function/operation of the speedivac. Ensure Speedivac rotor is balanced. Do not open Speedivac lid whilst rotor is turning. <b>Note</b> Speedivac has the inherent danger of <b>NO LID LOCK</b> whilst moving!	3	C	H	Speedivac needs Lid lock repairing / fitting  Enforcement of existing controls	3	E	M
Make solution of Phenol in HCl and Aliquot into Hydrolysis containers	Chemical	Eye splash. HCl burns to other parts of body	Wear Goggles, Labcoat, Gloves, perform procedure in fume hood	3	D	M	Enforcement of existing controls			
Evacuate / Flush containers	Mechanical	Broken glass injuries / HCl burns	Wear Goggles, Labcoat, Gloves.	3	D	M	Would be better performed in hood, but vacuum apparatus is not well located for this.  Enforcement of existing controls			

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Place containers in oven 110 Celsius	Chemical Broken glass Heat burns	That tubes explode in the oven, heat burns, cuts, HCl burns	Wear Goggles, Labcoat, Gloves	3	D	M	Heat oven only when tubes in place, cool oven before opening	2	E	L
Cool containers, remove tubes	Chemical, heat	Burns, HCl burns	Wear Goggles, Labcoat, Gloves, perform procedure in fume hood	3	E	M				

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*Please complete if any of the items below are applicable.*

<i>Is there a requirement for safe storage?</i>
<i>How is access prevented except to authorised persons?</i>
<i>In the event of an emergency you will..... (include first aid provisions, procedure if spills/leaks/accident/fire/injury</i>

<b>OTHER ACTION REQUIRED TO ENSURE THE SAFETY OF PERSONS INVOLVED, EQUIPMENT, ENVIRONMENT, MEMBERS OF THE PUBLIC</b>

***The task should not proceed if the risk rating after the controls are implemented is still either HIGH or EXTREME.***

Supervisor or designated officer Sign off: \_\_\_\_\_ Date: \_\_\_\_\_

Name: \_\_\_\_\_ Contact No. \_\_\_\_\_

# Risk Rating extract from Appendix E: AS 4360 –1999 Risk Management

The severity of a risk is established by assessing the consequences of the risk and its likelihood of occurring.

## Consequence

Level	Descriptor	Example detail description
1	Insignificant	No injuries, low financial loss
2	Minor	First aid treatment, on-site release immediately contained, medium financial loss
3	Moderate	Medical treatment required, on-site release contained with outside assistance, high financial loss
4	Major	Extensive injuries, loss of production capability, off-site release with no detrimental effects, major financial loss
5	Catastrophic	Death, toxic release off-site with detrimental effect, huge financial loss

## Likelihood

Level	Descriptor	Description
A	Almost certain	Is expected to occur in most circumstances
B	Likely	Will probably occur in most circumstances
C	Possible	Might occur at some time
D	Unlikely	Could occur at some time
E	Rare	May occur only in exceptional circumstances

## Risk Rating

Likelihood	Consequence				
	Insignificant 1	Minor 2	Moderate 3	Major 4	Catastrophic 5
A (almost certain)	<b>H</b>	<b>H</b>	<b>E</b>	<b>E</b>	<b>E</b>
B (likely)	<b>M</b>	<b>H</b>	<b>H</b>	<b>E</b>	<b>E</b>
C (possible)	<b>L</b>	<b>M</b>	<b>H</b>	<b>E</b>	<b>E</b>
D (unlikely)	<b>L</b>	<b>L</b>	<b>M</b>	<b>H</b>	<b>E</b>
E (rare)	<b>L</b>	<b>L</b>	<b>M</b>	<b>H</b>	<b>H</b>

## LEGEND

**E**xtrême risk; immediate action required

**H**igh risk; senior management attention needed

**M**oderate risk; management responsibility must be specified

**L**ow risk; manage by routine procedures