

Science Practical Risk Assessment

School of Maths & Science	Practical Activity Title	Preparation and Purification of 4-methyl benzenecarboxylic acid (MAS_SP_2513_preparation_of_methylbenzenecarboxylic_acid)		Risk Assessment No. MAS_RA_2513_preparation_of_methylbenzenecarboxylic_acid	
Location	Chemistry Labs. NB236 / 237			Revision level: 1	
Assessment Performed By	Samantha Oxley	Signature:		Date:	25 Sep 2009
Supported By	Gareth John	Signature:		Date:	25 Sep 2009
Approved By	Kelly Gay (H.o.S.)	Signature:		Date:	25 Sep 2009
Date of Re-assessment (if necessary)	Re-assess if any changes to procedure or equipment / chemicals are made.				

HAZARDS TO BE CONSIDERED	WHO MIGHT BE HARMED?	IS THE RISK ADEQUATELY CONTROLLED?	WHAT FURTHER ACTION IS NECESSARY TO CONTROL THE RISK?
1. Slipping / Tripping	Staff		
2. Fire	Students		
3. Chemicals / drugs			
4. Moving parts of machinery			
5. Pressure systems		<i>Please complete overleaf</i>	<i>Please complete overleaf</i>
6. Electricity			
7. Dust			
8. Fumes			
9. Manual Handling			
10. Noise			
11. Lighting			
12. Computers			
13. Any other hazards			

(Please refer to Risk Assessment Matrix to indicate how Severity and Likelihood combine to produce a Risk score)
Likelihood x Severity = Risk Score, = Low, Medium or High risk

Type & Source Of Hazard	Nature Of The Risk	Type Of Activity In Which Risks May Arise	Control Measures	Risk Rating			L M H	Any Further Control Measures Required
				L	S	R		
Bags and coats	Trip Hazard	Any activity which involves movement around the laboratory	Place all bags and coats etc in lockers provided	1	1	1	L	
Stools	Trip Hazard	Any activity which involves movement around the laboratory	All stools to be stacked and placed at the back / sides of the lab to ensure no obstructions	1	1	1	L	
Hot Apparatus	Burns	Heating samples to 60 °C with Bunsen burners.	All long hair should be tied back, use gloves when handling hot apparatus and allow equipment to cool before putting away.	2	2	4	L	
Glass wear	Cuts	Handling	Ensure good technique is used, Take care when handling glassware to avoid any breakages.	1	2	2	L	
Potassium Permanganate solution	Oxidising and Harmful	Measuring required volume in measuring cylinder and mixing.	Chemical is in solution form (rather than solid) at a concentration of 0.02mol dm ⁻³ so low hazard. The wearing of safety goggles is mandatory at all times during practical activities in the laboratory.	2	1	2	L	

Type & Source Of Hazard	Nature Of The Risk	Type Of Activity In Which Risks May Arise	Control Measures	Risk Rating			L M H	Any Further Control Measures Required
				L	S	R		
Sodium Carbonate	Low hazard	Weighing and mixing	Low hazard. The wearing of safety goggles is mandatory at all times during practical activities in the laboratory.	1	1	1	L	
Sodium Sulfite solution	Low hazard	Stirring and mixing	Low hazard material. The wearing of safety goggles is mandatory at all times during practical activities in the laboratory	1	1	1	L	
(4-methylphenyl) methanol	Toxic and flammable	Weighing and Mixing	Heating of compound will occur in solution and for a limited time period.	1	1	1	L	
4-methyl benzene carboxylic acid	Harmful and irritating	Product made after reaction is complete.	Product is made in a confined round bottomed flask, therefore exposure to product is limited. Gloves, goggles and laboratory coats will be worn when handling the solidified product.	1	1	1	L	
Conc Sulfuric acid	Corrosive and Irritant, splash to the eyes/skin irritation.	Pouring, mixing and measuring.	The wearing of safety goggles is mandatory at all times during practical activities in the laboratory. Concentrations of more than 2mol dm^{-3} will be used which is corrosive therefore a fume cupboard will be mandatory. Acid will be added drop wise using a pipette to prevent spillages. Any splashes to skin should be washed off immediately.	2	4	8	L	

Type & Source Of Hazard	Nature Of The Risk	Type Of Activity In Which Risks May Arise	Control Measures	Risk Rating			L M H	Any Further Control Measures Required
				L	S	R		
Manganese dioxide	Harmful	Product made during reaction within glass vessel	Product is contained within a closed round bottomed flask. Product is converted into benzoic acid as the reaction continues.	1	1	1	L	

INDICATE WHAT FIRST AID ARRANGEMENTS ARE IN PLACE

A science technician (qualified first aid at work) shall be present during all science practical lessons.
First aid kit available in all science prep rooms (Physics NB232, Chemistry NB237B & Biology NB124A).

Assessment performed by : (Please Print Name)	Samantha Oxley	Position :	Chemistry Lecturer
Date of Assessment :	25th September 2009		
Signed :			

ACTION LIST RECOMMENDATIONS	Risk Rating			L M H	TO BE ACTIONED BY	DATE ACTION COMPLETED	SIGNATURE
	L	S	R				