THE UNIVERSITY OF MELBOURNE

RISK ASSESSMENT 3D Model

EHS Manual

This form is to be used in conjunction with the Environment Health and Safety Manual Procedure 3.2 Hazard Identification, Assessment and Control - Application.

Information of Activity

Activity: Use of (tert- or n-)Butyllithium Location: Chemistry research labs

Identified by: _G. Papadopetros_____ Date: __23/2/06_____

Identified Hazard / Aspect: Pyrophoric, can ignite spontaneously in air below 45 deg

Risk Analysis matrix – level of risk

Identified Hazards	Risk Assessment			Risk Score	Risk Level
	Exposure (E)	Likelihood (L)	Consequence (C)	E x L x C	
Fire hazard, can ignite spontaneously in air or on contact with water	2	0.3	10	6	M

Definitions							
Exposure	E	Likelihood	L	Consequence	C	Risk Score	Hierarchy of Risk Controls
Continuously	10	Almost Certain	1.0	Catastrophic	20	**E** >20 **H** >10	**Elimination** is a permanent solution and should be attempted in the first instance.
Frequently	6	Likely	0.6	Major	10	**M** 3-10	**Substitution** involves replacing the hazard or environmental aspect by one of lower risk.
Occasionally	3	Possible	0.3	Moderate	5		**Engineering** controls involve physical barriers or structural changes to the environment or process.
Infrequently	2	Unlikely	0.1	Minor	2	**L** < 3	**Administrative** controls reduce hazard by altering procedures and providing instructions.
Rarely	1	Rare	0.05	Insignificant	1		**Personal protective equipment** last resort or temporary control.

LEGEND

E: extreme/significant risk; immediate action required; must be managed by senior management with a detailed plan, notify RMO immediately.
H: high risk, senior management attention needed, detailed research and management planning at senior levels
M: moderate risk, management responsibility must be specified; manage by specific monitoring or response procedures
L: low risk, manage by routine procedures; unlikely to need specific allocation of resources

Details of Risk Controls to be Taken

Risk Controls: *(These should be determined by both the person(s) identifying the risk and the responsible manager and HSR or Environmental Representative).* When determining risk controls refer to Hierarchy of Risk Control. Some examples are operating manuals, safe work procedures, licenses, permits to work, training and instruction etc

Supervision: New users of pyrophoric materials must be trained by their Supervisor, R.A. or by an experienced senior PhD student.

Storage: Materials should be stored under a dry, inert atmosphere in "sure seal" containers. Handling should be carried out in a fume hood over a spill tray.

Use: Butyllithium must not be used outside of normal working hours. Transfer of Butyllithium may be carried out by syringe fitted with a lockable needle to prevent the needle from being dislodged accidentally. For the transfer of large amounts it is preferable to use a cannula pressurised by an inert gas. However, great care must be taken to avoid over-pressuring containers. Dry sand should be kept at hand as a fire extinguishing medium. A small beaker of sand is useful to extinguish any fire that occurs at the syringe tip and to receive any last drops of reagent from the syringe.

PPE. Lab coat, safety glasses and plastic or rubber gloves should be worn.

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Emergency Procedures:

- **Fire:** In the event of material igniting, it should be extinguished with dry sand and left to evaporate/hydrolise. **Do not use water.** If the Emergency Alarms are activated you must evacuate and inform the Building Evacuation Controller at the front of the building of the cause of the fire.
- **Skin/eye contact**: Wash the affected area thoroughly with water and seek first aid.

Person assessing the risk: G. Papadopetros Date: 23/2/06

Authorised by: ____ _____ G. Papadopetros ____ Planned completion date: 23/2/06

Risk Control Measures Completed

Actions by: _____ _____ Completed (Initials & date): _____