



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, handling & clean-up of mercury Location: Chemistry

Identified by: G. Papadopoulos Date: 4/12/06

Identified Hazard / Aspect: Toxicity through exposure, violent reaction upon contact with Ammonia or Bromine

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	
Worker exposure	2	0.3	5	3	M
Reacting with other chemicals	2	0.1	5	1	L

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 M 3-10	Elimination is a permanent solution and should be attempted in the first instance. Substitution involves replacing the hazard or environmental aspect by one of lower risk. Engineering controls involve physical barriers or structural changes to the environment or process. Administrative controls reduce hazard by altering procedures and providing instructions. Personal protective equipment last resort or temporary control.
Frequently	6	Likely	0.6	Major	10		
Occasionally	3	Possible	0.3	Moderate	5		
Infrequently	2	Unlikely	0.1	Minor	2	L < 3	
Rarely	1	Rare	0.05	Insignificant	1		

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

Prior to using Mercury, the MSDS must be consulted. It is highly toxic through inhalation, in contact with skin and if swallowed. There is also a high danger of cumulative effects. Elemental mercury is a Schedule 7 Poison and thus should be stored in a locked metal cabinet. Segregate from ammonia, amines & acetylene as explosive salts may form. Mercury should be transported only in small quantities in plastic containers (glass bottles are unsuitable because breakages will result in possible spillage over a large area). Mercury should be handled only in a fume-hood and over a suitable plastic tray. Skin contact should be avoided. Wash hands thoroughly after using mercury. Secondary containment must be used on all apparatus containing Mercury e.g. manometers, McLeod gauges. Care must be taken with mercury in glass thermometers, which should be phased out in favour of spirit thermometers.

All spillages must be cleaned up immediately using the Mercury Spill Kits available from the Chemistry Store. When spilled, Mercury breaks into many small droplets covering a large area: avoid spreading the



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contamination by restricting access to the spill area and only use the designated cleaning tools (*e.g.* brush, floor mop or dustpan).

If mercury has spilled onto a hot surface (hotplate, mantle, heating element) evacuate the room as high concentrations of vapour could be present.

Dirty liquid mercury should be carefully transferred to a clearly labelled plastic bottle and added to the chemical waste. Used spill kits, slurry and contaminated items *e.g.* tissues and small bits of broken glass (thermometer) should be sealed in a suitable, clearly labelled container. These can then be given to the Safety Officer for disposal.

PPE: PVC gloves, safety glasses, lab coat and closed shoes.

Person assessing the risk: G. Papadopoulos Date: 4/12/06

Authorised by: Prof. K. Ghiggino Planned completion date:

Risk Control Measures Completed

Actions by: G. Papadopoulos Completed (Initials & date): 4/12/06