	McMaster University Risk Management Manual	RMM #500 Designated Substances Control Program	Final Date: June 2012 Page: A-1
---	--	---	---------------------------------------

**Appendix A Designated Substance Assessment Form**  
**RECORD OF DESIGNATED SUBSTANCE ASSESSMENT**

SUBSTANCE: Lead

DATE REVIEWED BY JHSC: May 11, 2011

COMPANY: Department of Engineering Physics, McMaster University

DEPARTMENT OPERATIONS: Lead bricks for radiation shielding of positron sources (gammas and positrons).

LOCATION(S): JHE-A302 , Positron Lab

ASSESSMENT PREPARED BY: Doris Stevanovic

JOB TITLE: Research Engineer

DATE PREPARED: April 2011

**APPLICATION – WORKSHEET 1: IS THE DESIGNATED SUBSTANCE PRESENT?**

1. Do any material safety data sheets from your suppliers indicate the presence of the substance?

YES

NO

2. If substance is present, indicate the department where it is used, nature of the use (i.e. Direct or Indirect) and the quantity used per month or year:

<u>Product Name</u>	<u>Department</u>	<u>How Used?</u> <u>Direct/Indirect</u>	<u>Quantity</u> <u>Per Month/Year</u>
Lead Bricks 8" x 4"x 2"	Engineering Physics	Direct	Permanent  14 full bricks, (5 painted black), 4 half bricks (black)

**CONCLUSIONS**

Read statements and check applicable box:

Substance not present anywhere in workplace; regulation does not apply.  
**No Assessment needed.** (Note: Although you do not need to proceed further, you should retain this worksheet on record. e.g. auditing purposes)

Processes / activities have been identified where substance present.  
**Proceed to Worksheet 2.**

**APPLICATION – WORKSHEET 2: IS WORKER EXPOSURE LIKELY?**

1.	In what form does the substance enter the plant? As bricks.		
	Product title: <b>Lead</b>		
	Type of Container: <b>N/A</b>	Size of Container:	<b>N/A</b>
2.	Is this form altered during use or in the operation?		YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
	If YES, indicate altered form:		
3.	Is there a possibility of the substance being released into the workspace environment during normal use?		YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
	If YES, indicate the stage of the operation or areas where this can occur: - If bricks are moved, touched, scratched, stacked etc.		
4.	If YES to Question 3, specify the job functions and approximate number of employees who might be exposed:		
	<b>Job Function</b>	<b>Number of Employees</b>	
	Moving/stacking bricks.	1	
5.	If YES to Question 3, indicate how workers could be exposed:		
	Inhalation <input type="checkbox"/>	Ingestion <input type="checkbox"/>	Skin Absorption <input type="checkbox"/>
	Skin Contact <input checked="" type="checkbox"/>	Other _____	
6.	If NO to Question 3, is there a likelihood of escape due to leaks, accidents, etc.?		
	YES <input type="checkbox"/>	NO <input type="checkbox"/>	
7.	Are workers likely to be exposed?		YES <input type="checkbox"/> NO <input type="checkbox"/>

**CONCLUSIONS**Are there any activities/situations where exposure by any route is likely?YES  NO 

If NO, no further action is necessary. Date completed \_\_\_\_\_

If YES, an assessment is necessary – **proceed to Section III.**Note: If protection against exposure has been left up to some engineering control measure which can fail, or deteriorate for any reason, or to a work hygiene practice, an assessment is necessary – **Proceed to Section III.**

**ASSESSMENT – WORKSHEET 3: PROCESS DESCRIPTION****NAME OF PROCESS:**

<b><u>Process Flow</u></b>	<b><u>Description</u></b>	<b><u>Likely</u></b>
		<b><u>Exposure</u></b>
		<b><u>Yes/No</u></b>
1. <div data-bbox="240 472 520 568" style="border: 1px solid black; padding: 2px;">Lead bricks as shielding.</div>	Lead bricks surround a positron source in a fume hood and in the experimental set-up. Used in preparation of gamma and positron sources for positron annihilation experiments.	No
2. <div data-bbox="240 645 520 741" style="border: 1px solid black; height: 43px;"></div>		
3. <div data-bbox="240 797 520 896" style="border: 1px solid black; height: 44px;"></div>		

**ASSESSMENT – WORKSHEET 4: EXISTING CONTROLS**

<b><u>Process Flow Stage</u></b>	<b><u>Control Description</u></b>	<b><u>Problems/Recommendations</u></b>
1	<p data-bbox="517 344 767 374"><b><u>Engineering Controls:</u></b></p> <p data-bbox="517 405 967 434">Sample preparation is done in a fumehood.</p> <p data-bbox="517 524 699 553"><b><u>Work Practices:</u></b></p> <p data-bbox="517 584 804 613">Avoid touching bricks.</p> <p data-bbox="517 748 879 777"><b><u>Hygiene Facilities and Practices:</u></b></p> <p data-bbox="517 808 959 875">Wash hands after contact with lead bricks.</p> <p data-bbox="517 943 922 1010">NO FOOD or DRINK permitted in the Laboratory.</p> <p data-bbox="517 1099 767 1128"><b><u>Training Information:</u></b></p> <p data-bbox="517 1167 951 1267">Refer to MSDS and DSA for Lead and MSDS for materials being handled.</p> <p data-bbox="517 1312 951 1341">Radiation Safety training required.</p> <p data-bbox="517 1402 863 1431"><b><u>Personal Protective Equipment</u></b></p> <p data-bbox="517 1462 608 1491">Gloves</p> <p data-bbox="517 1536 743 1565">Closed toed shoes</p> <p data-bbox="517 1659 906 1688"><b><u>Emergency Procedures/Equipment</u></b></p> <p data-bbox="517 1749 564 1778">N/A</p>	<p data-bbox="1016 1435 1342 1536">Wear cotton work gloves when handling or moving bricks.</p>

**ASSESSMENT – WORKSHEET 5: JOB EXPOSURE ANALYSIS**

Process Flow Stage	Job Title	Total Number of Employees	Tasks Where Exposure Likely	Duration Hrs per Week	PPE Req'd to be Used
1	Set up of lead shielding for positron annihilation experiments.	1	Moving/stacking of lead bricks.	N/A	Work gloves
<b>CONCLUSIONS</b>					
Jobs/tasks to be noted during walk-through survey:					

**ASSESSMENT – WORKSHEET 6: HEALTH EFFECTS**

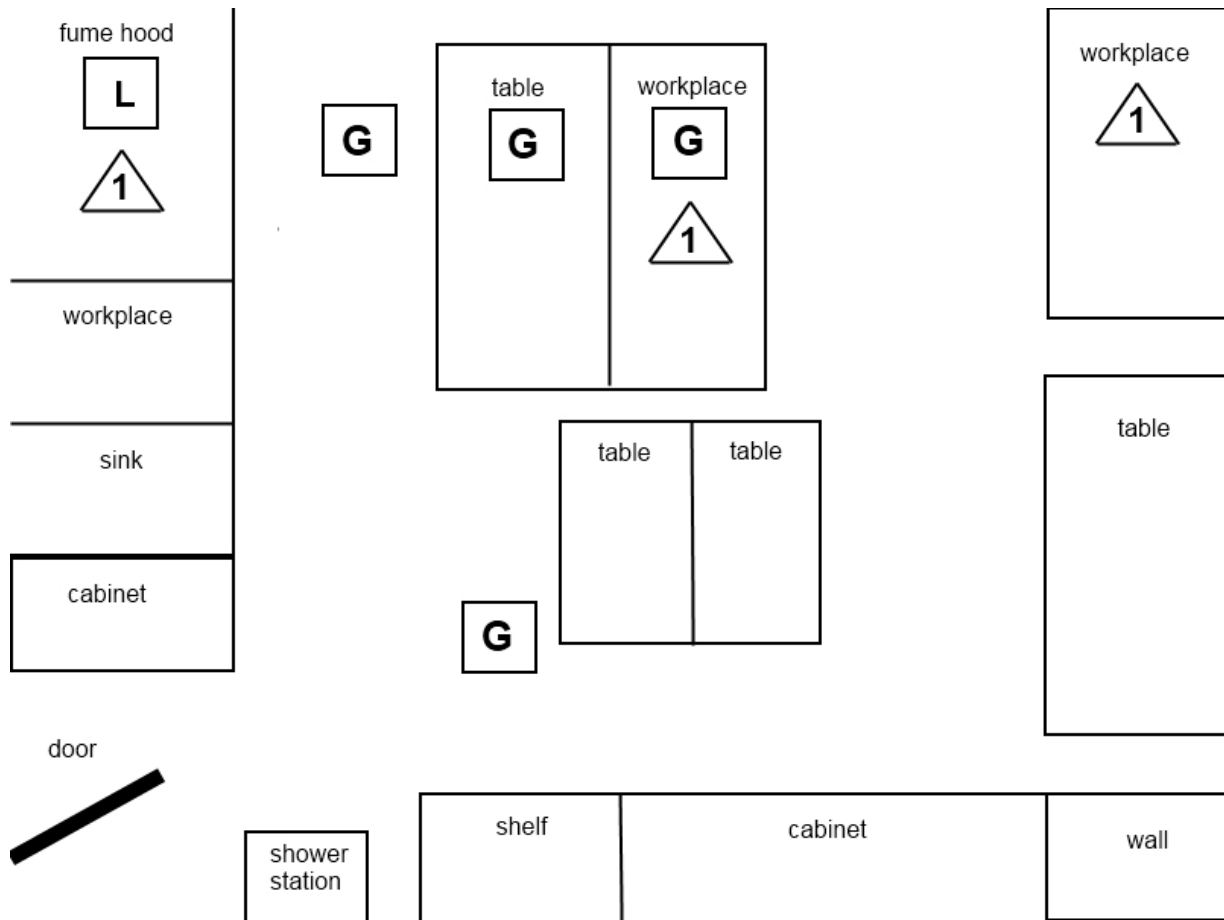
1. Any reported health effects? If so, describe.  
N/A

2. Any current Medical Program? If so, describe.  
N/A

3. Previous exposure monitoring effects? If so, describe.  
N/A

<b>CONCLUSIONS</b>			
Health effects known at this stage:	YES	<input type="checkbox"/>	NO <input checked="" type="checkbox"/>
Further information required:	YES	<input type="checkbox"/>	NO <input checked="" type="checkbox"/>

**ASSESSMENT – WORKSHEET 7: FLOOR PLAN**



DIMENSIONS:	L	18 ft	W	16.5 ft	H	9 ft
-------------	---	-------	---	---------	---	------

- ④ WORK STATION – enter number from job title – Worksheet 5
- △ EXPOSURE SOURCE – enter number from Process Flow – Worksheet 3
- VENTILATION – enter L for Local exhaust and G for general ventilation



**ASSESSMENT – WORKSHEET 8: WALK THROUGH**

Evidence of Contamination:

N/A

Hygiene Facilities and Work Practices:

No Food or Drink allowed in the laboratory.

Ventilation Systems:

Fume hood.

Storage Facilities:

Laboratory is kept locked when not in use.

**ASSESSMENT – WORKSHEET 8: WALK THROUGH (cont.)**

Dispensing Procedures:

N/A

Housekeeping:

Personal Protective Equipment:

Cotton work gloves

Closed toed shoes

Emergency Facilities / Procedures:

N/A

**ASSESSMENT – WORKSHEET 9: WALK THROUGH CONCLUSIONS**

1(a). Were any areas found where controls are required or where existing controls may require improvement?

YES  NO

1(b). If YES, indicate the areas where the controls may be required or where existing controls may require improvement.

**AREA**

**SUGGESTED IMPROVEMENTS**



2(a). Personal exposure monitoring is required:

YES  NO

2(b). If YES, indicate where:

3. Indicate any workers for whom medical testing and/or examinations may be required.

N/A

**CONCLUSION – WORKSHEET 10: IS A CONTROL PROGRAM NECESSARY?**

<input checked="" type="checkbox"/>	CONCLUSION A: NO WORKER'S HEALTH MAY BE AFFECTED.
<input type="checkbox"/>	CONCLUSION B: A WORKER'S HEALTH MAY BE AFFECTED.

OVERALL CONCLUSION		
A control program is necessary	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
Improvements needed in existing program:		

**DATE:** June 15, 2012

**SIGNED:** \_\_\_\_\_