Appendix A Designated Substance Assessment Form

RECORD OF DESIGNATED SUBSTANCE ASSESSMENT

SUBSTANCE: lead plates
DATE: February 12, 2009

COMPANY: Mechanical Engineering, McMaster University
DEPARTMENT OPERATIONS: protective lead plates to shield gamma source. Gamma source is used to measure void fraction in two phase flow of Freon and air.
LOCATIONS: JHE 206
ASSESSMENT PREPARED BY: Joe Verhaeghe TITLE: Electronic Technologist DATE PREPARED: December 3, 2008

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 [x] 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:

Product Name	Department	How Used? Direct / Indirect	Quantity Per Month / Year
Lead Plates	mech eng	Indirect	10 plates permanent. Size 5 ½ X 6 ¼ X¾ inches

CONCLUSIONS

Read statements and check applicable box:

[ ] Substance not present anywhere in workplace; regulation does not apply
No Assessment needed

[x] 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?
   Product Title: Lead bricks
   Type of Container: none Size of Container:

2. Is this form altered during use or in the operation: YES NO X

   If YES,

3. Is there a possibility of the substance being released into the workplace environment during normal use? YES NO X

4. If YES, to Question 3, specify the job functions and approximate number of employees who might be exposed:

   Job Function **Number of Employees**

5. If YES, to Question 3, Indicate how workers could be exposed:
   Inhalation ☐ Ingestion Skin Absorption ☐
   Skin Contact ☐ by skin contact

6. If NO, to Question 3, is there a likelihood of escape due to leaks, accidents, etc.?
   YES X NO ☐

7. Are workers likely to be exposed? YES x NO ☐

CONCLUSIONS

Are there any activities / situations where exposure by any route is likely

YES X 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: measurement of void fraction using gamma source

Process Flow	Description	Likely Exposure Yes / No
1. Measurement of void fraction ↓ 2. ↓ 3. ↓ 4. ↓ 5.	There is no need to touch lead under normal testing.	Yes, if plates are touched

ASSESSMENT – WORKSHEET 4: EXISTING CONTROLS

Process Flow Stage	Control Description	Problems / Recommendations
Measurement of void fraction	**Engineering Controls:** Plates are held securely in place. **Work Practices** There is no need to handle plate while performing experiments.	If plates are handled wash hands

ASSESSMENT – WORKSHEET 4: - EXISTING CONTROLS (cont'd)

Process Flow Stage	Control Description	Problems / Recommendations
Measurement of void fraction	**Hygiene Facilities and Practices:** Avoid touching plates. If plates are handled, wash hands.	Wash hands after use
	Training / Information: Instruct students to wash hands after handling plates.	Instruct employee to wash hands after handling plates
	Emergency Procedures / Equipment none	
	Personal Protective Equipment Wear gloves to handle plates when apparatus is disassembled.	

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
Measurement of void fraction	Graduate student	1	Measurement of void fraction	2-20 hours	none

CONCLUSIONS

Jobs/ tasks to be noted during walk through survey:

ASSESSMENT – WORKSHEET 6: HEALTH EFFECTS

1. Any reported health effects? If so, describe. No.

2. Any current Medical Program? If so, describe. No

3. Previous exposure monitoring results? If so, describe.

CONCLUSIONS

Health effects known at this stage: YES ☐ NO ☒X

Further information required: YES ☐ NO X

ASSESSMENT – WORKSHEET 7: FLOOR PLAN

LOCATION: jhe206 **DATE: December 3, 2008**

SW		Bench	Bench	Bench	Bench	Bench		Comp uter	
Chalk Board									
Chalk board									Bench
			table	table	table	table			Bench
			table	table	table	table			Bench
door									Bench
Bench									Bench
Bench									Bench
Bench									Comp uter
Bench									
					stairs				
					platfor m	Lead plates		pump	
			Heater cut off switch						

DIMENSIONS: page = room

◯ WORK STATION – enter number form job title – Worksheet 5

△ EXPOSURE SOURCE – enter number from Process Flow – Worksheet 3

□ VENTILATION – enter L for local exhaust & G for general ventilation

ASSESSMENT – WORKSHEET 8: WALK THROUGH

Evidence of Contamination:

none

Hygiene Facilities and Work Practices:

wash hands.

Ventilation Systems:
none

Storage Facilities:

None, stored in experimental apparatus.

ASSESSMENT – WORKSHEET 8: WALK THROUGH (cont'd)

Dispensing Procedures:

Housekeeping:

Personal Protective Equipment:
Wear gloves to handle plates when apparatus is disassembled.

Emergency Facilities / Procedures:

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 X

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.

CONCLUSION: WORKSHEET 10: IS A CONTROL PROGRAM NECESSARY?

[X] CONCLUSION A: NO WORKER'S HEALTH MAY BE AFFECTED.

[ ] CONCLUSION B: A WORKER'S HEALTH MAY BE AFFECTED.

OVERALL CONCLUSION

A control program is necessary. YES [ ] NO X[ ]

Improvements needed in existing program: NO

DATE December 3, 2008 **SIGNED Joe Verhaeghe**