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Date Printed: Mar 24, 2011

Experiment Safety Review Form
Review Number: PS-ESR-1-100-2011

PRINCIPAL INVESTIGATOR: John Trunk

GROUP: Biology / Structural

EXT: 3406 **E-MAIL: trunk@bnl.gov** **LIFE NUMBER: 16527**

Project Title: Sample Preparation Absorption Spectroscopy Sample Cell Cleaning	
Location(s): 0725	
Area(s): 0725-FIRST-1-100	
Proposed Start Date and Duration: 3/18/2011 - 1 years	

SIGNATURES:

Principal Investigator: John Trunk	**Date: 3/22/2011**
Experiment Review Coordinator: Lori Stiegler	**Date: 3/23/2011**
Co-PI or Alternate Contact (s): Saad Janjua	**Date:**
Reviewer: Christopher Weilandics	**Date: 3/15/2011**
Reviewer: Frank Zafonte	**Date: 3/15/2011**
Reviewer: Deborah Bauer	**Date: 3/15/2011**
Reviewer: Brian Heneveld	**Date: 3/15/2011**
Approval: Lori Stiegler	**Date: 3/23/2011**
Walkthrough Signature:	**Date:**
Expiration Date (max 1 yr.): 3/23/2012	
FUA Change Required? No	
Fire Rescue Run Card Changes Required? No	
Has a NEPA Review been Performed for this Project? No	
Required Approvals (i.e., IACUC, IBC, etc.):	
Project Termination Acceptance Signature: **Comments:**	**Date:**

I. Define the Scope of the Work

A. Description

Most users bring their “proteins” already dissolved in water or buffer…so the lab bench is just a convenient place to load the samples into the sample cells. However, occasionally, samples arrive dry and need to be dissolved in the appropriate buffer (water or phosphate buffer). We encourage users to bring the buffers they need and to not leave any solvent behind. A small centrifuge and a dissecting microscope are available for users. An analytical balance also exists for obtaining exact concentrations. To measure the OD of a prepared sample a diode array absorption spectrometer can be used. After an experiment, the sample cells are cleaned using water and ethanol.

Equipment manuals or procedures that are controlled documents:

None

B. Human Performance Factors

The most frequent problem that users encounter is that their samples are not transparent to short wavelength UV light. So, a bit of effort in finding the right buffer, salt concentration, and path length, is all that is needed. This type of problem does not involve safety issues.

C. Waste Minimization/Pollution Prevention

Since most users are looking into biological systems, the wastes and solvents are nontoxic. In most cases, the amount of sample used in a typical experiment, is on the order of 20 ul, so the amount of waste is very small. Again, if hazardous samples or solvents are used, they are only used in small quantities and are captured and returned to the home institution of the user.

D. Materials Used /Waste Generated

Materials Used	Disposal Method	Amount per Use	Amount per Year	Comments
Ethanol	Sanitary	1.00 ml	100.00 ml	For rinsing cells
Helmanex	Sanitary	1.00 ml	100.00 ml	For rinsing cells

II. Identify and Analyze Hazards Associated with the Work

The following hazards were identified:

Physical Hazards:

- Compressed gases (lecture bottles, cylinders, gas lines) (Area: 0725-FIRST-1-100)
- Flammable liquids (Area: 0725-FIRST-1-100)

Chemical Hazards:

- Flammable liquids (Area: 0725-FIRST-1-100)

Ionizing and Non-ionizing Radiation Hazards:

- None

Biological Hazards:

- None

Offsite Work:

- None

Other Issues (Security, Notifications, Community, etc.):

- None

Significant Environmental Aspects

- None

III. Develop and Implement Hazard Controls and Assess Risk

A. Physical Hazards, Tasks and Controls

Hazard, Default Controls, Task Specific Info	Risk Level
Hazard: **Compressed gases (lecture bottles, cylinders, gas lines)** **Default Controls:** • Any systems >15psi must be SME Approved • Transport cylinders using a cylinder cart • Secure cylinders to a fixed object/wall • Use regulator, hoses, and components compatible with gas • Use hoses and clamps rated for maximum regulator output or use pressure relief device • Wear safety glasses with side shields when installing/removing/or adjusting regulator • Label piping/tubing	**Negligible (0-20)**

Hazard: **Flammable liquids** **Default Controls:** As for chemicals, plus Store large quantities in Flam. cabinets as required	**Negligible (0-20)**

B. Chemical Hazards, Tasks and Controls

Hazard, Default Controls, Task Specific Info	Risk Level
Hazard: **Flammable liquids** **Default Controls:** Use hazardous chemicals controls. Review large quantity storage with Fire Protection Engineer Note location on fire run card and hazard info. placard for storage of solids, greater than 40 pounds; liquids, greater than 5 gallons; gases, greater than 10 pounds	**Negligible (0-20)**

C. Environmental Hazards, Tasks and Controls (include on/off site transportation and products/services)

None

D. Radiation Hazards, Tasks and Controls

None

E. Biological Hazards, Tasks and Controls

None

F. Offsite Work Hazards, Tasks and Controls

None

G. Other Issues (Security, Notifications to Other Organizations, Community Involvement, etc.)

None

H. Recommended Exposure Monitoring

- None

Description or comments:

I. EPHA Determination

Chemical Name	Quantity (lbs, gal)	Location (Bldg/Room#)

IV. Perform Work Within Controls

A. Recommended Training and Medical Surveillance Summary

- NSLS R2A2 for Lab Stewards (LS-R2A2-Lab-STWD)
- Laboratory Standard (HP-IND-220)
- Compressed Gas Safety (TQ-COMPGAS1)

B. Personnel Training, Qualification, and Authorization List

Employee/Guest Name	Life/Guest#	Dept	Required Training Course(s)	Signed
John Trunk	16527	BO	Compressed Gas Safety (TQ-COMPGAS1) [EXPIRES: 7/15/2012] Laboratory Standard (HP-IND-220) [EXPIRES: 7/15/2011] NSLS R2A2 for Lab Stewards (LS-R2A2-Lab-STWD) [EXPIRES: 1/25/2012]	3/16/2011 8:41:41 AM
Saad Janjua	N6262	LU	Compressed Gas Safety (TQ-COMPGAS1) [EXPIRES: 10/6/2013] Laboratory Standard (HP-IND-220) [INCOMPLETE]	

C. Emergency Procedures

Follow the NSLS Local Emergency Plan. Emergency shower and spill control supplies are located just outside the room.

D. Transportation

None

E. Notifications

None

F. Termination/Decommissioning

If the project is terminated, all equipment and chemicals would be removed and dispositioned by the Lab Steward.

V. Provide Feedback

None

VI. Attachments

Attached Files:

02-11-10 LEEF LS.pdf