

SER-CAT HAZARD ASSESSMENT FORM

ESAF Serial No

Institution Name

Experiment Start Date

Instructions

1. Submit these forms, User Registration Form (if needed), and APS Experiment Safety Approval Form 2-3 weeks prior to your group's visit (required to avoid possible delays in your start of beamtime).
2. Complete the questionnaire and appropriate appendices.
3. Enter name and signature of the Experiment Team Leader. The Experiment Team Leader is responsible for all members and the information provided.

QUESTIONS	YES	NO	If Yes, Complete Appendix
1. Will any of your group's samples be:			
a. A virus or virus component, infectious agent, or a biologically-derived toxin?			C-2
b. Other health or agricultural hazard?			C-2
c. Derivatized with a heavy atom compound?			C-1
d. Radioactive?			C-1
e. Derived from human tissue/blood or cells?			C-3
2. Will you use other chemicals or solutions?			A
3. Are you transporting samples and/or other materials?			B
4. Will your experiment require special/unusual safety precautions or pre-arrival safety planning?			If yes on No.4 or No.5, explain on separate page
5. Will any of your group's experiments use:			
a. Cryogenic liquid (e.g., propane, freon, ethane) other than liquid nitrogen?			
b. Pressurized systems or gases?			
c. Radioactive source, laser/uv; microwave, RF, or magnetic fields, or any other non-standard equipment?			

EXPERIMENT TEAM VERIFICATION**Experiment Team Leader**

Print

Signature
(upon arrival)

Date

SER-CAT REVIEW AND APPROVAL**Proposal Review:**

Signature

Date

Arrival Review:

Signature

Date

Experiment Team Leader		ESAF Serial No.	
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APPENDIX A. CHEMICAL MATERIALS OTHER THAN SAMPLE

Instructions

1. Describe all solids, liquids, solutions, and gases required to conduct your experiment at SER-CAT.
2. For solutions, describe the major components and any minor components that are themselves hazardous.
3. Contact SER-CAT personnel if proprietary information must be protected.
4. Avoid bringing organic solvents because they are available at Argonne.
5. Minimize the quantities of chemicals transferred to Argonne.
6. If feasible, plan to leave excess materials at SER-CAT for disposal or use by others.
7. Include a Material Safety Data Sheet for each hazardous material.

Quantities (approximate)

No.	Chemical Name or Description of Solution (include sample buffers)	CAS Number	Hazard ¹	Transfer To ANL	From ANL Stock	Dispose at ANL	Return to home lab
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							
13.							
14.							
15.							

Check here if continuation page is used

¹Enter one or more hazard codes from definitions below (Based on Department of Transformation regulations)

Flammable Liquid (FL)

Flash point ≤ 60°C

Combustible liquid (CL)

Flash point 60-90°C

Heavy atom compound (HA)

Corrosive to skin, steel, or aluminum (CO)

Carcinogen, mutagen, or teratogen (CA)

Radioactive (R), (>2nCi/gram; includes compounds of U, Th, Lu, Sm, Tc

Poisonous

Acute oral toxicity

LD₅₀ ≤ 500mg/kg for liquid
LD₅₀ ≤ 200 mg/kg for solid

Acute dermal toxicity

LD₅₀ ≤ 1000mg/kg

Acute inhalation toxicity

LD₅₀ ≤ 10mg/L, dust/mist

Other (O) including organic peroxide, oxidizer, explosive, pyrophoric, noxious flammable gas or solid, infectious, toxin

None of these codes (N)

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Appendix B: Packaging and Transportation of Samples and Materials

1. Samples Transported to ANL (Check all that apply)

Crystal pre-frozen in your lab?	YES	NO
Crystals in suspension?	YES	NO
If pre-frozen	Packaged in DOT-approved "dry shipper" Crystals frozen in Propane, Freon, Ethane Must abide with all DOT and IATA regulations (See information for samples frozen in propane) Other packaging, explain Ship via commercial carrier (e.g., FedEx) Transport from home via road in a passenger vehicle Transport as airline baggage, then via road in a passenger vehicle Other transport mode, explain	
If in suspension	Packaged per 49 CFR 173.4 Other packaging, explain Ship via FedEx Transport from home in passenger vehicle Airline baggage, then by car Carry-on airline baggage; then by car Other transport mode, explain	

2. Other Chemicals and Solutions Transported to ANL

For yes responses, enter line numbers from table in Appendix A

YES NO Items shipped directly from a vendor to ANL

YES NO Items shipped from your institution to Argonne via commercial carrier.

YES NO Items you will bring with you as checked or carry-on airline baggage.

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APPENDIX C-1: Sample Characteristics

C1. Heavy Atom Derivatives and Radioactive Samples

None (If None, go to C-2)
 YES NO Sample(s) will be derivatized with a heavy atom compound before or after your arrival.
 If yes, identify the heavy atom compounds

Note: Naturally occurring radioactive elements include: U, Th, Lu, Sm, Tc

YES NO You will pre-derivatize the sample(s) (in your lab) with a radioactive (> 2 nano Curie/gram) heavy atom compound. If yes, what is the compound and its approximate specific activity?

YES NO You will derivatize the sample(s) at the APS with a radioactive (> 2 nano Curie/gram) heavy atom compound. If yes, what is the compound, its approximate specific activity, and its approximate concentration in the stock solution?

YES NO Sample(s) will be otherwise radioactive. If yes, explain.

C2. POTENTIAL HEALTH HAZARDS

NONE (If none, go to page C-3.)

Check all applicable characteristics:

- Virus, intact
- Virus, molecular component
- Virus structural fragment
- Infectious, non-viral
- Molecular component of non-viral infectious agent

NOTE: Only BSL-I biohazards are allowed at SER-CAT without additional review

Complete:
 Appendix C-2
 Questionnaire for Viruses

- Prion
- Biologically-derived toxin
- Other (Requires certification/permit for use/shipping)

Complete:
 Appendix C-3
 Virus/Biohazard Information

C3. HUMAN-DERIVED MATERIALS

YES NO
 1. The sample is from an established human cell line.
 If yes, cite published description.
 Continue to question 2.

YES NO
 3. The funding agency determined that the project involves research with human subjects.
 If yes, provide documentation.
 If no, explain.

YES NO
 2. The sample is directly from human tissue, blood, or primary cell culture.
 If yes, answer 3. and 4. If no, STOP.

YES NO
 4. Your Institutional Review Board reviewed and approved the project.
 If yes, provide documentation.
 If no, explain.

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Appendix C-2 Questionnaire For Viruses and Their Components

Please provide a separate sheet for each sample.

Name of virus:

Host:

Material to be examined (i.e. whole virus, assembled particle, capsid, viral protein, etc.):

Yes NO

Is the material infectious?

If no, how do you know?

- A. Process by which made, explain
- B. Tested for infectivity, explain
- C. Other, explain

Is there any viral DNA/RNA in the material?

If no, how do you know?

- A. Process by which made, explain
- B. Tested for sequences, explain
- C. Other, explain

Are there toxins in the preparation (i.e. do not include common reagents in the salts and buffers?)

If the response is **YES** for any of the questions, additional information will be required to complete the review. (Complete information requested on Appendix C-2, Virus/Biohazard Information)

Experiment Team Leader

Signature (To be signed upon arrival)

Date

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Appendix C- 3 Virus/Biohazard Information

Please provide the following information with an emphasis on providing objective information to support an evaluation of the potential that the presence of the virus/biohazard at ANL could affect (directly or indirectly) human health, or the health of animals (feral, domestic, farm), or economically important crops.

Please Note: Only Virus/Biohazards meeting BSL-1 requirements will be accepted without further review. Projects requiring BSL-2 facilities will not be accepted during the commissioning phase but may be accepted during the Operations phase with sufficient reviews and approval.. Projects requiring BSL-3 or BSL-4 facilities cannot be conducted at the SER-CAT facilities.

Host:

Host specificity:

Effect of virus infection on host; pathology:

Effect on host's ability as a disease vector:

Relationship of host to health of humans and animals (domestic, farm):

Relationship of host to economically important crops:

Information about attenuation of infectivity:

Cite books, articles, chapters, etc. that summarize the above:

Type of activities to be conducted at the APS (e.g.) grow crystals, mount crystals, mount pre-frozen crystals only, etc.) :

Control measures used or required at your institution:

Results of safety review at your institution (protection of humans, animals, and crops):

List permits required for the use or transport of the Virus/BioHazard: