

APS Experiment Safety Approval Form

MUCAT Summary Guidelines

- 1. Compliance and safety.** Although you may consider an operation to be so trivial that no mention of it is necessary, that no personal protective equipment is necessary, that no written standard operating procedure is necessary, or that no restrictions should be placed on it, **make no such assumptions about working at MUCAT.** We are guests in ANL space with strictly limited autonomy, which may be revoked if we fail to comply with oversight requirements. The ESAF is the primary mechanism whereby you inform MUCAT, the APS, and ANL of your planned activities. **Approval is not automatic.** Safety is paramount. Compliance is mandatory.
- 2. Completeness.** It is not sufficient to simply list the compounds you intend to study. All processes, whether chemical or mechanical, must be listed on the ESAF. All ancillary equipment, gases, and other chemicals must be listed. If you have multiple materials which require different environments or processing, list which samples require which environment or which process. Again, assume nothing. Use the user comment section to detail all required procedures other than x-ray scattering. If you are uncertain or have questions, contact the MUCAT Safety Coordinator (currently, Doug Robinson).
- 3. Accuracy.** Be certain that the materials that are listed in the ESAF are the same as those you show up with to do the experiment. If you show up with materials not listed on the ESAF, those materials may be barred from the sector. If you attempt to conduct operations that have not been explicitly listed on the ESAF and approved, your experiment may be terminated.
- 4. Neutron Activation.** If any of your samples have ever been in a neutron beam, state that fact in the user comment section. Include total sample mass, dates of exposure, source, dose, and any isotope information you may have. Allow at least one extra day for an on-site radiological survey before you wish to run any such sample. If you know the samples are radioactive, you must have your home institution shipping department arrange to ship them in full compliance with U.S. Department of Transportation guidelines and according to the instructions available at the following URL:
http://www.aps.anl.gov/xfd/communicator/safety/7_1.html
- 5. Timeliness.** Submit the ESAF at least seven calendar days before the scheduled start of your beamtime.
- 6. Communication.** We cannot help you complete your work in compliance with ANL requirements if you do not communicate with us. We **must** all comply with the ANL ES&H Manual and the MUCAT ES&H Plan.
- 7. Preparation.** Complete your sample preparation before you arrive. If you work with powders, grind, sieve, and package them in the sample holder of your choice before you arrive. Lab space is limited and may soon have to be allocated to complex and ongoing operations that may preclude general use. While we will maintain the limited space and capabilities necessary to mount single crystal samples for the closed-cycle cryostat, do not assume lab space will be available for general material processing without prior arrangement. If any materials processing absolutely must be done on site, we need to know this well before you arrive. Only then can we work with you to establish appropriate procedures and to obtain any required ANL ESH reviews or approvals.
- 8. Disposal.** Do not plan to dispose of samples at the APS unless you have completed ESH 574, "Chemical Waste Generator Training" and ESH 456, "Chemical Waste Certification". Do not throw samples in the waste basket. Unless you have an on-site collaborator who has agreed to monitor your experiment and sample, do not plan to leave samples running on an instrument if you choose to go home early.
- 9. Perspective.** The current safety and oversight requirements are the consequence of more than 40 years of environmental and safety abuses that were considered perfectly acceptable during the cold war era. You should not be too surprised that the American public no longer trusts the judgement of individual scientists and engineers when it comes to safety and waste disposal.