

**In the event of a chemical spill or emergency,
call 911 or 581-4040 (Campus Public Safety).**

CHEMICAL HYGIENE FOR FIELD WORK

This section is analogous to the section on Laboratory Chemical Hygiene, but it is limited to guidelines and information more appropriate for field work situations in the Department (e.g., collection and preservation of biological samples and immobilization of animals with drugs). The section on Laboratory Chemical Hygiene provides expanded information on the topics covered below. If chemical use at field stations is similar to chemical use in traditional indoor laboratories then you must use the section on Laboratory Chemical Hygiene for guidance.

Things to do

1. Obtain a notebook (3-ring binder) for the Department Chemical Hygiene Plan and put it in a prominent location in your work station.
2. For chemical use procedures that are unique to your field work, develop and put in writing: (a) Standard Operating Guidelines, and (b) emergency protocols. These documents also should go in the safety notebook with the department Chemical Hygiene Plan. See section on **Storing Chemicals** under **Laboratory Chemical Hygiene** for more specific information on chemical storage. Note also that drug storage and use requires special security and monitoring.
3. Sort the chemicals stored in your work station into the appropriate hazard categories and store them appropriately.
4. Collect SDSs for all chemicals stored or commonly used in your fieldwork. For drugs, information sheets supplied with drugs provide analogous information. Place them in the field notebook with the Chemical Hygiene Plan.
5. Put together a spill kit (or obtain a commercially available one) if it is appropriate.
6. Make sure appropriate Personal Protective Equipment is available.
7. Obtain proper safety equipment for transporting chemicals to field sites and include transportation protocols in the Standard Operating Guidelines (SOG) for Fieldwork (details below).
8. Contact the department Safety Coordinator or SEM about disposal procedures at field sites. Departmental policy is to avoid producing chemical waste at remote sites if possible. If chemical waste is unavoidable, a waste collection system will be necessary. Investigators should make every effort to keep their waste production in the Small Quantity Generator (SQG) category. More information on waste disposal is included under the following section.
9. Conduct an annual inspection of your remote site if chemicals are stored there.

Standard Operating Guidelines (SOG) for Field Work

Development and formalizing standard operation guidelines for you fieldwork is the major action required to complete chemical use planning. SOGs are intended to provide guidance on working safely with specific classes of chemical or with specific procedures.

SOGs include the following categories of information:

1. **Hazard Assessment.** Prior to beginning work, you should determine whether the materials you will work with pose any special hazards. A Personal Protective Equipment assessment (see page 12) must be completed for each procedure or type of procedure you conduct in the field, and hazard(s), exposure route(s), and symptoms of overexposure for the chemicals used in each SOG need to be included.
2. **Personal Protective Equipment (PPE).** Note that there is a basic personal protective equipment requirement for all field work in the Department (see page 12). There also is a PPE hazard assessment form at the SEM website ([Appendix 1](#)). Consult the MSDS for all substances you will work with to learn what special PPE may be necessary. In general, you should always make use of the following when using chemicals:
 - **Eye Protection.** If no possibility of a splash hazard exists, safety glasses that meet the requirements of the Practice for Occupational and Educational Eye and Face Protection and are equipped with side shields may be worn. **However, safety glasses do not provide protection from splashes; therefore, when working with hazardous chemicals, goggles or face shields MUST be worn.** This is University policy, as well as safe practice. Prescription (street) glasses are NEVER adequate for protective purposes, but may be worn *under* goggles when required for clear vision.
 - **Gloves.** Consult the MSDS or the glove guide provided by the Department for selection of proper glove materials.
 - **Lab Coat or Apron.** Consult the MSDS to determine if the substances you are using require coats or aprons made of special materials.
3. **Safety and Spill Equipment.** Consult the MSDS to see if any special safety equipment is required for working with specific chemicals. In addition to the spill kits required in chemical use areas, a chemical resistant tray should always be used in the field as a work platform to prevent spills to the environment.
4. **Transporting Chemicals.** Secondary transportation containers must be used to transport chemicals in vehicles. These containers prevent chemicals from leaking if a container breaks. These can be obtained through chemical suppliers and cost approximately \$40 for one that will hold a 2.5 L bottle. Containers also must be adequately secured in vehicles. Flammable chemicals must be transported in a container that is fire-proof. There are limits to the amount of chemicals that may be transported. Consult with SEM on regulations when larger volumes need to be transported and on any of the above issues if you have questions.
5. **Emergency Procedures.** Consult the SDS to determine if any special emergency procedures must be developed for the substances with which you are working. If so, put the procedures in writing. Such procedures should address at least the following issues:
 - Emergency telephone numbers (SEM, local police, fire department, your advisory, local medical center).
 - Locations of all safety equipment.
 - How to warn others in the event of an emergency.
 - Special spill control materials required.
 - Any special first aid treatments.

6. **Labels.** All chemicals in use must be clearly labeled with the full name and not just the chemical formula. Hand-written labels are acceptable. When especially hazardous materials or procedures are in use, the work area should carry a warning sign.
7. **Drug storage and use.** All immobilizing drugs stored on campus will be stored in a lock box stored in a locked refrigerator in a room with controlled key access, i.e., one that is not opened by a key that multiple users have. **The PI is responsible for identifying a location for secure drug storage, with a dated inventory system to account for drug removal and return to the designated storage location.** Field workers also will keep a log book of drug use. The log book will include for each usage the date, drug name, amount (ml) used, species, purpose, and name of the person administering the drug. **Principal investigators supervising the fieldwork using these substances ultimately are responsible for adhering to requirements for maintaining and using these inventories.**
8. **Waste Disposal.** Waste production at field sites should be minimized. Monitoring and chemical pick-up by SEM is more difficult at remote sites. Generating ethanol and formaldehyde waste from preserving biological specimens can be avoided by careful planning and conservative use of these chemicals. Specimen transfer procedures that may produce waste of these chemicals should be done back on campus if possible.

If chemical waste at remote sites is unavoidable, you must work with the SEM to develop a waste disposal system using the SEM guidelines for 'Waste Management at Remote Sites'. Investigators should make every effort to keep their waste production to in the Small Quantity Generator (SQG) category. To meet the requirements for this category, no more than 55 gallons of hazardous waste or 1 kg of acutely hazardous waste can be stored at any time. A waste container must be removed within 180 days of the 'Container full date'. Each hazardous container must be properly labeled. Review MSDS sheets for information on specific chemicals you are using and also see the read the section on **Disposal of Chemicals** under **Laboratory Chemical Hygiene**. All procedures for disposal must be outlined in the SOG.