

Standard Operating Procedure Working With Acute Biological Toxins

The following represent the minimum requirements for safety when working with acute biological toxins. The Biosafety Office may require additional or alternate procedures based on the nature of the work described in the Acute Toxin registration form.

General Toxin Information	<p>Toxin:</p> <p>LD₅₀ in µg/kg body weight:</p> <p>Routes of exposure:</p> <p>Target organ(s):</p> <p>Signs/symptoms of exposure:</p>
Administrative Controls	<p>All personnel must be familiar with the SDS sheet for and a copy of the SDS should be attached to this SOP.</p> <p>It is the responsibility of the Principal Investigator (PI) to train all personnel regarding symptoms of toxin exposure, post-exposure management, spill cleanup and decontamination, proper use of engineering and work practice controls, personal protective equipment and security requirements.</p> <p>Exclude non-essential personnel from the work area when toxins are used and post the "No Entry, Toxins in Use" sign to warn/exclude personnel not directly involved in the work.</p>
Due Diligence	<p>Even in excluded amounts, select toxins are subject to federal regulations for "Due Diligence" when transferring any amount of toxin to another investigator or individual due to concerns that someone might stockpile select toxins.</p> <p>The transferor must ensure and document that the recipient:</p> <ul style="list-style-type: none"> • Is eligible to receive the select toxin (i.e. a principal investigator, treating physician or veterinarian, or commercial manufacturer or distributor). • Has a legitimate need (i.e. reasonably justified by a prophylactic, protective, bona fide research, or other peaceful purpose) to handle or use select toxins. <p>Since each PI must register the possession and use of acute toxins, including select toxins, the transfer of select toxins to another UF PI must be approved in advance by the Biosafety Office, who will verify as part of the registration process, that the recipient PI has a legitimate need to possess the material.</p> <p>Transfer of select toxins outside of UF must also be approved in advance by the Biosafety Office who will assist in documenting the recipient's legitimate need.</p> <p>Provide the Biosafety Office with:</p> <ul style="list-style-type: none"> • The recipient's name, institution, address, telephone number and email address. • The name of the toxin and total amount to be transferred. • The legitimate need claimed by the recipient.

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	<p>Transferors must report known or suspected violations of Federal Law or suspicious activity related to select toxins to the Biosafety Office (bsso@ehs.ufl.edu or 352-392-1591) or federal authorities by emailing to DSAT: LRSAT@cdc.gov or AgSAS: AgSAS@aphis.usda.gov or calling FSAP (DSAT: 404-718-2000 or AgSAS: 301-851-3300 option 3).</p>
<p>Personal Protective Equipment (PPE)</p>	<p>The following PPE is required to be worn when working with</p> <ul style="list-style-type: none"> • Long pants and full coverage shoes • Laboratory coat or gown • Latex or nitrile gloves • Safety glasses with side shields or goggles <p>Respiratory protection will be required if aerosols may be generated and it is not possible to use containment equipment or other engineering controls. Biosafety personnel will advise on the need for respiratory protection.</p>
<p>Security & Storage</p>	<p>will be stored in a locked in . If a lock box is used, the box must be affixed to the drawer/refrigerator/freezer such that someone cannot remove the lock box. Alternatively, the drawer/refrigerator/freezer must also be locked. Marine locks offer a convenient solution (http://www.marinelock.com/White-Refrigerator-Lock_p_8.html).</p>
<p>Inventory</p>	<p>A hardbound log book must be used to record toxin inventory.</p> <p>The inventory book must be kept in a secure location (i.e. locked drawer) and the key or combination must be under the control of the PI or an authorized individual designated by the PI. An authorized individual is a person listed on the Acute Toxin registration and trained by the PI as indicated in the Administrative Controls section above. Inventory will be checked by EH&S on a periodic basis.</p> <p>All inventory entries must be made using ink.</p> <p>Each bottle/vial of toxin received must be logged in the inventory and information recorded as follows: Toxin Name, Date Received, Source or Received From, Amount Received, Amount Removed/Used, Date of Removal/Use, Purpose of Use, Removed By, Signature and Amount Remaining.</p> <p>If toxin is aliquoted into multiple tubes, each aliquot must be documented in the inventory.</p> <p>The inventory must also include a section to indicate any destruction/inactivation of toxin as follows: Toxin Name, Date Destroyed, Amount Destroyed, Method of Destruction, Destroyed By, Signature, Witnessed By, Signature, Amount Remaining (if any)</p>

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	Any discrepancies, alterations or suspicious entries must be immediately reported to the PI and the Biosafety Office (392-1591).
Engineering Controls	<p style="text-align: center;">will be handled in a functional and certified whenever:</p> <ul style="list-style-type: none"> • Reconstituting stock vials • There is a potential for aerosols, splashes or splatters • Open manipulation of toxin solutions occurs • Opening toxin packages shipped to the lab <p>In-line HEPA filters will be used on all vacuum lines. Safety centrifuge cups or sealed rotors will be used if centrifuging materials containing _____ and the centrifuge cups or rotors will be opened inside the _____</p>
Safe Work Practices	<p>Purchase liquid toxin stocks whenever possible since work with powdered or dried toxins increases the risk of an inhalational exposure and poses a tendency for electrostatic attachment to gloves, weighing spatulas, etc.</p> <p>Keep only minimum amounts of toxin on hand.</p> <p>Use the “Buddy System” when working with concentrations/amounts of toxin near or exceeding the LD50 dose for a human or when conducting higher risk procedures. Higher risk procedures include: use of aerosol or splatter generating procedures, use of concentrated stocks or large quantities of toxins, work with powdered or dried toxins, use of needles or sharps, reconstitution of lyophilized toxin.</p> <p>Minimize the use of sharps; if sharps are required, safety sharps should be used (see http://webfiles.ehs.ufl.edu/Safety_Eng_Sharps.pdf).</p> <p>If a needle must be used to reconstitute toxin, use a vial adapter to minimize risk (http://www.vygonusa.com/products/small-vial-access-device_862_AMS-500).</p> <p>Use plastic ware instead of glassware (no glass Pasteur pipettes!) and disposable materials whenever possible.</p> <p>Set up the work area with all needed equipment/supplies prior to starting work.</p> <p>If toxin/toxin solutions must be transported, place the primary container inside a leak-proof, non-breakable secondary container lined with absorbent material and labeled with a biohazard sticker.</p> <p>Upon completion of work, wipe all work surfaces and equipment with _____ Allow _____ contact time.</p>

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	<p>Always wash hands after removing PPE and before leaving the work area.</p>
<p>Waste Disposal</p>	<p>Solid waste Solid non-sharp waste contaminated with or potentially contaminated with _____ will be collected in a red biohazard-labeled autoclave bag placed in a durable, leak-proof container inside the _____ . Sharps must be collected in a red sharps container.</p> <p>Upon completion of work, close the bag and spray with _____ .</p> <p>Autoclave the waste for a minimum of 1 hour and place inside the red bag lined biomedical waste box for incineration by Stericycle.</p> <p>Liquid waste Place plastic-backed absorbent pad in the working area of the _____ .</p> <p>Place primary container inside a leak-proof secondary container.</p> <p>Carefully add an equal volume of _____ into the toxin solution. Close the primary container and allow it to sit for a minimum of 1 hour.</p> <p>Fill out a yellow hazardous waste label indicating the concentration of the components in the waste bottle (including the amount and concentration of disinfectant) and affix it to the container of inactivated toxin.</p> <p>Never pour toxin solutions down the drain!</p> <hr/> <p>Store in the designated Hazardous Waste Satellite Accumulation Area located in _____ until pickup.</p> <p>Submit a Chemical Waste Pickup Request to have the waste picked up (https://connect.ufl.edu/ehs/HMM/Pages/ChemWaste.aspx) .</p>
<p>Spill Handling</p>	<p>The biological spill kit is located in _____ spills will be handled using _____ as follows:</p> <p>Donn PPE as specified above.</p> <p>Cover spill with paper towels or other absorbent material.</p> <p>Apply _____ to the spill, starting at the perimeter and moving towards the center, at a _____ .</p> <p>Allow disinfectant to sit for a minimum of _____ .</p>

