A. Summary
Sharps have the potential to cause puncture, cut, or scrape wounds. Personnel may be exposed to infectious, chemical, or radiologic materials from contaminated sharps. Before using sharps or potential sharps (e.g. glassware) in your experiments, perform a risk assessment that includes careful consideration of alternatives. With some thought and modifications of engineering controls and work practices, you may be able to eliminate this hazard completely from your research. If sharps use is still necessary, you can avoid injuries and exposure to contaminants from sharps if you handle and dispose of them correctly.

B. Safe Handling of Sharps
The following practices can be utilized to prevent potential needle stick injury or illness from needles and other sharps:

- Always be aware of where the sharp object is.
- When working with sharps, avoid placing your hand or part of your body in the “line-of-fire.”
  - For example, do not inject the needle into an item that is against your hand. The needle may go through the item and poke your hand behind it.
- Dispose of needles and syringes in puncture-resistant (hard-walled) containers.
  - For medical waste sharps, the sharps waste container needs to have the biohazard symbol and the word “Biohazard.” There is no requirement for the sharps container to be red.
  - For non-medical waste sharps (i.e. no human pathogenic potential), the container should NOT have the biohazard symbol or the word “Biohazard.”
- A sharps waste container should be placed as close as possible to the area where sharps are being used in order to facilitate safe disposal of sharps.
- Do not walk around the room with an uncapped needle.
- Place the needle and syringe, without cap, directly into a disposable sharps container.
- Do not break or shear the needle shaft from the hub. This may aerosolize the material.
• Do not bend the needle.
• Do not remove the needle from the disposable syringe.
• Do not re-cap a needle.
  o If you absolutely must re-cap a needle, do not hold the cap while attempting to reinsert the needle.
  Use the one-handed “scoop” needle recapping technique.
    • Place the cap on a surface (e.g. counter top) and carefully insert needle into cap (do not hold the cap).
    • Gently elevate the needle and cap, then push the cap against a hard surface (again, do not hold the cap) to ensure a tight fit onto the device.
• Do not manipulate the blade on a scalpel with your hands. Only perform this task if you have received training on how to do it safely. Use of disposable scalpels and blades reduces the need for further manipulation of the sharps after use. See: SafetyNet #146: Microtome Use Hazards and Precautions.
• Consider using safety-engineered sharps. Safety-engineered sharps have a built-in feature that effectively reduces the device user’s risk of a sharps injury.
• Do not handle broken glassware directly. Instead, use a brush and dustpan, tongs, or forceps to remove broken glassware. Substitute plasticware for glassware whenever possible.

C. Safe Disposal of Sharps

Never throw treated or untreated sharps containers or sharps directly into garbage cans or dumpsters. Sharps can puncture regular waste bags and endanger waste handlers. Do not pick up broken sharps with your hands. Use tongs or a disposable broom and dustpan to pick up broken glass. A variety of medical waste and non-medical waste sharps containers are available through the campus central storehouse. Contact EH&S via email or phone (530-752-1493) if sharps will be contaminated with mixed waste (i.e. any combination of biological, chemical, or radiological materials).
1. Scalpels, Needles, Syringes, and Laboratory Glass

Start

Determine if the Sharp Contains Hazardous Materials

Contains hazardous materials? 

Yes

Place into Hard-Walled Sharps Container

No

Contains lab glass? 

Yes

Place Clean Glass in Containers Labeled "Clean Lab Glass"

No

Place in Approved Medical Waste Container

Custodial Services Will Dispose of as Nonhazardous Waste

Stop

Contains medical waste (human pathogens)?

Yes

Place into Hard-Walled Sharps Container (with Biohazard Label)

No

Contains biohazardous materials (not human pathogens)?

Yes

Place into Hard-Walled Sharps Container

No

Contains hazardous chemicals?

Yes

Place into Hard-Walled Sharps Container

No

Contains radioactive materials?

Yes

Place into Hard-Walled Sharps Container

No

Contains biohazardous and hazardous materials?

Yes

Determine if the Disinfectant is Compatible with Hazardous Material

Disinfectant is compatible? 

Yes

Disinfect the Material and Place in Hard-Walled Sharps Container

No

Call EH&S for Assistance

Label with Hazardous Waste Label and Contact EH&S for Pick-up

Disinfectant is compatible? 

No

Label with Hazardous Waste Label and Contact EH&S for Pick-up

Stop

Contains biohazardous and radioactive materials?

Yes

Determine if the Disinfectant is Compatible with Hazardous Material

Disinfectant is compatible? 

Yes

Disinfect the Material and Place in Hard-Walled Sharps Container

No

Label with Hazardous Waste Label and Radioactive Tape

Place in Full Sealed Container in Dry Radioactive Waste Bos and Contact EH&S for Pick-up

No

Label with Contents, Room Number, and Place in Approved Medical Waste Container, or Contact EH&S for Pick-up

Stop

Contains biohazardous materials?

No

Place into Hard-Walled Sharps Container

Stop

Contains biohazardous and radioactive materials?

No

Place into Hard-Walled Sharps Container

Stop

Laboratory Glass Only

Scalpels, Needles, Syringes, and Laboratory Glass
• Does not contain hazardous materials:
  1. Place into a hard-walled sharps container (without biohazard label).
  2. Label the container with contents, room number and building, and contact EH&S for pick-up, or place inside a red biohazard bag in an approved medical waste accumulation container, if you have access to a medical waste accumulation site.

For non-contaminated laboratory glass:
  1. Place clean glass into a sturdy container marked “Clean Lab Glass.”
  2. Custodial Services will dispose as nonhazardous waste. See: SafetyNet #12: Why Didn’t the Custodian Pick Up my Trash for more information.

• Containing medical waste (human pathogens):
  1. Broken Glass Only: Spray with appropriate disinfectant and let it sit for the manufacturer-recommended contact time.
    o Refer to SafetyNet #127: Biological and Biohazardous Spill Response
  2. Place into a hard-walled sharps container (with biohazard label).
  3. Label with room number and building, and place in approved medical waste accumulation container.

• Containing biohazardous materials (not a human pathogen):
  1. Broken Glass Only: Spray with appropriate disinfectant and let it sit for the manufacturer-recommended contact time.
    o Refer to SafetyNet #127: Biological and Biohazardous Spill Response
  2. Place into a hard-walled sharps container (without biohazard label).
  3. Label with room number and building, and contact EH&S for pick-up, or place inside a red biohazard bag in an approved medical waste accumulation container, if you have access to a medical waste accumulation site.

• Containing chemical carcinogens or hazardous chemicals:
  1. Place into a hard-walled sharps container (without biohazard label).
  2. Label with a hazardous waste label, and contact EH&S for pick-up as a hazardous chemical waste.

• Containing radioactive materials:
  1. Place into a hard-walled sharps container (without biohazard label).
  2. Label with radioactive tape, and place full sealed container in a dry radioactive waste box, and contact EH&S for pick-up as radioactive waste.

For intact laboratory glass only (For broken glass e.g. spill conditions, see relevant section above):
• Contaminated with toxic or hazardous chemicals:
  1. Place into a hard-walled sharps container (without biohazard label).
  2. Label with a hazardous waste label, and contact EH&S for pick-up as a hazardous chemical waste.
• Contaminated with radioactive material:
  1. Place into a hard-walled sharps container (without biohazard label).
  2. Label with radioactive tape, and place full sealed container in a dry radioactive waste box, and contact EH&S for pick-up as radioactive waste.
• Contaminated with biohazardous agent and carcinogenic or hazardous material:
  1. If the chemical disinfectant for the biohazardous agent is compatible with the hazardous material, disinfect the material and place into a hard-walled sharps container (without biohazard label).
  2. Label with a hazardous waste label, and contact EH&S for pick-up as a hazardous chemical waste.
  3. If the disinfectant is not compatible with the hazardous material, call EH&S for assistance.
• Contaminated with biohazardous agent and radioactive material:
  1. If the chemical disinfectant for the biohazardous agent is compatible with the radioactive material, disinfect the material and place into a hard-walled sharps container (without biohazard label).
  2. If the disinfectant is not compatible with the hazardous material, call EH&S for assistance.
  3. Label with a hazardous waste label and radioactive tape, and place full sealed container in a dry radioactive waste box. Contact EH&S for pick-up as a hazardous chemical waste and radioactive waste.
2. Pipette Tips

Start

Determine if the Tips Contain Hazardous Materials?

Yes

Place Empty Tips in Red Biohazard Bag

Stop

No

Yes

Consider Using Two Red Biohazard Bags to Reduce Risk of Penetration

Place in Approved Medical Waste Accumulation Container

No

Yes

Contaminated with medical waste (but not with a human pathogen)?

Yes

Place Empty Tips in Clear Autoclavable Bag

Autoclave for 30 Minutes at 121°C, 15 psi

Place Clear Autoclave Bag into Solid Waste Container

No

Yes

Contaminated with hazardous chemicals?

Yes

Place into Hard Walled Sharps Container

Label with Hazardous Waste Label and Contact EH&S for Pick-up

No

Yes

Contaminated with radioactive material?

Yes

Place into Hard Walled Sharps Container

Label with Radioactive Tape, Place in Sealed Container, and Contact EH&S for Pick-up

No

Yes

Contaminated with biohazardous agents and carcinogenic or hazardous material?

Yes

Contact EH&S for Pick-up as Hazardous Chemical Waste

No

Yes

Contaminated with biohazardous agent and radioactive material?

Yes

Contact EH&S for Pick-up as Radioactive Chemical Waste

No

Yes

Contaminated with biohazardous waste (but not with a human pathogen)?

Yes

Place Empty Tips in Clear Autoclavable Bag

No

Yes

Contaminated with medical waste (but not with a human pathogen)?

Yes

Place Empty Tips in Clear Autoclavable Bag

No

Yes

Contaminated with medical waste (but not with a human pathogen)?

Yes

Place Empty Tips in Clear Autoclavable Bag

No

Yes

Contaminated with medical waste (but not with a human pathogen)?

Yes

Place Empty Tips in Clear Autoclavable Bag

No
Pipette tips are used to transfer liquids, and are generally disposable; however, they have the ability to cause puncture wounds because of the sharp tip.

- **Contaminated with medical waste (with a human pathogen):**
  1. Place the empty tips in red biohazard bag.
  2. Consider using two red biohazard bags to address risk of the tip penetrating a red biohazard bag.
  3. Place in an approved medical waste accumulation container.

- **Contaminated with biohazardous agent (not a human pathogen):**
  1. Place the empty tips in clear autoclavable bag with autoclave tape, then autoclave (121°C, 15 psi, 30 minutes).
  2. After a successful cycle of the autoclave, place clear autoclave bag into solid waste container (or dumpster).
    
    **Note:** Look at the autoclave cycle history, and ensure that the run went to completion to determine if the cycle was successful.

- **Contaminated with toxic or hazardous chemicals:**
  1. Place into a hard-walled sharps container (without biohazard label).
  2. Label with a hazardous waste label, and contact EH&S for pick-up as a hazardous chemical waste.

- **Contaminated with radioactive material:**
  1. Place into a hard-walled sharps container (without biohazard label).
  2. Label with radioactive tape, and place full sealed container in a dry radioactive waste box, and contact EH&S for pick-up as radioactive waste.

- **Contaminated with biohazardous agent and carcinogenic or hazardous material:**
  1. Contact EH&S for pick-up as a hazardous chemical waste.

- **Contaminated with biohazardous agent and radioactive material:**
  1. Contact EH&S for pick-up as a hazardous radioactive waste.