

Use of Streptozotocin (STZ)

Purpose:

To provide guidance for the use of Streptozotocin (STZ) in the laboratory and animal facility environment. STZ is used at UW-Madison in animal research for a variety of research applications, primarily Type 1 diabetes research.

Precautions:

The following information can be used to complete the Safety section of your animal protocol.

1. Chemical hazard agents – (Identify the category of the chemical): (*Select the following*)
 - Mutagen
 - Carcinogen
 - Reproductive Hazard/Teratogen
 - Other: Flammable Solid
2. Containment preparation – (Containment equipment required for the preparation of the chemical): (*Select one of the following*)
 - Fume Hood
 - OR**
 - Ducted Biosafety Cabinet (BSC)
3. Containment animals – (Containment equipment required for chemical administration and handling animals after exposure to the chemical): (*Select one of the following*)
 - Fume Hood
 - OR**
 - Biosafety Cabinet (BSC)

NOTE: For Rodents: Microisolators or other containment type housing is recommended.
4. PPE needed - (for handling live animals, carcasses, or animal waste/dirty bedding): (*Select the following*)
 - Exam gloves – nitrile
 - Safety glasses/goggles
 - Lab coat or disposable gown
5. Waste Disposal: (disposal of animal waste/dirty bedding from animals after exposure to the chemical) (*Select both options and include additional information for Other*)

- Bag animal waste/dirty bedding and place sealed bag in secondary container and place secondary container in regular trash.
- Other: Chemical Hazard Cage Labels are required on each individual cage containing the hazard and must contain the chemical health hazard symbol and “Agent, End date and Disposal method”. Labels are removed or crossed out when the special handling time has ended. *Chemical Hazard Cage Labels are available at www.ehs.wisc.edu/ehs-signage.

6. Carcass disposal: *(Select the following)*

- Pick up by EH&S for incineration

7. Chemical human risk: *(Add the following)*

- STZ is a carcinogen and suspected of causing cancer. Prolonged or repeated exposure either through ingestion or inhalation can damage bone marrow, blood, kidneys, or liver, and can affect the pancreas leading to diabetes. It is assumed mutagenic and possibly teratogenic in people. It may damage fertility or the unborn child. It is harmful if inhaled or in contact with skin.

Additional Information: Unused, expired, or unwanted mixtures of this compound that were intended to be applied to animals are regulated as Hazardous Waste Pharmaceuticals. When chemicals are ready for disposal, submit a request via the Chemical Disposal/Surplus Pickup Request Form. You must also fill out the paper Surplus Chemicals Form and keep it with the chemicals for pick up. List the chemicals as ‘Hazardous Waste Pharmaceuticals’ and place the chemicals inside a sealed container. This can be as simple as a plastic Ziploc bag or a rigid plastic container with a lid. Label the container with ‘Hazardous Waste Pharmaceuticals’ and the date of the first item that was added to the container. Waste items for disposal must be picked up within 1 year, and you can always have them picked up sooner.

<https://ehs.wisc.edu/disposal-services/chemical-disposal/chemical-disposal-surplus-pick-up-form/>

References:

“Streptozotocin”, Mark G. Papich, 2016

<https://www.sciencedirect.com/science/article/pii/B9780323244855005234>

“Streptozotocin SDS”

<http://www.sigmaaldrich.com/catalog/product/sial/85882?lang=en&region=US>