

## Standard Operating Procedures for N-Nitroso-N-methylurea (NMU)

### For Emergencies Refer to the Safety Data Sheet

#### Hazards:

Possible Carcinogen- may cause cancer

Possible Mutagen- may cause genetic damage

Possible Teratogen- may cause birth defects

Toxin- inhalation, ingestion, skin contact

Flammable

#### Chemical handling instructions:

##### Personal Protective Equipment (PPE):

Those handling NMU must wear chemically resistant gloves, lab coat, eye protection, a respirator and appropriate lab attire.

##### Preparing NMU solutions:

1. NMU solutions must always be prepared inside a certified chemical fume hood.
2. The work area should be prepared by laying down an absorbent work surface with the absorbent material facing up. Tape the edges of the absorbent material to prevent its movement in the fume hood.
3. Care should be taken to not generate any aerosol during the preparation or injection procedure. Always wash hands after removing gloves following handling NMU.
4. To clean objects that have come into contact with NMU use the Inactivation Procedures below.
5. Some objects (absorbent pads) must be bagged for disposal as hazardous waste.

##### Inactivation Procedures:

1. Prepare a 10% sodium thiosulfate, 1 % sodium hydroxide solution in a quantity great enough to soak all materials for 24 hours.
2. Pour sodium thiosulfate solution into a container within a chemical fume hood so that objects are completely submerged or saturated.
3. Leave objects in the sodium thiosulfate solution for 24 hours.
4. After 24 hours the solution can be poured down a drain. Wear appropriate PPE to prevent skin contact from splashes.

##### Waste Disposal:

1. Any leftover/unused NMU should be collected for disposal as hazardous waste.
2. All disposable materials contaminated with the chemical and residual chemical must be disposed of as hazardous waste.
3. Re-useable glassware and other non-porous materials (animal cages) can be decontaminated by following the Inactivation Procedures.
4. Used needles/syringes should be disposed in a sharps container destined for incineration.
5. Contact the Safety Office at x2697 or [SafetyOffice@unthsc.edu](mailto:SafetyOffice@unthsc.edu) for hazardous waste pickup.

## **Animal Experiments**

Research staff must inform DLAM in advance that NMU will be used, and arrangements will be made for appropriate animal housing. Cage cards must be labeled with "NMU" and a copy of this SOP should be made available to DLAM staff.

### Injecting animals with NMU:

1. Animals must be injected within a Class II Type B Biosafety cabinet or designated fume hood.
2. Animal handlers must wear PPE as described above.
3. All needles must be disposed of in sharps container – do not recap or bend needles.
4. Dispose of waste as described above.

### Cage handling:

1. DLAM staff should be made aware of NMU use and cage cards should be labeled with "NMU" after injection.
2. Animal cages and bedding are considered hazardous after an injection of NMU. The first cage change after each drug administration is to be done no sooner than 24 hours after the injection.
3. The bedding and cage are considered hazardous until the Inactivation Procedures have been performed. All bedding changes should be handled using procedures that minimize aerosolization.
4. After this first cage change there is no need for further special precautions to be taken regarding the animals or the cages as long as the animals have not received any more NMU.
5. After 24 hours from injection animal carcasses can be disposed of in a normal manner.