HARVARD
Campus Services
ENVIRONMENTAL HEALTH & SAFETY

LABORATORY SAFETY GUIDELINE

Bromodeoxyuridine (BrdU) [CAS No. 59-14-3]

All users of BrdU must review this document prior to using this substance. Bromodeoxyuridine (5'-bromo-2'-deoxyuridine, BrdU) is an odorless white powder, water soluble compound, which is an analogue of thymidine. It is commonly used to identify actively replicating cells in living tissues using an antibody assay to detect incorporated BrdU. Because BrdU can replace thymidine during DNA replication it can cause mutations.

HAZARDS

May cause genetic defects. Suspected of damaging fertility or the unborn child.

- Mutagen
- Teratogen
- Cytotoxin

Pregnant and lactating women should avoid exposure to BrdU and animals that have been administered BrdU. Contact your EHS Laboratory Safety Advisor for a consultation and risk assessment prior to working with BrdU.

PRECAUTIONS

Before starting work:

- Determine if you can use a safer, less toxic alternative in place of BrdU.
- Review the manufacturer's Safety Data Sheet and additional chemical information at ehs.harvard.edu/safety-data-sheets-sds.
- Ensure that a written experimental protocol including safety information is available.
- All staff must be trained in procedures for the safe handling, use, storage, and disposal of BrdU.
- Be familiar with general University emergency procedures in the EHS Lab Emergency Response Guide.
- Order the most dilute solutions available that will meet experimental needs. Order only the quantity that you need for your protocol.
- Identify the location of the nearest eyewash and shower and verify that they are accessible.

During work:

- AVOID INHALATION! Use a certified chemical fume hood or other approved ventilated enclosure when preparing BrdU solutions and loading syringes with solutions.
- AVOID CONTACT! Use appropriate personal protective equipment (PPE):
  - Wear a lab coat, long pants, shirt and closed-toed shoes when preparing solutions.
  - Use appropriate eye protection that provides splash protection.
  - Use nitrile gloves.
  - Wash hands thoroughly with soap and water each time gloves are removed.
- When working with animals and BrdU, follow Animal Biosafety Level–2 practices and procedures and any instructions that are specific to your animal facility for the use of toxic agents. Before using BrdU in animals, contact the Office of Animal Resources on the Cambridge Campus oar-public.fas.harvard.edu, and HCCM on the Longwood Campus iacuc.hms.harvard.edu.
- Keep container tightly closed when not in use. During transport use a sealed, non-breakable secondary container.

After completing the work

- Dispose of BrdU waste following Harvard University Hazardous Waste Procedures
  - Hazardous Waste Classification: Toxic
- Following preparation and use of BrdU, thoroughly clean the work area with soap and water.
- Return container to storage area following Harvard University Laboratory Chemical Storage Guide
  - Storage Group GS [General Storage]
  - Store in original containers.
- Wash hands thoroughly with soap and water before leaving the lab.

EMERGENCY PROCEDURES

First Aid

SKIN CONTACT
- Treat affected areas immediately by flushing skin with water for 15 minutes followed by thorough washing with soap and water. Remove any exposed clothing and shoes, as well as any jewelry.
- Seek medical attention

EYE CONTACT
- Using eyewash, flush eyes while holding eyelids open for at least 15 minutes.
- Seek medical attention.

INHALATION
- Remove person to fresh air.
- Seek medical attention.

INGESTION
- Do not induce vomiting;
- Rinse mouth with water if conscious;
- Seek medical attention

Spill Response

OUTSIDE FUME HOOD OR VENTILATED ENCLOSURE
- Alert others and evacuate to a safe distance and prevent entry.
- Contact the University Operations Center at (617) 49**5-5560** [HMS/HSDM (617) 43**2-1901**]
- Remain in a safe location until EHS or other response personnel arrive.

INSIDE FUME HOOD OR VENTILATED ENCLOSURE (< 500 ml)
- Direct contact with stock solutions should be avoided. Spills where you would have direct contact with a stock solution please contact EHS for assistance.
- If you are trained and confident, for small spills involving dilute solutions absorb material with paper towels or absorbent pads. Decontaminate the area with a 10% fresh bleach solution and let stand for 30 minutes. Re-wipe surface with 10% fresh bleach solution. In addition to the PPE described above, wear a second pair of nitrile gloves when cleaning up a spill.
- Collect all debris into an appropriate container, move to your Satellite Accumulation Area, label with Hazardous Waste Tag, and request an online waste pickup.
- Contact the University Operations Center at (617) 49**5-5560** [HMS/HSDM (617) 43**2-1901**] if you need support or technical assistance.