



BrdU

Environmental Health and Safety

UNIVERSITY OF WASHINGTON

5-Bromo-2-Deoxyuridine (BrdU) Administration, Handling & Disposal

DESCRIPTION

5-bromo-2-deoxyuridine (BrdU) is a base analog of thymidine with the thymine substituted by bromouracil. It is incorporated into DNA to substitute thymidine to measure DNA synthesis or cell proliferation. It can be purchased as a white crystalline powder or as a liquid solution.

Because BrdU can replace thymidine, excessive exposure to the chemical can cause mutations. It is a halogenated compound considered to be a strong teratogen, a mutagen and anticipated carcinogen. The routes of exposure include inhalation, ingestion, skin absorption, eye contact, and accidental injection. All personnel must read the manufacturer's Material Safety Data Sheet (MSDS) and receive hazard awareness training prior to work with BrdU.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

1. Nitrile gloves (disposable). Gloves should be changed immediately if contaminated, torn, or punctured. Gloves should be disposed of immediately after removal, even if they appear to be uncontaminated. Hands should be washed when gloves are changed.
2. Safety goggles
3. Face protection when splashing is possible.
4. Laboratory coat with long sleeves and tight-fitting elastic or knit cuffs, apron, or coveralls to prevent skin contact.
5. Respiratory protection (requires enrollment in UW's respirator program) may be required if aerosol potential exists when work is done outside of a fume hood or approved containment.

PRECAUTIONS FOR PREPARATION (reconstitution and dilution)

1. All agent preparation must be performed in a chemical fume hood or other approved containment.
2. All potentially contaminated disposable items (gloves used in prep) must be placed in a plastic bag (while in the containment) and then in the chemical waste container.
3. Preparations should be performed over plastic backed absorbent pads. Dispose of as noted above, immediately upon contamination.



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4. BrdU must be stored in a tightly closed container at -20 °C and away from oxidizing agents.
5. BrdU must be transported in labeled ziplock bags.
6. Leurlock syringes are recommended.
7. The fume hood or approved containment must be cleaned upon completion of tasks.
8. Hands must be washed upon completion of tasks.

PRECAUTIONS FOR AGENT ADMINISTRATION

1. Wear double gloves (nitrile) for all procedures involving BrdU administration.
2. Use leurlock needles, if possible.
3. Dispose all waste material in the appropriate chemical waste container.

WASTE COLLECTION AND DISPOSAL

1. BrdU has a chemical waste characteristic of persistence. Any full strength unused reagent, any mixtures containing 0.01% or more of BrdU, and any spill clean-up debris should be managed by EH&S as fully regulated chemical waste.
2. Seal filled chemical waste containers with the enclosed screw top.
3. For mixed waste (i.e. BrdU waste mixed with biohazard waste) consult with EH&S Environmental Programs at 616-5835 for disposal instructions.
4. For pick-up, complete a Chemical Collection Request Form and mail to Box 354110 or FAX to 206-685-2915

CLEANING SPILLS

1. Spills must be cleaned immediately by properly protected trained personnel.
2. Liquid Spills: should be cleaned immediately by personnel wearing a gown, goggles, two pairs of gloves (nitrile). Use absorbent pads to wipe liquid. The spill area should then be cleaned thoroughly with a detergent solution followed by clean water. Place waste in plastic bag and then in the chemical waste container.
3. Powder Spills: should be cleaned immediately by personnel wearing a gown, goggles, two pairs of gloves (nitrile). For powder spills outside of a fume hood or approved containment, non-essential personnel should be instructed to leave the laboratory and entrance should be restricted. In addition to the above specified PPE, A respirator (requires enrollment in UW's respirator program) should also be worn. The spill area should then be cleaned thoroughly with a detergent solution followed by clean water. Place waste in a plastic bag and then in the chemical waste container.
4. For questions on approaching a spill clean-up, contact the EH&S spill consultants at 206-543-0467 for guidance.



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ACUTE EXPOSURE OF SPILLS

1. In case of skin contact with BrdU, wash the affected area with soap and water as soon as possible for at least 15 minutes. Consult with Employee Health Clinic.
2. For eye exposure, flush with water for at least 15 minutes. Then go to the UWMC or HMC Emergency Department.
3. Report incident to supervisor. Supervisor reports the accident/injury on UW OARS.

EH&S CONTACT INFORMATION

1. BrdU Use: Research and Biological Safety Office: 206-221-7770
2. Spills: Environmental Programs Office: 206-543-0467
3. Chemical Waste Collection: Environmental Programs Office
 - Off Campus: 206-685-2849
 - Main Campus Zone 1: 206-616-0587
 - UWMC D-Wing of HSB Zone 2: 206-616-0586
 - HSB E-K Wing South Campus Zone 3: 206-616-3200
 - HMC Zone 4: 206-543-2931