

STANDARD OPERATING PROCEDURE:  
**4', 6-DIAMIDINO-2-PHENYLINDOLE (DAPI)**

PI: _____	Room & Building: _____
Department: _____	Research Group: _____
Date: _____	Pertains to Lab Protocol: _____

**DESCRIPTION**

4',6-diamidino-2-phenylindole (DAPI . CAS No. 28718-90-3) is a fluorescent stain that binds strongly to natural double-stranded DNA. It is used extensively in fluorescence microscopy, and it may be used to stain both live and fixed cells.

**USE & PROCEDURE**

Attach the experimental protocol(s) that involve the use of DAPI.

**POTENTIAL HAZARDS**

- Toxic
- Mutagenic
- Irritant (skin, eyes and upper respiratory tract)

Note: When preparing DAPI stock solution, use dimethyl sulfoxide (DMSO) instead of dimethylformamide (DMF), which has been linked to cancer in human (possible carcinogen by IARC).

**ENGINEERING/VENTILATION CONTROLS**

All operations involving the use of DAPI should be carried out in a chemical fume hood with the sash in the down position.

**RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT**

The level of skin and eye protection should be selected based on the potential for splashing and other forms of exposure.

*Minimum potential for splash & exposure:*

- ✓ Chemical splash goggles. Do not wear contact lenses when working with this substance.
- ✓ Single pair of nitrile gloves of 4-mil (0.11mm) thickness
  - Immediately replace with new gloves when splash occurs.
- ✓ Protective clothing (e.g. impervious lab coat, sleeves, closed-toed footwear)

## RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT (cont'd)

When using or transferring large quantities, or for spill clean-up:

- ✓ Chemical splash goggles.
- ✓ Double glove with nitrile or neoprene gloves
  - Double-gloving is recommended.
  - Immediately replace with new gloves when splash occurs.
- ✓ Chemical-resistant, impervious apron/smock/lab coat (PE or PVC) that ties in the back
  - Avoid using the traditional cotton-polyester white lab coat, which readily collects/absorbs compounds.
- ✓ Protective clothing (e.g. sleeves, impervious boots or PVC disposable shoe coverings, closed-toed footwear)

## MATERIAL SAFETY DATA SHEETS

MSDSs are available electronically via EHS Department's Web page:

<http://www.uos.harvard.edu/ehs/msds/>. An option, but consider collecting in a binder the MSDSs that arrive with each order.

## ADDITIONAL PRECAUTIONS

- Handling: Avoid contact with skin, eyes, and on clothing. Empty containers may contain material residue. Do not reuse. Minimize dust generation during handling.
- Storage: Store in freezer. Light sensitive material. Incompatible with strong oxidizing agents and bases.

## WASTE DISPOSAL

Refer to the *Laboratory Waste Guide* posted at

<http://www.uos.harvard.edu/ehs/longwood/HarvardLongwoodLabWasteGuide.pdf>

- Dispose of as hazardous chemical waste.

## EMERGENCY PROCEDURES

Refer to the emergency flip chart titled "*EHS Procedures and Response Guidelines*," posted in each laboratory and found on EHS's webpage at <http://www.uos.harvard.edu/ehs/longwood/>.

- For small spills, follow chemical spill response guidelines above. Avoid clean up procedures that generate dust. After removal, scrub the contaminated area with detergent and flush thoroughly with water. Absorb wash liquid and place in the disposable container for collection as hazardous chemical waste.
- For a large spill, vacate the lab, deny further entry, and call EHS for assistance.
- In the event of fire, evacuate and bar further entry. Activate fire alarm and leave the building. May emit toxic fumes under fire conditions.