Diaminobenzidine (DAB) is primarily used in peroxidase immunohistochemistry and in the production of chemicals and high temperature resistant materials. This organic compound is typically stable under normal conditions, however, it is oxidized in the presence of strong oxidizers, peroxidase, and hydrogen peroxide.

What are the hazards associated with DAB?
DAB is both mutagenic and carcinogenic as determined by the National Toxicology Program, U.S. Department of Health and Human Services. It is classified as a hazardous substance per 29 CFR 1910.1200. Exposure to DAB may accentuate any pre-existing dermatitis condition and may also cause sensitization from repeated skin contact.

Additionally, irritation to the eyes and upper respiratory tract is known to be reported from short-term exposure and is likely to have adverse effects to the lower respiratory tract from repeated/long-term exposure.

What personal protective equipment (PPE) is appropriate when working with DAB?

- Safety glasses – Minimal level of protection.
- Safety goggles – Completely seals the eye area and is appropriate for splash hazards e.g., handling corrosive liquids.
- Disposable nitrile gloves – Wear two layers for added protection. Thick nitrile gauntlets may be worn as a substitute.
- Standard Cotton lab coat – Protects against toxic materials. Flame Resistant or Nomex lab coats may be used as a substitute.
- Closed-toe shoes or work boots – Non-permeable shoes (leather, rubber)

Is neutralization of DAB recommended before disposal?
No. Neutralization of DAB is not required prior to disposal. Neutralization of DAB employs potassium permanganate (strong oxidizer) and sulfuric acid (corrosive, dehydrating agent) and would introduce additional hazards to the waste stream.

How do I dispose of DAB safely?
Responsible parties handling waste must:

- Segregate waste streams and ensure compatibility; wear appropriate PPE; and clean up small spills.
- Ensure containers have a vented cap (e.g., Circumvent™, Nalgene funnel); keep capped when not adding waste.
- Store waste containers in secondary containment that exceeds the collective volume of the containers.
- Request a waste pick-up when the container is 80% full or before 90 days whichever comes first.

Additional Information
Hazardous Waste Labeling Fact Sheet
Hazardous Waste Disposal Fact Sheet
Email hazmat@usc.edu or labsafety@usc.edu for more information.