

STANDARD OPERATING PROCEDURE FOR BASES

I. POTENTIAL HAZARDS:

- Bases are generally chemicals containing the hydroxide (OH⁻) anion, or materials that form hydroxide when added to water, e.g., carbonates. Bases are “corrosives” (like acids) and will destroy body tissue. The extent of injury depends on factors such as the type and concentration of the chemical, the route of exposure, the type of tissue contacted, and the speed used in applying emergency measures. Skin contact with strong bases usually goes unnoticed, since pain does not occur immediately.
- The eyes are especially susceptible to bases and must be immediately flushed with water for at least 15 minutes if exposure occurs. Inhaling airborne dust and mist from bases irritate the nose, throat, and lungs. Pulmonary edema, a severe irritation of the lungs resulting in fluid production that prevents the transfer of oxygen to the bloodstream, can also occur from extreme airborne exposures. Secondary toxic effects may occur if the material is absorbed from the lungs into the bloodstream. The extent of these effects depends on the concentration in air and the duration of exposure.
- Dilution of bases is exothermic and can result in the surface boiling and spattering. Therefore, always add the base to the water, thereby having a more dilute solution surface heating. This is particularly true for potassium hydroxide. Concentrated solutions of inorganic bases are not in themselves flammable.

II. ENGINEERING CONTROLS:

- An eyewash and safety shower must be available in the immediate work area for any work with bases.
- All concentrated bases should be transferred and dispensed in an annually certified laboratory chemical fume hood with the sash at the certified position or lower.

III. WORK PRACTICE CONTROLS:

- Bases can be only used in areas properly equipped with a certified eye wash/safety shower that can be reached within ten seconds.
- A relatively cool, dry environment free from extremes of temperature--humidity should be maintained.
- Follow any substance-specific storage guidance provided in Safety Data Sheet documentation.
- Bases should be stored in a manner that separates them from incompatible materials. Each base should be stored in a manner consistent with its properties.
- Stored in material that is base-resistant; this facilitates flushing and other cleanup procedures in the event of leaks or spills.

- Store on low shelves or in base storage cabinets.
- Use bottle carriers for transporting materials when possible.
- Store solutions of inorganic hydroxides in polyethylene containers.
- Use small quantities whenever possible. Monitor your inventory closely to assure that you have tight control over your material.

IV. PERSONAL PROTECTIVE EQUIPMENT (PPE):

- Chemical splash goggles (over prescription glasses)
- Apron
- Pants or skirts that extend to below the knee
- Shoes that completely cover the feet
- Clothing made of natural fibers

V. TRANSPORTATION AND STORAGE:

- Transport corrosives in secondary containment, preferably a polyethylene or other non-reactive acid/solvent bottle carrier.
- Store away from incompatibles.
- Store in well-ventilated areas with secondary containment, such as a non-reactive plastic bin.
- Store below eye level.
- Avoid storing on the floor. If storing on the floor is necessary, use secondary containment.

VI. WASTE DISPOSAL

- Handle and store corrosive wastes following the guidelines above while accumulating wastes and awaiting chemical waste pickup. Waste must be disposed of following Columbia State's Hazardous Waste Policy 06-04-00. Contact the director of Facility Services and Safety for assistance for determining appropriate methods for disposal.