IN CASE OF BASE SPILL

Use:
SpillSolv® Spill Kit

Note: Caustic Powder will neutralize up to 1 L of Sodium Hydroxide (50 %), 1.2 L of Potassium Hydroxide (45 %) and 2 L of Ammonium Hydroxide (30 %).

Contents:
(1) Pair Goggles
(1) Large Commercial Sponge
(2) 1 kg Acid Neutralizing Powder Bottles
(2) 900 g Liquid Caustic Neutralizing Powder Bottles
(2) 470 g Volatile Solent Powder Bottles
(1) Pair Industrial Gloves
Plastic Bags
Plastic Scoops

PROCEDURE:

1. Evacuate employees from spill area.
2. Put on appropriate personal protection equipment for exposure to base (i.e. gloves, goggles, lab coat, respirator or mask).
3. Ventilate the contaminated area.
4. Check the airflow in the spill area. If possible, approach the spill from the upwind side. If spill must be approached from the downwind side, wear a respirator and avoid inhaling vapors and aerosols. Contain the flow of the spill if necessary.
5. If possible, dilute a concentrated base spill with water before using SpillSolv® Caustic Powder to reduce the amount of heat and fumes. Dilution with water also keeps the system liquid, which helps drive the neutralization reaction to completion.
6. Apply the SpillSolv® Caustic Powder around the edge of the spill area first (diking) to prevent the spilled base from spreading. Apply the powder slowly to avoid splashing the spilled material and enlarging the spill area.
7. When diking is complete, begin applying the powder inward from the edges, working towards the centre of the spill. Cover the entire spill in this manner.
8. Observe the powders colour, the original purple colour will turn to pinkish-purple initially, then the mixture of powder and caustic will begin to slowly turn yellow. When sufficient SpillSolv® Caustic Powder has been applied to neutralize the spill, the yellow colour will become permanent. This may take several minutes and involve mild steaming.

9. While the neutralization reaction is taking place, re-examine the spill area for pools of liquid base that do not appear to be covered by powder. If found, such liquid areas will require additional treatment with SpillSolve® Caustic Powder.
10. Once all steaming has stopped, the neutralization liquid base/ SpillSolv® Caustic Powder mixture may begin to solidify into a slurry, which may be hot.
11. Carefully mix the slurry material with the scoop provided in the kit to be sure that all liquid is thoroughly mixed with the powder, then let the mixture stand to cool. The SpillSolv® Caustic Powder has been thoroughly mixed with the base spill if the indicator remains yellow when the residue is mixed with a small amount of water.
12. Once the mixture has cooled, using rubber gloves, sample a small portion of the solidified material for inspection and pH testing.
13. Place the small sample of the cooled residue in a non-metallic container with some distilled or deionized water to check pH.
14. Add about 80 – 100 mL of water to about 10 mL of residue. Some foaming may occur and the mixture may become warm.
15. After the reaction has subsided, add an additional 50 mL of water slowly to the container. If there is severe foaming or a substantial amount of heat generated, the test must be discontinued since the spill material has not been neutralized. Additional powder should be applied to the spill to achieve neutralization.
16. Check the pH with pH paper or a pH meter. A pH of 7 or lower indicates that the base spill has been neutralized.
17. After confirming that the mixture is neutralized an adsorbent may be used for the remaining liquid to make disposal easier. Scoop the material into appropriate waste containers and dispose in accordance to regional, provincial and federal regulations.

Any used pieces of the spill kit must be replaced **immediately**.

For more information on sodium hydroxide, please refer to the following link:
http://www.ccohs.ca/oshanswers/chemicals/chem_profiles/sodium_hydroxide.html