Acid Waste

As with other chemicals, researchers should be aware of how to dispose of any waste before starting an experiment. Acid waste should not be allowed to accumulate, but treated and sent for disposal as soon as possible.

Before any action, the type of acid should be checked. Acids such as hydrofluoric, perchloric and nitric have specific hazards and, therefore, specific precautions must be made for disposal. Any concentrated mineral acid is much more hazardous than the dilute form.

These guidelines for neutralization of acid waste can be used for dilute hydrochloric, hydrobromic, sulfuric or phosphoric acids.

A volume of dilute acidic waste, up to 500 mL, should be transferred to a large beaker or Erlenmeyer flask (at least 2 L for 500 mL of waste). This should be set up with an external cold water bath, a stirrer, a thermometer and a pH meter. Dilute sodium or potassium hydroxide can then be added cautiously until pH7 is reached. During addition, the temperature must be monitored because neutralization is exothermic. If the temperature rises to fast, addition must be stopped. Ice may be added directly to prevent over heating. When pH7 is reached, the waste is neutral and may be sent for disposal.

Note
1. During this procedure, PPE must be worn, including safety glasses, lab coat and gloves. Long pants and covered shoes must be worn. The procedure should be carried out in a well ventilated fume cupboard.
2. A full risk assessment must be completed and approved before this procedure is carried out.
3. If the quantity of acid is known, then the quantity of base may be calculated.
4. The procedure should only be carried out by someone familiar with handling chemicals.

Prepared by,

Approved by,