

VIII. METALWARE AND CLEANER

A. METALWARE

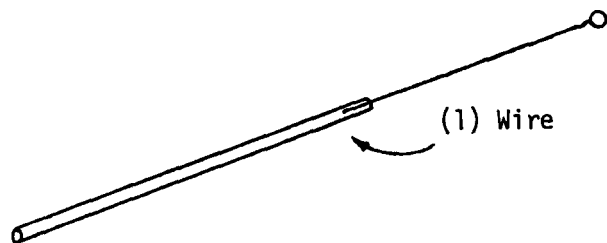
The items in this section are small pieces of metalware which can be constructed from scrap strapping, wire and the like. **Items** which can be improvised from normal household items, such as knives, have not been included.

B. CLEANER

This item can be used to clean the test tubes utilized in chemistry.

A. METALWARE

Al. Flame Test Wire



a. Materials Required

<u>Components</u>	<u>Qu</u>	<u>Items Required</u>	<u>Dimensions</u>
(1) Wire	1	Transfer Loop	BIOL/VII/A3

b. Construction

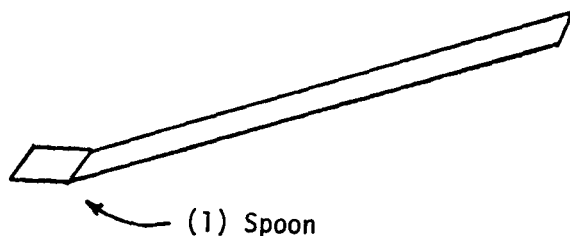
(1) Wire

See BIOL/VII/A3 for construction details.

c. Notes

(i) Use this wire to flame test compounds. Simply get a small amount of the chemical caught in the wire loop and hold it in a hot flame to observe the color of the flame.

A2. Deflagrating "Spoon"

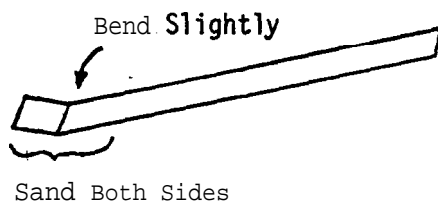


a. Materials Required

<u>Components</u>	<u>Qu Items Required</u>	<u>Dimensions</u>
(1) Spoon	1 Metal Strapping (A)	About 10 cm x 3 cm

b. Construction

(1) Spoon



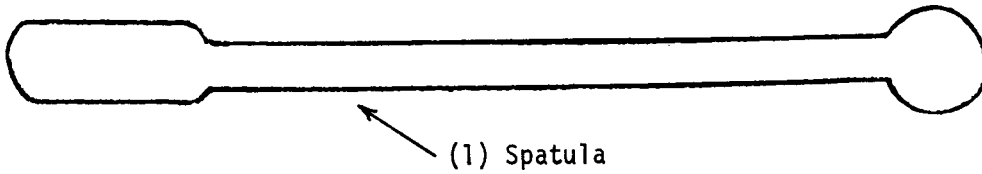
Carefully sand off all the paint from one end of the metal strapping (A) so that there is only bare metal. Make a slight bend in this end about 1.0 cm from the end.

c. Notes

(i) To use the deflagrating spoon, place a small amount of the chemical to be heated on the bent portion of the strapping. Hold the spoon in a holder (e.g., IV/A4) and hold the chemical in the flame of a burner until it burns or melts. The deflagrating spoon is used mainly in doing flame tests on unknown compounds.

(ii) When the end of the spoon becomes contaminated, either clean it with sandpaper or simply cut it off, sand the new end, and bend it as before.

A3. Spatula

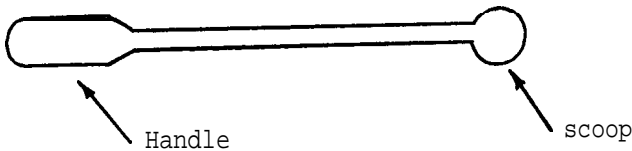


a. Materials Required

<u>Components</u>	<u>Qu</u>	<u>Items Required</u>	<u>Dimensions</u>
(1) Spatula	1	Tin Can or Strapping Wire (A)	20.0 cm long, 3.0 cm wide

b. Construction

(1) Spatula



Cut a piece of tin can metal (A) or a piece of wire strapping to the desired length and width. Cut the metal to the shape illustrated.

Make a depression in the scoop by hammering a steel ball in the circle.

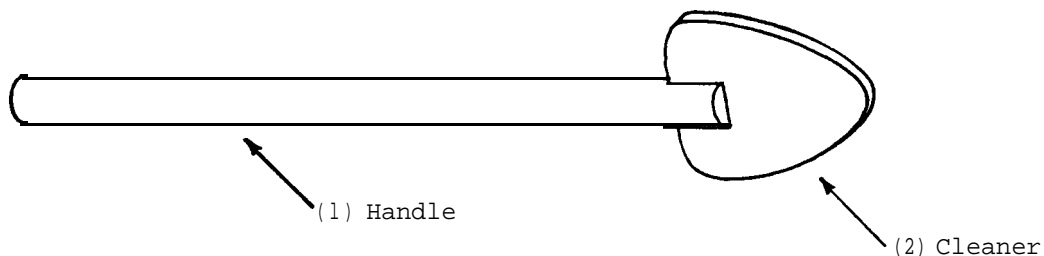
Depress the center of the handle slightly for easier handling.

c. Notes

(i) This spatula may be converted to a deflagrating spoon by bending the handle backward at a 90' angle with the shaft and bending the scoop forward at a 90' angle with the shaft.

B. CLEANER

B1. Test Tube Cleaner or Spatula

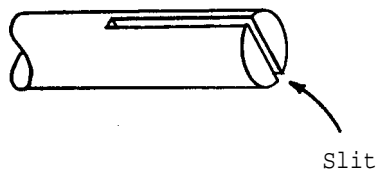


a. Materials Required

<u>Components</u>	<u>Qu</u>	<u>Items Required</u>	<u>Dimensions</u>
(1) Handle	1	Wooden Dowel (A)	25 cm long
(2) Cleaner	1	Piece of Rubber Inner Tube (B)	5 c m x 5 c m

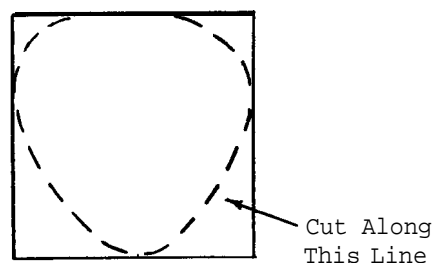
b. Construction

(1) Handle



Use a piece of wooden dowel (A) about 25 cm in length. Make a slit about 2.0 cm long in the center of one end of the handle.

(2) Cleaner



Cut a triangular piece of rubber (B) about 5.0 cm long from a discarded inner tube. Insert this in the slit made in the handle. Drive a small nail through the handle and cleaner to hold them in place, if necessary.