

BRASHER SILVERING PROCESS

MATERIALS

- A. 0.15M AgNO₃ solution (2.50 g AgNO₃ dissolved in 100 mL of distilled water),
- B. 0.80M KOH solution (4.50 g KOH dissolved in 100 mL of distilled water)
- C. 0.45M dextrose solution (7.80 g dextrose in 100 mL of distilled water)
- D. Concentrated NH₄OH

PROCEDURE

Glass item must be clean and free of organic matter. A hot strong detergent works well, but avoid use of dichromate cleaning solutions.

Add two parts of AgNO₃ solution into a beaker and add concentrated NH₄OH dropwise. The concentrated NH₄OH will cause a cloudy brown precipitant to form. Continue to add concentrated NH₄OH, one drop at a time, until the solution is clear again. Add one part of KOH solution which forms a dark brown or black precipitant (if the precipitant is light brown or green, discard the solution and begin again). Use the solution immediately.

Add enough of the dextrose solution to completely coat the inside of the item to be silvered. Discard the dextrose solution and immediately add the solution of AgNO₃ and KOH to the item. Vigorously shake the item to produce a better film. After silvering, discard the solution and rinse the flask with distilled water.

If a small amount of latex paint is allowed to coat the inside of the item it will preserve the silver process.

REACTION

The metallic silver deposits when the silver ion oxidizes the aldehyde part of the sugar molecule.