

Black Magic Woman

(Carlos Santana)

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Materials Required:

- one gallon plastic jug (juice bottle).
- 500 mL beakers (2)
- double stick tape
- potassium iodide
- sodium bisulfite
- liquid laundry starch
- liquid laundry bleach (Clorox)
- distilled water (chlorine free)
- Starch/iodide solution:

Dissolve 3.5 grams of potassium iodide in 80 mL of distilled water. To this add 80 mL of liquid laundry starch.

Pre-demonstration Preparation:

1. Label one 500 mL beaker - bleach drops - and add 3 drops of bleach.
2. Label the other 500 mL beaker - bleach - and add 5 mL bleach.
3. Add 30 mL of the starch/iodide solution to the gallon container and add 3/4 of a gallon of distilled water.
4. Place a loop of double stick tape on the inside of the cap to the gallon container. Shake the cap in a bag containing sodium bisulfite, remove, and shake off any excess solid. (Sodium bisulfite will be stuck to the tape.) Gently place the cap gently on the gallon jug.

The Demonstration:

1. When the music begins, enter dressed in appropriate attire (e.g. a witch costume).
2. Pick up the beaker labeled "bleach drops." Turn it upside down to give the illusion that it is "empty."
3. Pour 100 to 200 mL from the gallon jug into the beaker and react to the blue/black color that is produced.
4. Next pick up the beaker labeled "bleach" and without turning it upside down create the impression that it is empty.
5. Pour the contents of the "bleach drop" beaker into the "bleach" beaker and react to the color change. The solution is now clear.
6. Carefully remove the cap from the gallon jug and pour the contents of the "bleach" beaker into the jug. React to the color change from clear to blue/black.
7. Screw the cap tightly onto the jug and shake it vigorously.
8. Exit with the music fading displaying the jug that now contains a clear solution.

Safety Precautions:

Sodium bisulfite has a pungent odor (SO_2). Some people are hypersensitive to sulfites and should avoid direct contact with them.

Disposal:

The final solution may be disposed of down the drain.

Reference:

Charlie Kline of Science Explosion, personal communication.