

Phenolphthalein

Learn how to make phenolphthalein solution, used as a pH indicator.

Materials

Phenolphthalein (item #879910)
Distilled Water (item #858621)
Ethyl Alcohol (item #861282)
Glass Bottle (item #716292)
Stir Bar
Magnetic Stir Plate (item #701023)
Erlenmeyer Flask, 100-mL (item #731031)
Graduated Cylinder (item #721744)
Label

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Item Numbers

879963, 879965, 879991, 879993, 879995

Procedure

1. Dissolve 1 g of phenolphthalein powder in 40 mL of 95% ethyl alcohol.
2. Add 120 mL of distilled water and mix thoroughly.

Notes

- The proportions of alcohol and distilled water can be varied slightly.

Label Information

Phenolphthalein

Flammable

Date Prepared: _____

Initials of Preparer: _____

Health Risk: 2

Flammability: 3

Reactivity: 2

Applications

Phenolphthalein is primarily used as an indicator from pH 8.2 (colorless) to 10.0 (pink). To use phenolphthalein to demonstrate the release of carbon dioxide in exhalation, add 3 to 5 drops phenolphthalein to 100 mL of tap water. Make the solution slightly alkaline (pink) by adding a few drops of 0.04% sodium hydroxide solution. Using a straw, breathe into the solution and observe the solution turn colorless as the acidity increases.

Reference

Brandwein, P. F., and E. Morholt. 1986. *A sourcebook for the biological sciences*, 3rd ed. Orlando, FL: Harcourt Brace Jovanovich, 1986, pp. 302, 308.

Dunnick, J. K. and J. R. Hailey. 1996. Phenolphthalein exposure causes multiple carcinogenic effects in experimental model systems (PDF). *Cancer Research* 56 (21):4922–6. PMID 8895745.