

CHALK CHROMATOGRAPHY

Chromatography is a technique used to separate components of a mixture, in this case the different pigments in dyes.

Difficulty: Easy

Time Required: 10–15 minutes

Ingredients:

- Chalk
- Alcohol (isopropyl alcohol or rubbing alcohol works best)
- Small jar or cup
- Plastic wrap
- Ink, dye, or food coloring

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DIRECTIONS

Chalk Chromatography Recipe

1. Apply your ink, dye or food coloring to a piece of chalk about 1 cm from the end of the chalk. You can place a dot of color or stripe a band of color, or multiple colors.
2. Pour enough rubbing alcohol into the bottom of a jar or cup so that the liquid level is about half a centimeter. You want the liquid level to be below the dot or line on your piece of chalk.
3. Place the chalk in the cup so that the dot or line is about half a centimeter higher than the liquid line.
4. You can seal the jar or put a piece of plastic wrap over the cup to prevent evaporation.
5. You should be able to observe the color rising up the chalk within a few minutes. You can remove the chalk whenever you are satisfied with your chromatogram.
6. Let the chalk dry before using it for writing.

Tips

- Chromatography is a process which separates the substances in a mixture. The relative sizes of molecules, or the charges on ions influence the rates of separation.
- Chalk chromatography is used to separate the components of dyes, inks, food coloring and other mixtures by their molecular size and their solubility in a polar solvent such alcohol.
- A polar solvent means the molecules in the liquid have a slight electrical charge due to their shape.
- Use different kinds of marker with the same color. Are the results the same?

