

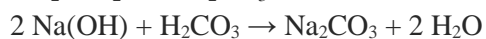
Invisible Ink

How can you make an invisible ink?

Answer

A: pH-indicator is a simple way.

The most common indicators for the ink are thymolphthalein (blue) or phenolphthalein (red); these indicators are mixed with a basic solution of NaOH (colourless) that changes its colour upon exposure to air because it becomes more acidic. Basically, the water in the ink reacts with CO₂ in the air forming carbonic acid which then neutralizes the base sodium hydroxide to form sodium carbonate. The reaction causes colour change of the indicator. So, if you apply the ink to a fabric and leave it for a few seconds, the stain will disappear. If you brush over the spot with a cotton ball that has been immersed in ammonia the colour will return.



Other inks are based on heat-activated materials such as lemon juice, white wine or milk. Once they dry using radiator, oven or hot light bulb, the ink becomes visible.