

How do color-changing “mood” pencils work?

These pencils are a product of nanoscale technology. There are two coats of paint. The inner coat is the warm condition color, and the outer coat is the cold condition color. That outer coat is the heat-sensitive layer. It has micro-capsules that contain a mixture of an activator and a dye. When the pencil is cold, the activator is a solid, and does not react with the dye.



When they get warm, the molecules in the activator melt, and the liquid changes the dye to become transparent, that allows the paint layer below to appear. As the pencil cools, the activator solidifies again and the reaction stops. The microcapsules are so small that we can't see, feel, or otherwise detect that there is liquid inside the coating. The effect is not perfect, though, so the two colors are always related to each other. Green turns to yellowish green, red to pink, purple to pinkish violet, and orange to yellow.

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