

In the first case: The reason for the appearance of the blue color in the filter is due to the ability of the methylene blue particles to pass through the pores of the filter paper, in addition to the force of attraction (bonding) between the methylene blue particles and the water molecules. The force of attraction between water molecules to each other is stronger than the force of water molecules attracting the dye, which leads to the rush of the dye molecules to accumulate on the surface of the charcoal particles, leaving the water molecules to pass through the clear filter paper free of the dye colored methylene blue particles. The pores of the filter paper, so that the filter becomes blue again