Photodissociation of species entrained in solid matrices potentially leads to reassociation of the newly formed fragments. After fixing CH₂ClI in various atomic and molecular matrices, we measure ultrafast transient absorptions to monitor the photolysis of the precursor and isomerization to form iso-CH₂ClI. We probe the two lowest energy electronic absorption features of CH₂Cl-I near 435 nm and 800 nm. Probing the low energy side of the 435-nm band interrogates the formation and subsequent cooling of the hot, newly formed products. We find that the recoiling fragments, CH₂Cl and I, lose large amounts of energy to the environment in the initial collision with the matrix cage, which leads to formation of the isomer.