The photodecomposition of ketene under interstellar conditions and how the resulting photofragments may recombine in the 3-300 K temperature range could play an important role in investigations related to astrochemistry and astrobiology. Using a combination of bulk ice and rare-gas matrix isolation studies coupled to FTIR spectroscopy, the present work aims to understand the VUV photochemistry of CH$_2$CO in solid phase to mimic the photochemistry of organic species trapped in the icy interstellar grains. We show that the photolysis of CH$_2$CO depends strongly on the environments where it is trapped. The VUV photolysis of CH$_2$CO/Ne in dilute phase leads to kinetically stable and instable species such as CO, C$_2$H$_2$, CH$_4$, C$_2$H$_4$, C$_2$H$_6$, H$_2$CO, CH$_3$CHO, HCCO, C$_2$O, C$_3$O and C$_4$O. However, the same experiment carried out in condensed phase shows that the photolysis of CH$_2$CO ice produces mainly an organic residue which is directly observed at 10 K and remains stable in solid phase at 300 K. The IR spectroscopy analysis suggests that the resulting organic residue could be a polyketone formed at 10 K through the VUV photo-polymerization of ketene.