The thesis aims at change-point estimation in gradual change models. Methods available in literature are reviewed and modified for point-of-stabilisation ($PoSt$) context, present e.g. in drug continuous manufacturing. We describe in detail the estimation in the linear $PoSt$ model and we extend the methods to quadratic and E_{max} model. We describe construction of confidence intervals for the change-point, discuss their interpretation and show how they can be used in practice. We also address the situation when the assumption of homoscedasticity is not fulfilled. Next, we run simulations to calculate the coverage of confidence intervals for the change-point in discussed models using asymptotic results and bootstrap with different parameter combinations. We also inspect the simulated distribution of derived estimators with finite sample. In the last chapter, we discuss the situation when the model for the data is incorrectly specified and we calculate the coverage of confidence intervals using simulations.