The present invention relates to the heat treatment of a precursor that reacts with temperature and that comprises in particular the steps of: preheating or cooling a heat transfer gas to a controlled temperature and injecting the preheated or cooled gas over the precursor. Advantageously besides the temperature (T) of the heat transfer gas the following are also controlled: the flow rate (D) of the gas at the injection over the precursor and also a distance (x) between the precursor and an outlet (5) for injection of the gas over the precursor in order to finely control the temperature of the precursor receiving the injected gas.