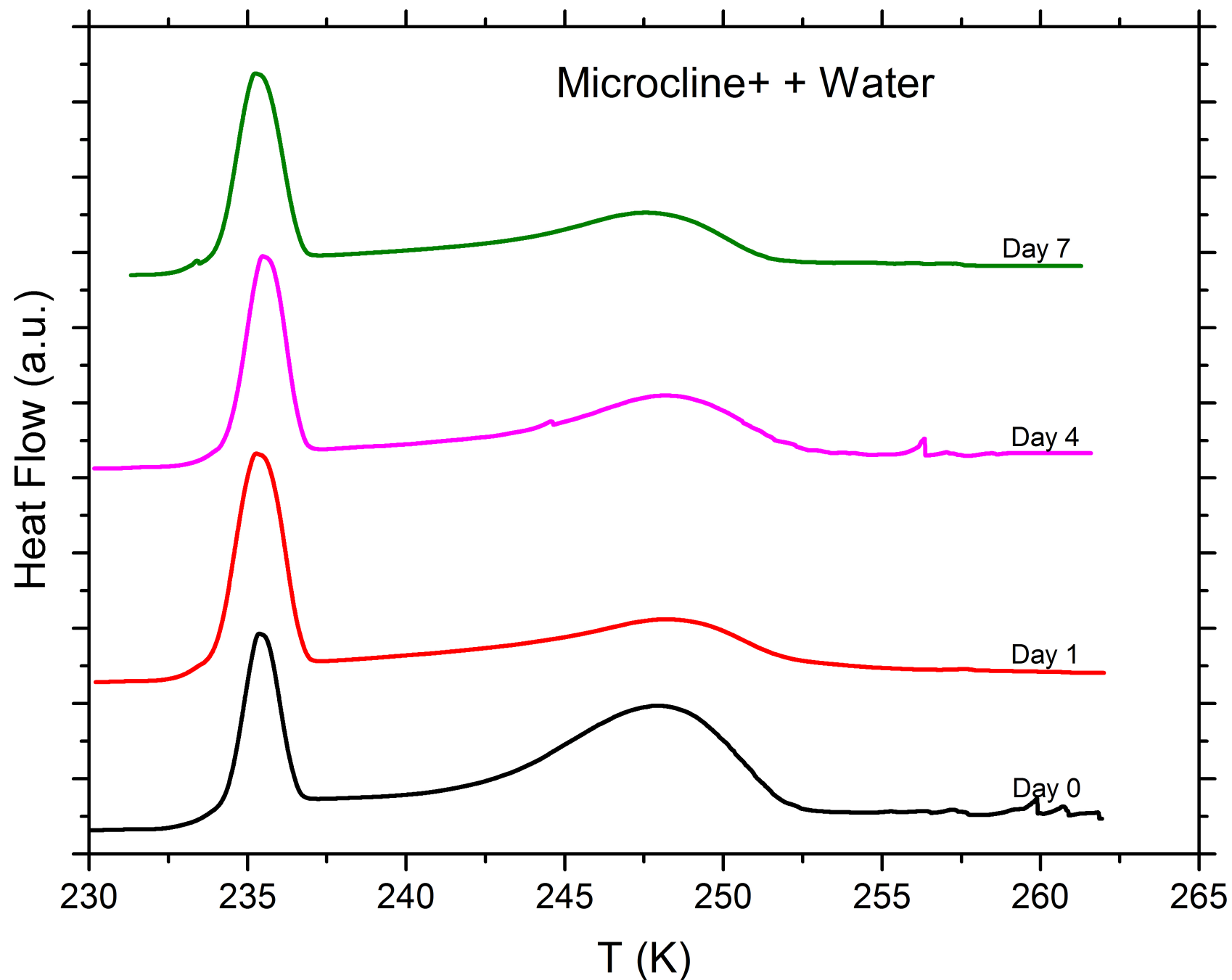
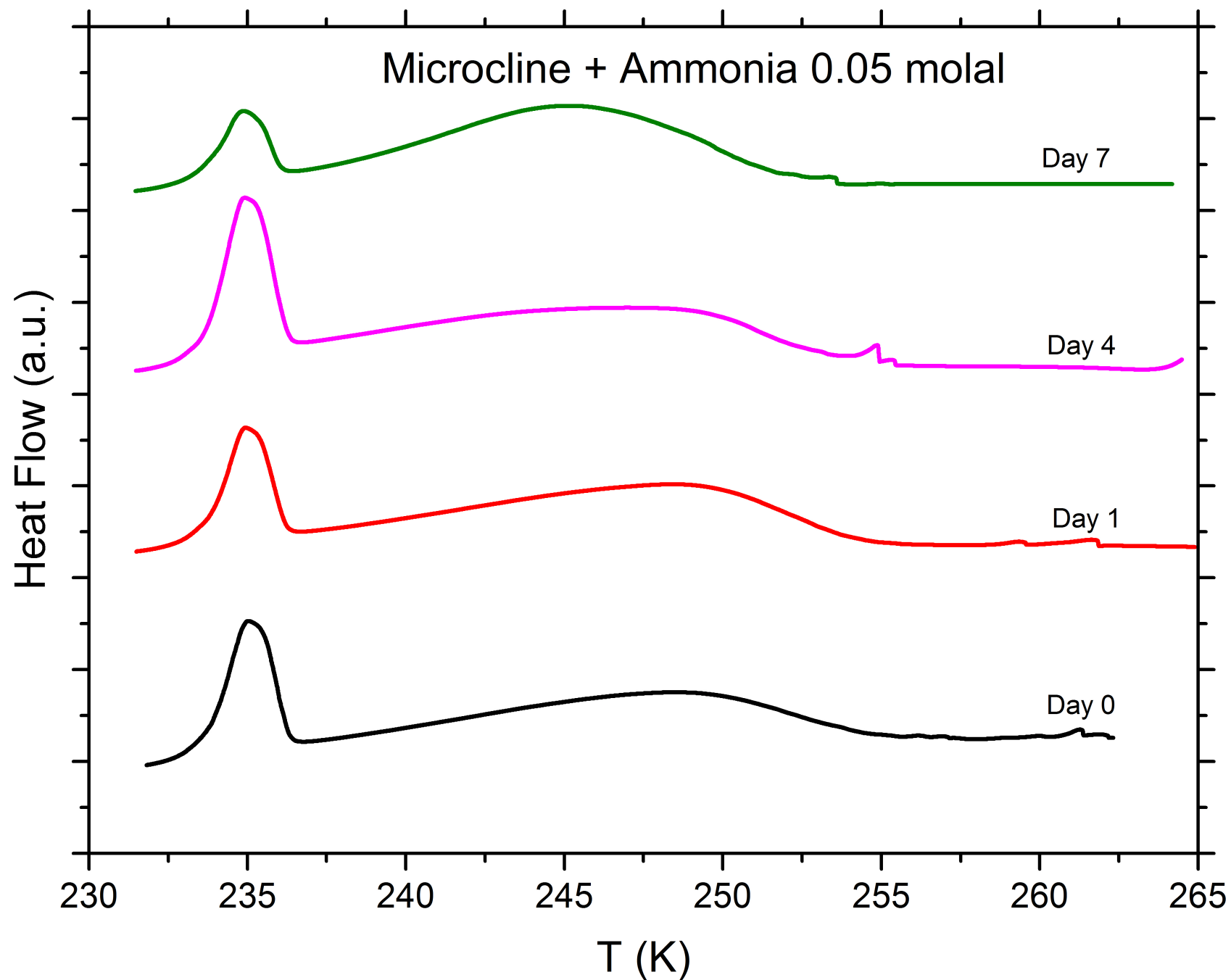


## **S2 Immersion freezing experiments with microcline emulsions as a function of aging**

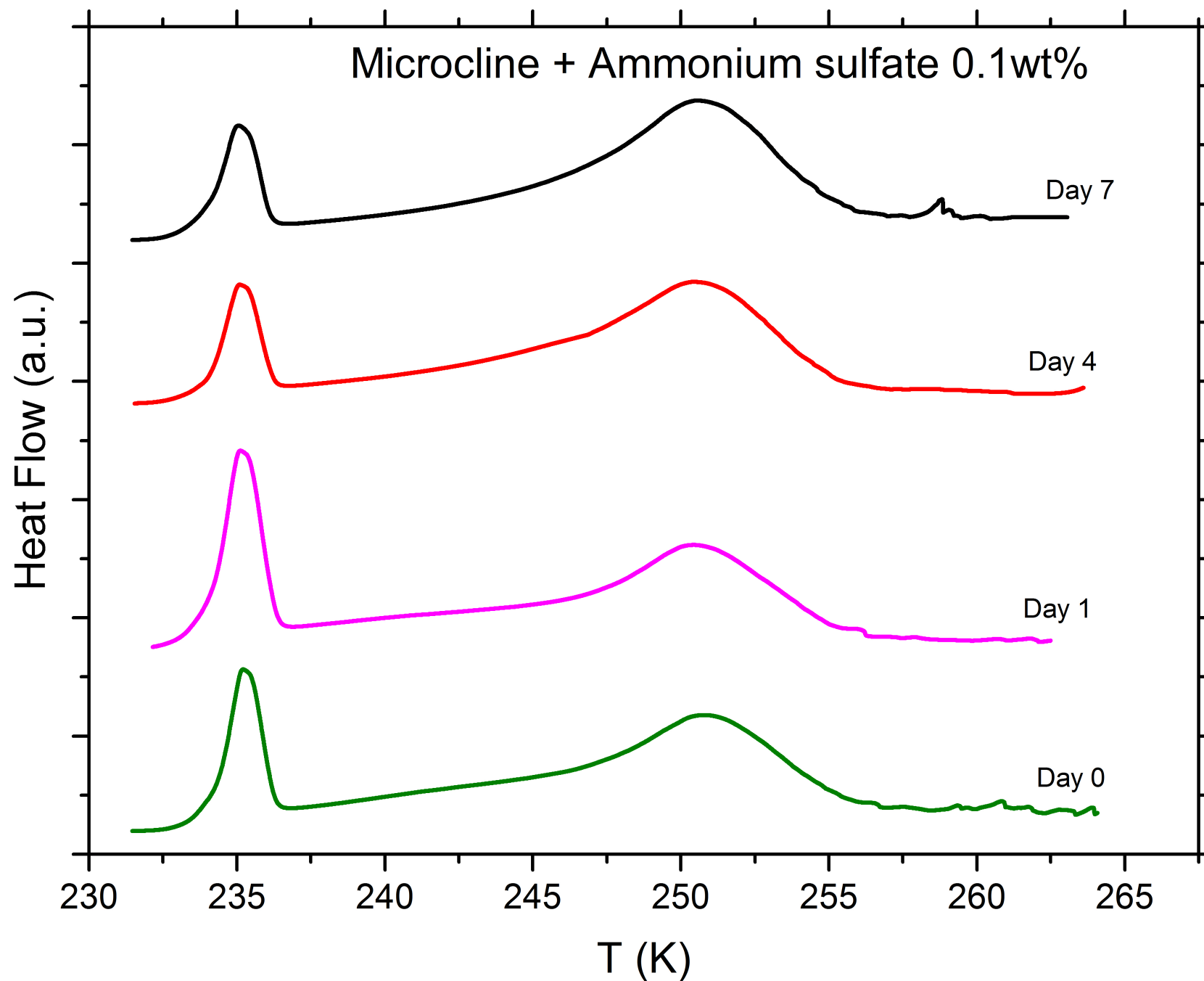
Microcline (2 wt%) suspended in pure water, ammonia solution (0.05 molal), and ammonium sulfate solutions (0.1 wt% and 10 wt%) were aged over a period of one week. Immersion freezing experiments were carried out with the DSC setup on the day of preparation (fresh), then on the first, fourth and seventh day after preparation in order to assess the long-term effect of ammonia and ammonium containing solutes on the IN efficiency of microcline. We show the DSC thermograms ( $1 \text{ K min}^{-1}$  cooling cycle) for each solute concentration over the measured time period.



**Figure S10.** DSC thermograms of aging tests with 2 wt% of microcline particles suspended in pure water droplets measured over a period of one week. All curves are normalized such that the areas under the heterogeneous and homogeneous freezing curves sum up to the same value.

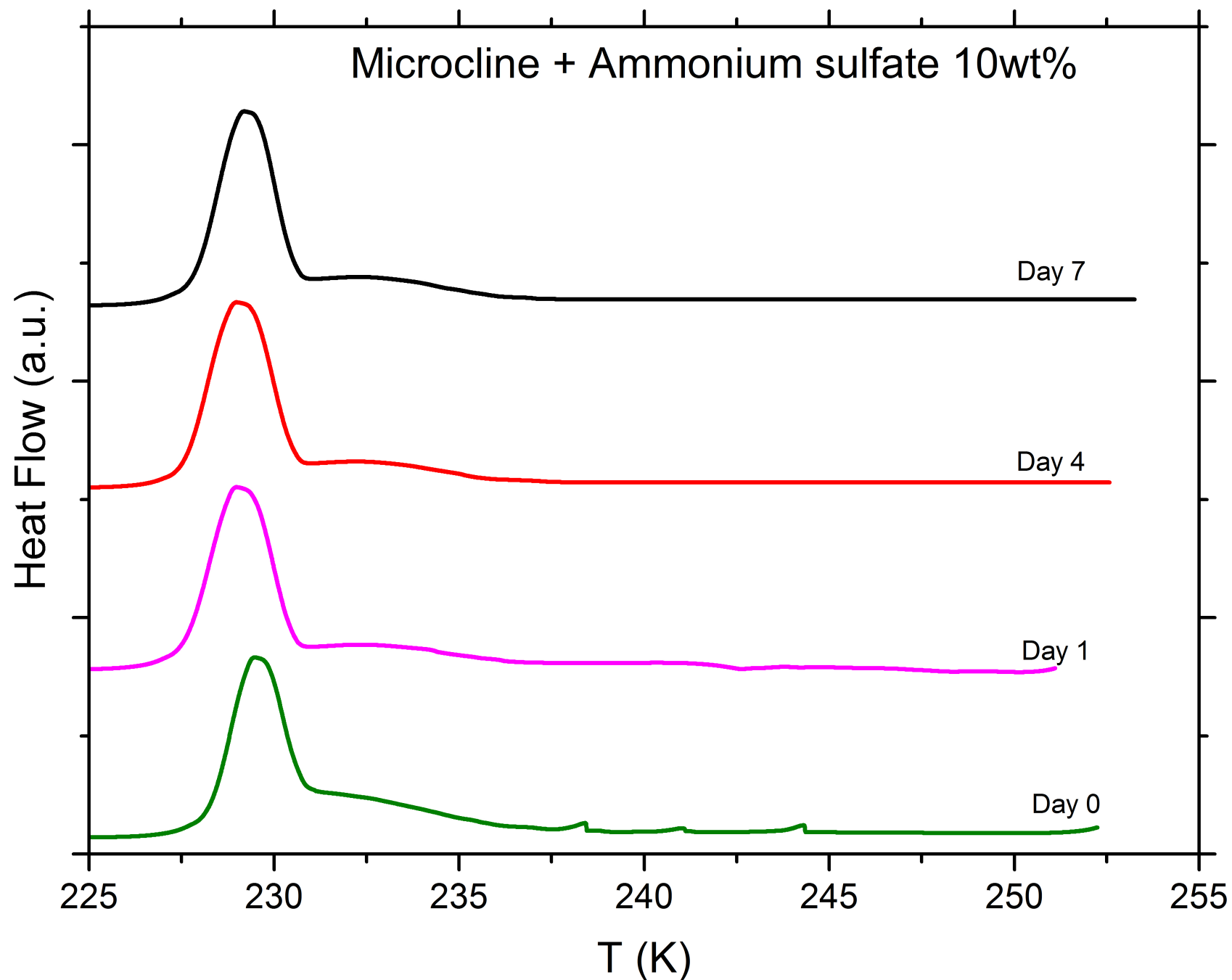


**Figure S11.** DSC thermograms of aging tests with 2 wt% of microcline particles suspended in ammonia (0.05 molal) solution droplets measured over a period of one week. All curves are normalized such that the areas under the heterogeneous and homogeneous freezing curves sum up to the same value.



**Figure S12.** DSC thermograms of aging tests with 2 wt% of microcline particles suspended in ammonium sulfate (0.1 wt%) solution droplets measured over a period of one week. All curves are normalized such that the areas under the heterogeneous and homogeneous freezing curves sum up to the same value.





**Figure S13.** DSC thermograms of aging tests with 2 wt% of microcline particles suspended in ammonium sulfate (10 wt%) solution droplets measured over a period of one week. All curves are normalized such that the areas under the heterogeneous and homogeneous freezing curves sum up to the same value.