

Determining Melting Temperature and Polarization Angle of Gelatin*

In this paper some properties of gelatin, animal origin substances, were studied. The melting point temperatures and the angle of polarization for different concentrations of gelatin in water were measured. Melting temperature was determined by using glass marble and its motion in the sample as an indicator of a liquid state. The angle of polarization, i.e. optical activity, was studied by designing and using our own polarimeter in which gelatin samples were put. The results obtained show that, after some critical concentration, melting temperature does not change anymore. This is because the grid of chain-bounds in gelatin is already very dense and it does not change much with adding another bound. Dependence of polarization angle on concentration was in agreement with our predictions. Increasing the concentration, the increased number of gelatin molecules causes higher optical activity. The angle of polarization has a greater value for lower temperatures, when there are more molecules that can rotate the plane of polarization. Thus, the angle of polarization showed us indirectly the number of bounds (molecules that change the polarization angle), and the glass marble showed us when there was a critical amount of these bounds for gelatin to turn into liquid.

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