

A preliminary investigation of the accuracies were performed as follows: Three aliquots of 4 different concentrations of NaCl in H₂O were measured on the spring mass pendulum. The different aliquots for a given concentration were not temperature corrected. The concentration was measured once by means of a Fischer Gravitometer before removal of aliquots. Variation in period of the pendulum in microseconds is plotted as a function of O.S.G. The small scatter within a given concentration is probably a function of uncorrected temperatures.

Although the curve over a significant range is not linear for this small range of mass, it well approximates a straight line.

CONCLUSION: Specific gravity may be measured to better than one part in a thousand by this method with volumes of 30 ml. or less.

A simple centrifuge arrangement will allow filling of the flask under zero G conditions and the entire procedure is quite feasible for use in space flight with minimal weight power and time costs.