

## E2-42 Studies on some process parameters of ohmic heating

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Ohmic heating is a heat generating method used in the food processing industry. Heat is internally generated within the electrolytic medium by passing an alternating electric current. This process can be applicable as a High Temperature-Short Time (HTST) technique. The heating rate of this process depends on many factors and some of these are electrolytic medium and the electrodes.

In this study, effect of concentration, type of the electrolytic medium, surface area and distance between electrodes on heating rate were observed by measuring the temperature of the process with time.

Effect of concentration was studied by using different concentrations of sodium chloride. The temperature of the medium was found to increase with time in non linear manner ( $d^2T/dt^2 > 0$ ,  $T =$  Temperature,  $t =$  time). The heating rate increases with increasing concentration of salt and  $250\text{cm}^3$   $0.04\text{ mol dm}^{-3}$  NaCl solution boiled within 78 sec. The conductivity of highly ionized solutions are directly proportional to the concentration and therefore heating rate increases