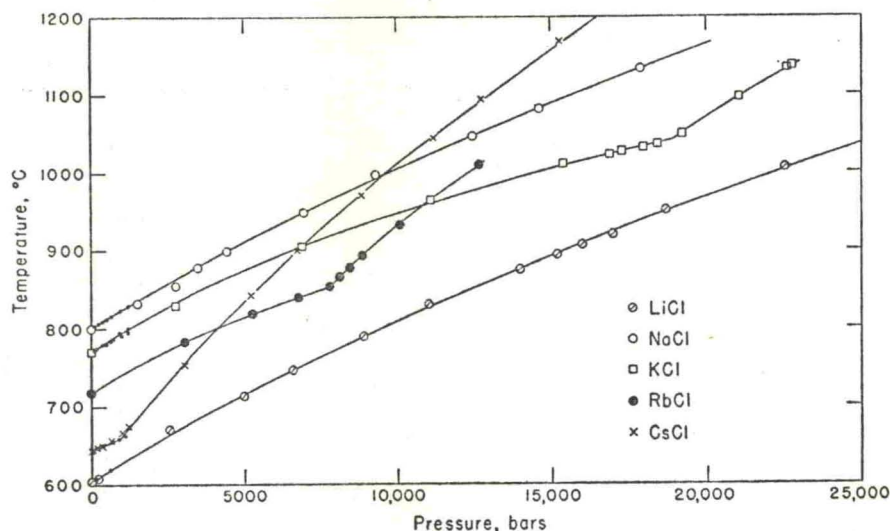


Fig. 1. Melting curves of the alkali chlorides. The small dots represent points obtained with the low-pressure apparatus.



change the temperature at a rate much less than 20°C per minute, but faster rates did not change the results. In the high-pressure apparatus melting points obtained from heating curves could be repeated to within 2°C. Cooling curves gave results that were irregularly lower because of supercooling. Arrests on heating rarely lasted more than a few seconds; they were accompanied by a pronounced maximum in the difference in temperature between the two thermocouples, which was taken as an equally good indication of the melting point. On the basis of the reproducibility of the data, a generous estimate of the uncertainty is  $\pm 5^\circ\text{C}$  for most salts. For some unknown reason the melting curves of NaBr and NaI proved to be more difficult to locate in this apparatus, and the determinations of the melting points of these salts are uncertain by  $\pm 10^\circ\text{C}$ .

More accurate results were obtained in the low-pressure apparatus because of its greater sensitivity. Arrests on cooling were particularly sharp; the tempera-

ture remained constant to within 0.2°C for as long as 30 seconds in many instances. Results on heating and cooling rarely differed by as much as 1°C, and the data are almost certainly accurate to within  $\pm 2^\circ\text{C}$ . Results for NaBr were as sharp as those for the other salts in this apparatus.

The quantity that was actually measured was the change in melting point with pressure. Melting points of the salts at atmospheric pressure were measured in the pressure apparatus; the results served to calibrate the thermocouples *in situ*. The calibration always fell within a few degrees of the standard tables and did not change with time. Deviations from the tables varied smoothly with temperature for any particular thermocouple.

The melting points of the lots of salts used in the experiments were determined by conventional means with Pt-Pt 10% Rh thermocouples calibrated against the melting points of NaCl (800.5°C) and KCl (770°C).

Fig. 2. Melting curves of the sodium halides. The small dots represent points obtained with the low-pressure apparatus.

