

TABLE I.—FREEZING POINTS

Sodium Rubidium System

mol fraction Rb	T, K	mol fraction Rb	T, K
0.0000	371.05	0.6187	313.51
0.0050	369.37	0.6786	304.3 ^a
0.0099	367.34	0.7303	293.3 ^a
0.0394	358.18	0.7345	292.0 ^a
0.0613	351.78	0.7788	280.2 ^a
0.0780	348.91	0.8137	270.7 ^a
0.1067	344.62	(0.8210) ^b	268.65 ^b
0.1774	338.57	0.8385	271.77
0.2001	337.59	0.8584	275.59
0.2634	334.94	0.8606	275.95
0.3005	333.61	0.8863	281.56
0.3454	331.91	0.9021	285.04
0.3565	331.74	0.9283	291.49
0.4246	328.86	0.9584	299.99
0.4585	327.45	0.9889	309.51
0.4956	325.07	0.9937 ^c	310.73
0.5556	320.28	1.0000	312.45

^a less accurate values on steep portion of the curve; ^b eutectic point; ^c no eutectic observed in this sample.

melting points in this region. Apparently both Rinck and Gorja were observing something other than the melting point. Both obtained a eutectic composition approximately 7 mol % lower than our value. The discrepancy is due to the large difference in the freezing point data on the sodium-rich side of the eutectic. On the rubidium-rich side of the eutectic, our data are in good agreement with the two

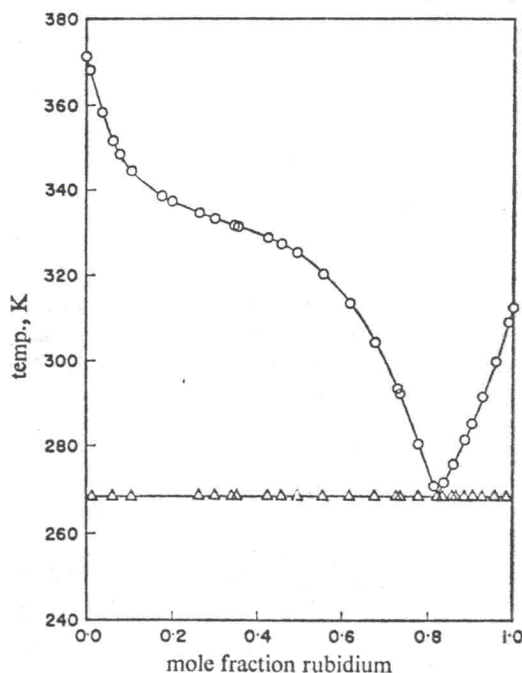


FIG. 1.—Solid-Liquid phase diagram for the sodium-rubidium system.

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carried out in a Vacuum Atmosphere argon through a purification train p.m. Under these conditions, the hours in the box and showed only a

rubidium inside the glove box on a accurate to ± 0.001 g. The samples in a liquid solution, which was then serve rubidium metal, some samples sample of known composition with

freezing point measurements has been jacketed stainless steel sample tube. the outer jacket and a heater tape variability needed to obtain cooling vacuum/helium exchange gas system. ing the pressure of the heat exchange cooling coolant or the heater current. steel stirrer tube with a variable speed sured with a Leeds and Northrup Leeds and Northrup high precision through the centre of the stirrer and into as calibrated by Leeds and Northrup calibration was checked by us at the (4.29 K), and the sodium sulphate during, and at the conclusion of the with the calibration to within 0.01 K. least ± 0.02 K over the range of the ed inside the argon glove box so that point measurements are made with ide.

REMENTS

composition range from time- "ping" of the soft solid metal as e than the freezing points. The values are considered accurate to tion of the curve immediately on ertainty may be as high as $\pm 0.5^\circ$. in this region gave only a small

nd 0.821 mol fraction rubidium. n reasonable agreement with the etween 0.4 mol fraction rubidium (2) differ greatly from our values. tion rubidium where the data of tively. Even with the advantages study, it was difficult to determine