

- P (atm) Corresponding pressure on the sample with the above pressure on the rams, in atmospheres.
- t_m (mv) Thermocouple emf at the melting point, in millivolts.
- $t_m(^{\circ}\text{C})$ The conversion of the preceding number, t_m (mv), to degrees centigrade.
- $t_a(^{\circ}\text{C})$ Temperature to which the junction dropped when power was turned off right after melting was detected.
- $t(^{\circ}\text{C})$ Corrected melting temperature, from the equation above.

Lead Sample #2 7/28/60

Lead in a tantalum tube, 0.010" wall thickness, 0.125" outside diameter. Thermocouple spot-welded to the outside of the tantalum tube. Two end plugs are tantalum and nickel so that the lead is completely enclosed in tantalum.

P (psi)	P (atm)	t_m (mv)	$t_m(^{\circ}\text{C})$	$t_a(^{\circ}\text{C})$	$t(^{\circ}\text{C})$
1000	13500	2.60	331	35	428
2000	26300	3.20	395	36	513
3000	39200	3.60	436	36	567
4000	52200	3.88	465	36	606
5000	65500	4.28	506	37	660
6000	78500	4.50	528	37	689
7000	91800	4.69	547	38	714
8000	105000	4.85	563	38	735

$$t_{m0} = 255^{\circ}\text{C}$$

$$t_{a0} = 35^{\circ}\text{C}$$

$$k = .3275$$

Lead Sample #1 8/5/60

Same geometry as the sample above.

P (psi)	P (atm)	t_m (mv)	$t_m(^{\circ}\text{C})$	$t_a(^{\circ}\text{C})$	$t(^{\circ}\text{C})$
1000	13500	2.66	337	50	404
2000	26300	3.25	400	51	481
3000	39200	3.80	457	60	549
4000	52200	4.20	498	61	600
5000	65500	4.55	533	69	641
6000	78500	4.84	562	74	675