



THERMAL APPLICATIONS NOTE

Enthalpy of Melting for Standards

The following table summarizes the best known temperatures and heats of melting for many standard materials. These values may be used for temperature and/or cell constant calibration of the TA Instrument's DSC or HTDTA.

MATERIAL	MELT TEMP (°C)	HEAT OF FUSION		REF NOTE
		(J/g)	(+/-)	
Cyclopentane	-151.16(crystal)	68.69		10
Cyclopentane	-135.06(crystal)	4.88		10
n-Pentane	-132.66	36.51	0.02	6
n-Heptane	-90.56	138.62		12
Cyclohexane	-87.06	78.70		11
n-Octane	-56.76	180.00		12
Mercury	-38.8344**	11.443	0.004	2@
n-Decane	-26.66	199.87		12
n-Dodecane	- 9.65	214.35		12
H2O	0.01* *	335	0.6	1
Benzene	5.53	125.9		5
Cyclohexane	6.54	30.91		11
Diphenyl Ether	26.87 *	101.15	0.10	4
n-Octadecane	28.24	238.76		13
Hexatriacontane	72.14(crystal)	18.54		13
Hexatriacontane	73.84(crystal)	59.59		13
Hexatriacontane	75.94	173.38		13
Benzoic Acid	122.37 *	147.4	0.1	3
Indium	156.5985* *	28.57	0.17	1
Tin	231.928 **	60.6	0.2	1
Bismuth	271.442 *	53.07	0.58	1
Cadmium	321.108 *	55.09	1.4	2
Lead	327.502 *	23.1	0.3	1
Zinc	419.527* *	108	0.6	1 ⊗

Tellurium	449.6	137.0	4	8 & 9
Antimony	630.74 *	163.2	5.2	2 #
Magnesium	650	362	17	7①
Aluminum	660.325* *	400.1	4.7	2①
KBr	734.0	216.0	3.0	9
NaCl	801.0	480.0	10.0	9
Silver	961.78* *	104.4	3.9	2
Gold	1064.18**	63.72	2.1	2
Copper	1084.62* *	205.4	6.6	2 ⊕, ++
Nickel	1455 *	297.6		2
Cobalt	1494 *	274.8	4.3	2+
Iron	1538	253	7	7
Palladium	1554 *	165		

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- 9) O. Kubaschewski and E.L. Evans, *Metallurgical Thermochemistry*, Pergamon, London (1974).
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NOTES

- + Sample sublimes.
- ++ Sample oxidizes easily.
- * Temperature taken from the IPTS-1968. *Pure Appl.Chem.*, 22, 557(1971).
- ** Temperature taken from the ITS-90. *Metrologia*, 27, 3-10 (1990).
- ⊕ Reacts with alumina
- ⊗ Amalgams with aluminum as low as 450°C, do not heat above 430°C
- ① Sample amalgams with platinum
- @ Shelf-life 1 week at room temperature
- # Amalgams with copper

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