

S(c,1)

Sulfur

T, K	cal/mol·K			H° - H ₂₉₈ ^o ,
	C _p ^o	S ^o	-(G° - H ₂₉₈ ^o)/T	kcal/mol
298.15	5.425	7.661	7.661	0
300	5.436	7.695	7.662	.010
368.3	5.795	8.846	7.776	.394
368.3	5.921	9.106	7.776	.490
388.36	6.015	9.423	7.854	.609
388.36	7.423	10.486	7.854	1.022
400	7.687	10.709	7.934	1.110
432.02	12.860	11.340	8.162	1.373
500	9.078	12.797	8.703	2.047
600	8.200	14.362	9.522	2.904
700	7.799	15.596	10.305	3.704
717.824	7.694	15.790	10.439	3.841

Phase changes: 368.3 K, orthorhombic - monoclinic transformation of S; $\Delta H^\circ = 0.096$ kcal/mol.
 388.36 K, melting point of S; $\Delta H^\circ = 0.413$ kcal/mol.
 432.02 K, second order transformation of S; $\Delta H^\circ = 0$ kcal/mol.
 717.824 K, boiling point of S to equilibrium mixture of S_n (n = 1 to 8).

Heat capacity (cal/mol·K) and enthalpy (kcal/mol) equations:

298.15-368.3 K: $C_p^\circ = 8.174 - 3.434 \times 10^{-3}T - 1.556 \times 10^5 T^{-2}$
 $H^\circ - H_{298}^\circ = 8.174 \times 10^{-3}T - 1.717 \times 10^{-6}T^2 + 1.556 \times 10^2 T^{-1} - 2.806$

368.3-388.36 K: $C_p^\circ = 5.911 + 0.058 \times 10^{-3}T$
 $H^\circ - H_{298}^\circ = 5.911 \times 10^{-3}T + 0.029 \times 10^{-6}T^2 - 1.691$

388.36-432.02 K: $C_p^\circ = -38.829 + 86.622 \times 10^{-3}T + 19.022 \times 10^5 T^{-2}$
 $H^\circ - H_{298}^\circ = -38.829 \times 10^{-3}T + 43.311 \times 10^{-6}T^2 - 19.022 \times 10^2 T^{-1} + 14.467$

432.02-717.824 K: $C_p^\circ = -34.923 + 46.998 \times 10^{-3}T + 51.287 \times 10^5 T^{-2}$
 $H^\circ - H_{298}^\circ = -34.923 \times 10^{-3}T + 23.499 \times 10^{-6}T^2 - 51.287 \times 10^2 T^{-1} + 23.946$

Sources: Data based on Montgomery (159) and West (243).