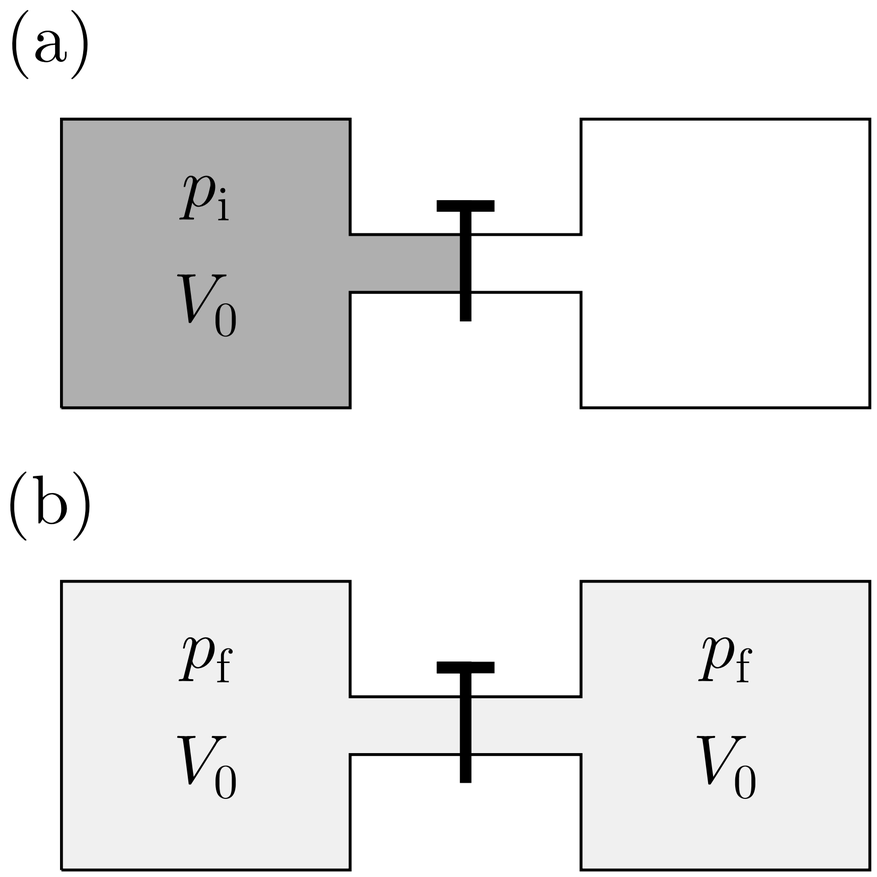
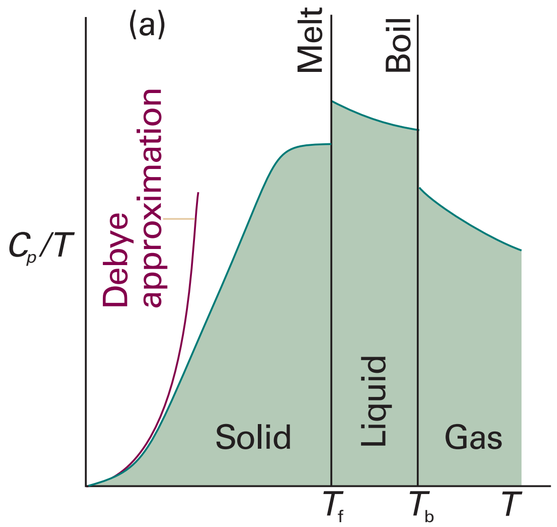
Joule Expansion

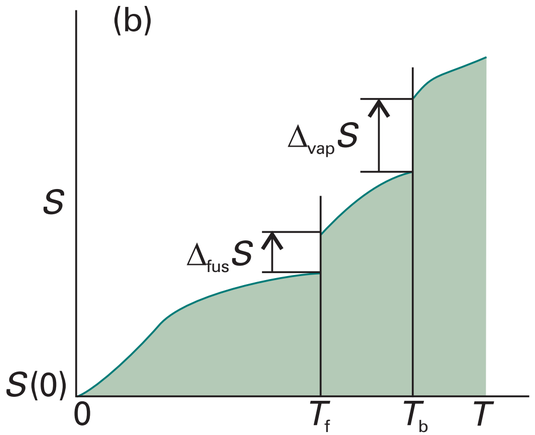


The expansion
is a highly non-equilibrium process.

During the expansion no heat
enters the system. Thus the
energy initial equals the final energy

Entropy of Boiling Liquid Nitrogen





	$S^{\ominus}_m/(\mathrm{J\,K^{-1}\,mol^{-1}})$
Debye extrapolation	1.92
Integration, from 10 K to 35.61 K	25.25
Phase transition at 35.61 K	6.43
Integration, from 35.61 K to 63.14 K	23.38
Fusion at 63.14 K	11.42
Integration, from 63.14 K to 77.32 K	11.41

Total 79.8 J/mol K