P-terphenyl vapor pressure estimate D. Shuman, 12/9/10

from: Melting and Crystal Structure: the melting parameters of some polyphenyls
J.N. andrews and A.R. Ubbelohde, FRS. ; Poceedings of Royal Society A-1955 pgs 435-47

using equation at top of pg 437:

$2.303\log(p) := A - \frac{H_{vap}}{R \cdot T}$ p in torr, Temp in deg K, H in cal/mol $R := 8.314 J \cdot K^{-1} mol^{-1}$

and constants found in Table 1, pg 437:

$A_{tph\_330\_390C} := 19.15$ $H_{vap\_tph\_330\_390C} := 16.34 \frac{kcal}{mol}$

$A_{tph\_270\_330C} := 20.115$ $H_{vap\_tph\_270\_330C} := 17.495 \frac{kcal}{mol}$

set :

$A := A_{tph\_270\_330C}$ $H_{vap} := H_{vap\_tph\_270\_330C}$

define range variable

$T := 543K, 553K .. 603K$

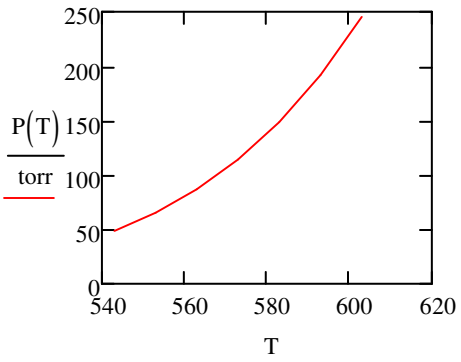
then : $P(T) := 10^{\frac{A - \frac{H_{vap}}{R \cdot T}}{2.303}} \cdot torr$

$P(T) =$

48.874	torr
65.535	
86.966	
114.27	
148.748	
191.913	
245.521	

$T =$

543	K
553	
563	
573	
583	
593	
603	



extrapolate to low temp estimate:

$T_{el} := 273K, 283K .. 603K$