Chart 9: Thermal conductivity, λ, against thermal diffusivity, *a*

The chart guides in selecting materials for thermal insulation, for use as heat sinks and so forth, both when heat flow is steady, (λ) and when it is transient ($a = \lambda/\rho C_p$ where ρ is the density and C_p the specific heat). Contours show values of the volumetric specific heat, $\rho C_p = \lambda/a$ (J/m^{3}K). The guide lines show the loci of points for which

(a) $\lambda/a = C$ (constant volumetric specific heat)
(b) $\lambda/a^{1/2} = C$ (efficient insulation; thermal energy storage)

The value of constant C increases towards the upper left.