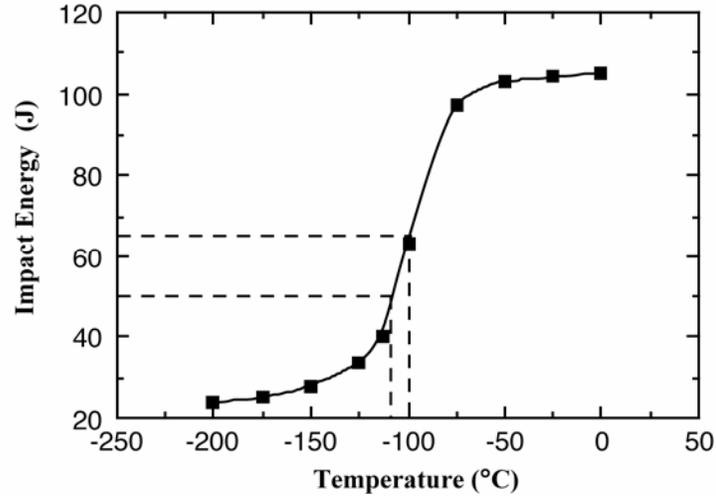


## Impact Fracture Testing

8.12 (a) The plot of impact energy versus temperature is shown below.



(b) The average of the maximum and minimum impact energies from the data is

$$\text{Average} = \frac{105 \text{ J} + 24 \text{ J}}{2} = 64.5 \text{ J}$$

As indicated on the plot by the one set of dashed lines, the ductile-to-brittle transition temperature according to this criterion is about  $-100^{\circ}\text{C}$ .

(c) Also, as noted on the plot by the other set of dashed lines, the ductile-to-brittle transition temperature for an impact energy of 50 J is about  $-110^{\circ}\text{C}$ .