

- 13** A well-lagged copper calorimeter of mass 57 g is filled with 250 g of paraffin. The calorimeter and paraffin are both initially at 25 °C.

What will be the increase in the temperature of the paraffin if a lead cube of mass 400 g and temperature 150 °C is placed in the paraffin?

$$\text{heat capacity of copper calorimeter} = 21.7 \text{ J K}^{-1}$$

$$\text{specific heat capacity of paraffin} = 2130 \text{ J kg}^{-1} \text{ K}^{-1}$$

$$\text{specific heat capacity of lead} = 130 \text{ J kg}^{-1} \text{ K}^{-1}$$

**A** 8.93 °C

**B** 9.21 °C

**C** 10.7 °C

**D** 12.9 °C