

## Answer on Question#78234 – Chemistry – General chemistry

### Question:

A liquid has a specific heat of 2.81 J/g°C, a mass of 90.0 g, and an initial temperature of 25.0 °C. What is the new temperature of the liquid if 2,350 J of energy are removed from it?

- A. 1.57 °C
- B. 9.30 °C
- C. 15.7 °C
- D. 34.3 °C
- E. None of the Above

### Solution:

The heat removed from the liquid:  $Q = cm\Delta T$

Where  $\Delta T = T_0 - T$

$T_0$  – initial temperature

$T$  – final temperature

$$\Delta T = \frac{Q}{cm} = \frac{2,350 \text{ J}}{2.81 \frac{\text{J}}{\text{g}^\circ\text{C}} \times 90.0 \text{ g}} = 9.29^\circ\text{C}$$

$$T = T_0 - \Delta T = 25.0^\circ\text{C} - 9.29^\circ\text{C} = 15.7^\circ\text{C}$$

### Answer:

- C. 15.7 °C