

QUESTION

A foundry has been commissioned to make souvenir coins. The coins are to be made from an alloy that is 40% silver. The foundry has on hand two alloys, one with 50% silver content and one with a 25% silver content. How many kilograms of each alloy should be used to make 20 kilograms of the 40% silver alloy?

Answer

12 kg of alloy with 50% silver content
8 kg of alloy with 25% silver content

Explanation

Let x = amount of alloy with 50% silver content
 $20-x$ = amount of alloy with 25% silver content

Percentage of silver content in the mixed alloy should be 40% ;

$$0.50x + 0.25(20-x) = 0.40(20)$$

$$0.50x + 5 - 0.25x = 8$$

$$0.25x = 3$$

$$x = 12 \text{ kg of alloy with 50\% silver content}$$

$$20-x = 20-12 = 8 \text{ kg of alloy with 25\% silver content}$$

Preview from Notesale.co.uk
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