

0 1

Gold is a valuable metal that is used for making jewellery. The purity of gold is rated in carats.

**Table 1** shows the composition of two pieces of metal to be used for making jewellery.

Table 1

Metal	Rating	% Composition
1	24 carat	100% gold
2	18 carat	75% gold, 16% silver, and copper

0 1 . 1

Give the percentage of copper in **Metal 2**.

[1 mark]

$$100 - 75 - 16 = 9$$

Percentage of copper = ..... 9 ..... %

0 1 . 2

Give three differences you would expect between jewellery made from **Metal 2** compared to **Metal 1**.

[3 marks]

Difference 1 ..... **Metal 2 or jewellery from Metal 2 is harder.** ..... [1]

Difference 2 ..... **Metal 2 or jewellery from Metal 2 is a different colour or paler.** ..... [1]

Difference 3 ..... **Metal 2 or jewellery from Metal 2 is cheaper.** ..... [1]

**TOP TIP :**

You can also have the opposite, for example 'Metal 1 or jewellery from Metal 1 is softer'.

Mark schemes say 'allow converse' which means you can have the answer the opposite way round (as long as it makes sense!)

0 1 . 3

Metal 2 is an alloy.

What is an alloy?

**Mixture [1]**

**of metal with another metal or element. [1]**

**DON'T FORGET :**

Important to remember alloys are mixtures and not compounds. Also, not necessarily mixed with another metal.

[2 marks]

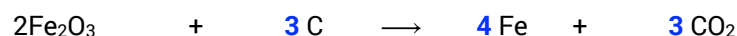
0 1 . 4

The reaction used to extract iron from iron oxide in the blast furnace is shown below.

The equation is **not** completely balanced.

Finish balancing the equation.

[1 mark]



Questions continue on next page...

0	2
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One type of polymer is made of long chain molecules made from crude oil.

Thermosoftening polymers melt when heated.

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Explain why.

Include a description of the structure and bonding in a thermosoftening polymer in your answer.

**[4 marks]**

.....  
 Made of long chains or hydrocarbon chains [1]

.....  
 From crude oil or monomers/hydrocarbon monomers. [1]

.....  
 They (thermosetting polymers) consist of tangled chains. [1]

.....  
 There are weak intermolecular forces between the chains. [1]

.....  
 Low/small amounts of energy needed to separate the chains or overcome the weak forces. [1]

0	2	.	2
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Thermosetting polymers can also be made from crude oil. Name one suitable use of a thermosetting polymer.

**[1 mark]**

.....  
 Any suitable use where the polymer should resist melting - sauce pan handles, plates, food containers. [1]

**(Total 12 marks)**

**End**