

## Solutions

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**2.1** Oxygen (or air) and water.

**2.2** Copper and zinc.

**2.3** A matrix/binder surrounding a reinforcement of fibres or fragments.

**3.1** Stainless steel contains iron with chromium and nickel; the alloying elements make it hard and resistant to corrosion – it survives washing and contact with food acids.

**3.2** 18 carat = 75 % gold;  $0.75 \times 12 = 9$  g.

**3.3** Thermosoftening polymers have separate chains with no cross-links; on heating the intermolecular forces weaken and the polymer melts – it can be remoulded and recycled. Thermosetting polymers have strong covalent cross-links between chains; these do not break on heating, so the polymer chars rather than melts.