

The metals found in ancient Chinese bronze

Written by Neil Goalby. Available from rsc.li/3BUOD4k

A study has investigated the ingredients found in ancient Chinese bronze. Bronze recipes written around 300BC – the oldest chemical formulas known to have been written down – show proportions for alloys referred to as Jin and Xi. Jin was thought to mean copper and Xi to mean tin. But, the proportion of tin found in ancient Chinese bronzes suggests this isn't the case. Ancient Chinese bronze also contained nearly 10% lead.

To investigate further, the team examined ancient bronze coins. Their results suggest that Jin or Xi were not pure metals, but intermediate alloys. It seems that Jin was an alloy of copper, tin and lead, while Xi may have been an alloy of lead and copper.



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Analysis of ancient bronze coins reveals new alloys used in early metallurgy

Questions

1. What is an alloy?
2. What metals are used to make modern bronze?
3. Explain why metal alloys are harder than the pure metals that they are made from.