

**Gold enrichment in Staffordshire Hoard K365: results of SEM-EDX analysis**

Object Type Hilt-mount  
Date 610-630

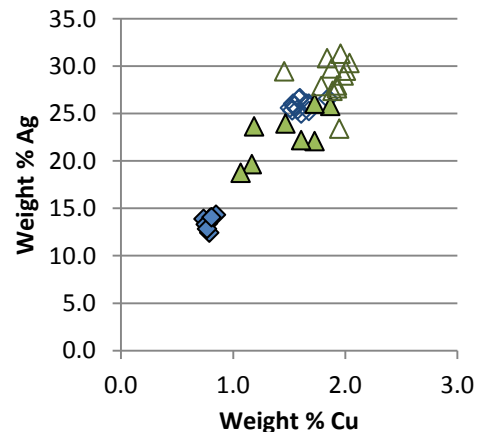
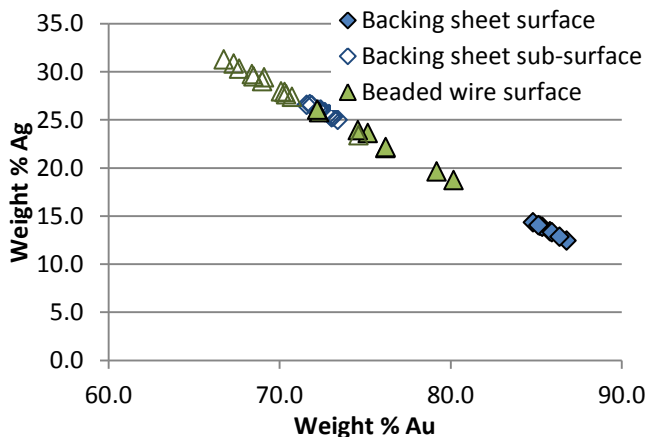
Decoration Filigree  Glass   
Garnet  Other



SEM-EDX analysis was undertaken on the filigree wires and the base sheet to which the wires were attached.

Area analysed	No of analyses		Wt% Au	Wt% Ag	Wt% Cu
Base sheet surface	8	Average	85.7	13.5	0.8
		Standard Deviation	0.66	0.65	0.03
Base sheet sub-surface	12	Average	72.6	25.8	1.6
		Standard Deviation	0.58	0.54	0.09
Filigree wire surface	8	Average	75.7	22.8	1.5
		Standard Deviation	2.87	2.64	0.30
Filigree wire sub-surface	12	Average	69.4	28.7	1.9
		Standard Deviation	2.09	2.09	0.15

SEM-EDX surface and sub-surface compositions for each component analysed (the results are normalised). This analysis was carried out as part of the gold enrichment study. For full details of methodology and associated results see report PR07444-10 and PR07444-15



Plots of gold vs silver and copper vs silver contents, based on SEM-EDX analysis, showing the differences between the sub-surface and surface analyses.

Comparison of the sub-surface compositions of each component suggests that both components may have been made from a similar gold alloy. The analysis revealed a c.12.3 wt% loss of silver from the surface of the base sheet (a difference of c.48% from surface to core), which is indicative of treatment to deliberately enrich the gold colour of the metal. Only copper and small amounts of silver are normally lost from the surface during burial. There was also a loss of silver from the surface of the wire (c.5.9 wt% loss of silver a difference of c.21% from surface to core) also indicating deliberate treatment.

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Analysed January 2014

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