Gold enrichment in Staffordshire Hoard K680: results of SEM-EDX analysis

Object Type Pommel
Date 600-630

Decoration

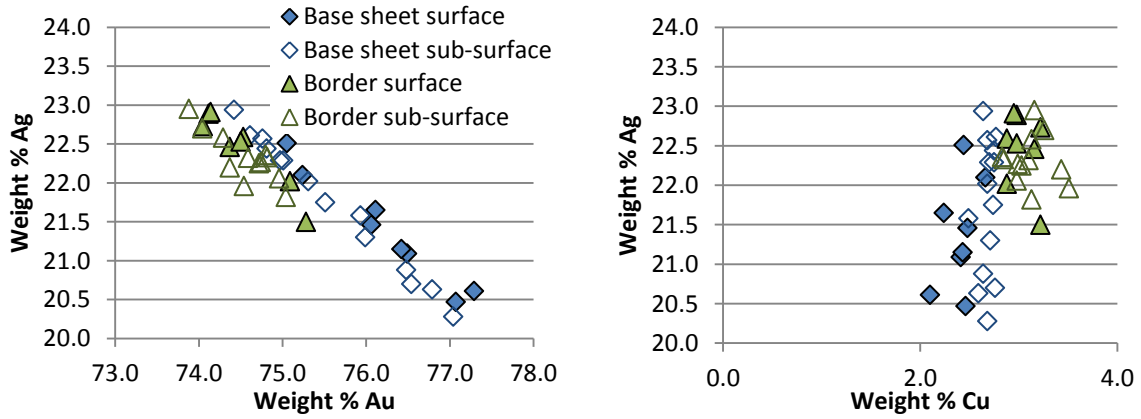
Filigree	✓	Glass		
Garnet		Other	✓	

SEM-EDX analysis was undertaken on the backing sheet and the border at the top of the cap.

Area analysed	No of analyses		Wt% Au	Wt% Ag	Wt% Cu
Base sheet surface	8	Average	76.2	21.4	2.4
		Standard Deviation	*0.79*	*0.70*	*0.17*
Base sheet sub-surface	14	Average	75.6	21.7	2.7
		Standard Deviation	*0.87*	*0.85*	*0.08*
Border at top of cap surface	8	Average	74.5	22.5	3.0
		Standard Deviation	*0.46*	*0.48*	*0.14*
Border at top of cap sub-surface	12	Average	74.6	22.3	3.1
		Standard Deviation	*0.36*	*0.31*	*0.21*

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

The analysis of the base sheet revealed a loss of *c*.0.4 wt% silver from the surface, which is most likely indicative of corrosion that can occur during burial, which results in natural surface enrichment but could also be the result of some deliberate surface treatment. The analysis of the border at the top of the pommel revealed only a loss of copper from the surface, again this is most likely due to corrosion. Comparison of the sub-surface compositions of both components suggests they may have been made from different gold alloys.



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.

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