



The Care and Curation of Metallurgical Samples

Even after investigation and publication, metallurgical samples offer a valuable resource for future researchers. Experience has shown that such material is too frequently lost. This data sheet provides guidance to ensure that samples are securely housed.

Where?

Some curators will insist on the return of any samples taken from their objects. Typically this may be the case for samples from museum objects. For samples of archaeological finds, the organisation responsible for archiving the archaeological material and records may be the most appropriate body to store samples. However, the individuals involved may not always insist on this, preferring to leave responsibility with the investigator. Under all circumstances a clear agreement should be sought with the curators of the artefact for the long term archiving of the samples.

Particularly vulnerable are the sample collections of private researchers, those from institutions whose involvement in archaeometallurgy is limited to the personal interests of one of two employees, and samples worked on as part of student projects. In all these cases there is a danger that those who eventually inherit the material may value the space they occupy more than the resource. National institutions with a long-term commitment to the study of ancient and historic metals, although not blameless of poor practice, should provide a more secure home for their own material. It is possible that such bodies may agree to take care of collections of other researchers' samples, as the British Museum has already done.

How?

Without documentation or protection from degradation the future value of any sample may be extremely limited. Little research has been undertaken

on the long-term survival of prepared specimens. Although metallurgical laboratory suppliers offer lacquers for surface protection, by their own admission these may have a short lifetime. The suggestions below are largely based on experience of protecting both archaeological and non-excavated artefacts. Materials and procedures are those which have been proven to provide maximum stability to objects without irreversible intervention. They are offered for guidance but, where circumstances suggest alternative solutions, these may be more appropriate.

Storage

- The sample should be cleaned of any unwanted coatings, grease, dirt etc; this may involve a limited amount of repolishing. The surface should also be degreased with a suitable solvent (acetone has the added benefit of dehydrating the sample).
- Copper alloy and silver samples should be lacquered where possible; *Inceralac*, a commercially manufactured acrylic resin, will not only give physical protection but also contains a corrosion inhibitor (benzotriazole). For ferrous samples an alternative acrylic resin without inhibitor, *Paraloid B72* is recommended.
- Lead and lead alloy samples should not be coated.

Packing

- Samples should be packed in a manner to protect exposed surfaces, e.g. in specially designed trays or in cut out plastazote inserts within small crystal boxes.
- They must be stored desiccated. (Recommended levels: <15% RH for iron, <35% RH for copper alloys and other metals). For large collections of regularly sized

specimens this might be most appropriate within a specialised desiccating cabinet. For smaller collections Stewart boxes with silica gel are suitable and these could contain individual crystal boxes if necessary. When there are very few specimens within a collection it might be more practicable to package the samples as above but keep them stored with the original artefacts. Lead and lead alloys in particular should be protected from acid vapours. In all cases regular routine checks on environmental conditions should be made.

Documentation

- Individual samples must be suitably labelled and marked. As much relevant information as possible should be inscribed indelibly onto the actual sample, stub or slide.
- Documentation is essential. All samples should be cross-referenced on the sample label, the original artefact label, as well as in written records and any computerised documentation. This should state the type of object, its source, treatment, results and details of any publications. A separate catalogue of samples held within the institution should also be kept.
- If samples are to be loaned for further research, loan conditions should be similar to those required for accessioned artefacts.

A loan form giving details of the research, methodology etc. should be completed. The following, based on National Museums and Galleries of Wales Department of Archaeology & Numismatics' Application for Samples for Analysis, provides an indication of the level of detail required.

Application for loan of samples

To be filled in by applicant:

Name, job title and institutional address of applicant.
Name of Head of Department (if a student, name of supervisor).
Name and institutional address of analyst.
Sponsoring or supporting institutions.
Nature of project.
Method of analysis proposed.
Size of sample required, likelihood of damage to sample as supplied.
Condition in which sample will be returned.
Relevant papers already published.
Intended date and place of publication of results.
Description of samples required including accession number.
Scholarly justification for undertaking work.

To be filled in by lending institution:

Comments/recommendations fields from curator/keeper/conservator/advisory panel as appropriate.
Date of release of sample.
(subsequent) Date of return of sample.
(subsequent) Details of published papers.

To be filled in by applicant (and supervisor/head of department if contract is not permanent):

Acceptance of conditions of loan.

If permission to receive these samples is granted I undertake:

- To make available, to the lending institution, all results of the analysis of the samples, in confidence and prior to publication.
- To return to *the lending institution* all mounted and residual samples within a maximum period of three years from sampling (longer periods must be agreed in advance, in writing).
- To provide a copy of all relevant publications to the lending institution.
- To pay any agreed costs incurred.

Signed:

Date:

Materials Suppliers:

Paraloid B72 (ethyl methacrylate copolymer)

Incralac (ethyl methacrylate copolymer + benzotriazole)

RH indicator strips

Silica gel

Acetone (propanone)

Conservation Resources (UK) Ltd
Units 1,2,4&5 Pony Road, Horspath
Industrial Estate

Cowley

Oxford OX4 2RD

Tel: 01865 747755

Fax: 01865 747035

Plastazote (polyethylene foam)

Polyforms Ltd.

Cherry Court Way

Stanbridge Road

Leighton Buzzard

Beds LU7 8UH

Tel: 01525 852444

Fax: 01525 850484

Stewart boxes (polypropylene)

Crystal boxes (polystyrene)

The Stewart Company

Stewart House

Waddon Marsh Way

Purley Way

Croydon CR9 4HS

Tel: 020 8686 2231

Fax: 020 8688 3857

Silica gel

RH indicator strips

GeeJay Chemicals Ltd

16 Gosforth Close

Middlefield Industrial Estate

Sandy

Beds. SG19 1RB

Tel: 01767 682774

Fax: 01767 692409

Stewart boxes (small quantities)

Azpack Ltd

12 Kernan Drive

Swingbridge Trading Estate

Loughborough

Leicestershire LE11 5JF

Tel: 01509 261256

Fax: 01509 610650

Desiccating cabinet

Benetec Ltd

Grosvenor House

1, High Street

Edgware

Middlesex HA8 9TA

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