

# ARCHAEOLOGY DATASHEET 108

## The care and curation of metallurgical samples



### Introduction

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; Inralac, 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 example overleaf is based on one used in the National Museums and Galleries of Wales Department of Archaeology and Numismatics, and there is another, for the National Slag Collection, at [www.hist-met.org/resources](http://www.hist-met.org/resources)

Mary Davis and David Starley  
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### 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 (methyl methacrylate copolymer + benzotriazole)

RH indicator cards

Silica gel

Acetone (propanone)

Conservation Resources (UK) Ltd  
15 Blacklands Way, Abingdon-on-Thames,  
Oxon OX14 1DY  
Tel: 01235 553166  
Fax: 01235 534865  
E-mail: [conservarts@aol.com](mailto:conservarts@aol.com)

Plastazote (polyethylene foam)

Polyformes Ltd  
Cherry Court Way, Stanbridge Road,  
Leighton Buzzard, Beds LU7 4UH  
Tel: 01525 852444  
Fax: 01525 850484  
E-mail: [info@polyformes.co.uk](mailto:info@polyformes.co.uk)

Stewart boxes (polypropylene)

Crystal boxes (polystyrene)

The Stewart Company  
Stewart House, Waddon Marsh Way  
Purley Way, Croydon CR9 4HS  
Tel: 020 8603 5700  
Fax: 020 8688 3857  
E-mail: [info@stewartcompany.co.uk](mailto:info@stewartcompany.co.uk)

Silica gel

RH indicator strips

GeeJay Chemicals Ltd  
1 Beamish Close, Sandy, Beds SG19 1SD  
Tel: 01767 682774  
Fax: 01767 699697  
E-mail: [sales@geejaychemicals.co.uk](mailto:sales@geejaychemicals.co.uk)

Stewart boxes (small quantities)

Azpack Ltd  
12 Kernan Drive, Swingbridge Trading Estate,  
Loughborough, Leics LE11 5JF  
Tel: 01509 261256  
E-mail: [sales@storeanddisplay.co.uk](mailto:sales@storeanddisplay.co.uk)