

REVISIONS

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1.0 SCOPE

1.1 Scope

This specification covers the cleaning, marking, storing, packaging and handling of all beryllium and finished beryllium parts used on ACIS at the campus of MIT.

2.0 APPLICABLE DOCUMENTS

2.1 Governmental documents.

The following document of the latest issue in effect forms a part of this specification to the extent specified herein.

SPECIFICATIONS

Military

MIL-P-17667 Paper, Wrapping, Chemically Neutral (Non-Corrosive)

3.0 REQUIREMENTS

3.1 Material

This specification covers all beryllium, including raw stock, beryllium in work, and finished parts.

3.2 Equipment

The following items shall be available, as required:

- a. Cleaning Agent (refer to 3.3.2)
- b. Clean lint-free gloves
- c. Pads or mats of resilient abrasive-free clean dry material such as Kim-Wipes, polyurethane or polystyrene

3.3 Procedure

3.3.1 Handling precautions.

Beryllium parts shall be handled with clean, lint-free gloves and not touched with bare hands. Foreign materials, grease or other contaminants shall be removed in accordance with 3.3.2. Tools, work surfaces, and storage areas shall be clean, dry and grease-free. Material or finished parts not in work shall be protected from dust, finger-prints and corrosive vapors at all times; the use of plastic bags or wrapping in chemically inert paper conforming to MIL-P-17667 is recommended. Beryllium shall not be dropped, struck, scratched or otherwise shock-loaded.

Caution: Powdered Beryllium is a toxic material and all personnel shall avoid making and subsequently breathing beryllium dust. Refer to the safety precautions in 5.2 of this specification.

3.3.2 Cleaning

Beryllium operations requiring cleaning shall be cleaned using isopropyl alcohol. Immediately following solvent cleaning, the metal shall be double-rinsed in deionized or distilled water and dried with clean warm forced air. Tap water, or methanol shall not be used during any cleaning procedure. Ultrasonic agitation will usually increase the effectiveness of solvent cleaning.

3.3.3 Installation/Assembly

During installation into assemblies particular care shall be taken to avoid contamination or damage (see 3.3.1). If metal removal could result from the fitting of parts, the work surface shall be wiped down with cleaning solvent using Kim-Wipes and disposed of in hazardous waste bags. Refer to paragraph 5.2 for disposal. **Hammering, filing, or force-fitting of beryllium parts is not to be done.**

3.3.4 Identification/Marking

The purpose of identifying these parts is to inform potential handlers of the parts composition. This will enable people to take the precautions specified in this document. All beryllium parts will be conspicuously identified with the word "Beryllium" on the part or on the bag containing the part. Purchase orders for beryllium parts or beryllium sheet will include, as a condition of purchase, the above identification requirement.

3.3.5 Storage

Raw material, (only sheet stock can be purchased) shall be stored in the shipping containers to protect the beryllium from moisture, dirt, fingerprints, and accidental damage by scratches or knocks. Identification marking as required by the purchase order and section 3.3.4 above shall be marked on containers to identify the contents.

Finished parts shall be protected from water vapor and other contaminants at all times. Parts shall be protected by preforms, polyethylene terephthalate film or clean tightly closed containers with silica gel units. Containers shall be sealed to keep the desiccant active for the storage period.

4.0 QUALITY ASSURANCE PROVISIONS

4.1 Inspection

Parts, marking and packaging shall be inspected for conformance with the procedures of this specification

4.2 Training

Quality assurance will ensure that all individuals that could handle beryllium parts be made aware of the contents of this document.

5.0 NOTES

5.1 Health hazards

Inhalation of beryllium dusts or oxides (such as produced in filing, etching, fluid spills, or heating to elevated temperatures) must be avoided. The contact of beryllium dusts or oxidizers with blood, tears or saliva should be avoided. Punctures where beryllium penetrates the skin must receive prompt medical attention.

5.2 Hazardous waste

Beryllium dust is considered to be hazardous waste and must be disposed of by qualified individuals. Kim-wipes that may contain beryllium dust shall be placed in plastic bags. The bags will be brought to building 37 hazardous waste area by quality assurance personnel.