

APPENDIX 4-A**STORAGE OF BERYLLIUM - COPPER MASTER ALLOY**

1. *Description.* This material is generally known as 4% beryllium-copper master alloy. It is formed as pigs or ingots weighing about 5 pounds each. When acquired, it shall meet Purchase Specification P-94-R3 (Current Edition).

2. *Packaging.* Beryllium - copper master alloy to be acquired or to be repackaged will be placed in storage in containers meeting the requirements of current acquisition specifications. Material packed in other types or sizes of containers shall remain in present containers until otherwise authorized by the DNSC-OL.

3. *Marking*

a. Prior to receipt, each container will be marked with the following information:

- (1) Name of Product
- (2) Name of Producer
- (3) Gross and Net Weights
- (4) Government Contract Number
- (5) Heat Lot Number
- (6) Drum Serial Number (e.g. 1/20, 2/20, etc.)
- (7) Number of Pigs or Ingots
- (8) Beryllium Content

b. The drums for new receipts shall have attached, adhesively, three aluminum tags 3" x 5". Tags will be glued to each flat side of the cover and one to the side of the drum midway between the locking ring and the upper rolling hoop.

c. Identification of material shall be obtained from information shown on documents accompanying each shipment and on shipping instructions issued by the DNSC-OL. The DNSC-OL shall be notified immediately if shipments are received prior to receipt of identifying documents, if shipments are received without identifying marks, or if the markings are not in agreement with those shown on the documents and/or shipping instructions.

4. *Storage*

a. Material received in hot-dip galvanized, C-1 (latest revision), steel drums may be stored in a warehouse, shed or other structure unless storage in the open is specifically authorized by the DNSC-O.

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When storage in the open is authorized, the space utilized shall be equivalent to Type B or better, as described in this chapter, capable of sustaining a load of not less than 2,000 pounds per square foot. Hot-dip galvanized drums may be recognized by a one-inch letter "S" in the gauge date line which is embossed in the bottom of the drums by the drum manufacturer. Drums made from electrolytically galvanized steel sheet do not carry the letter "S" and must be stored in a shed or warehouse.

b. Storage identity shall be maintained by contract and lot number as indicated on each container and in shipping instructions.

c. When material is to be stored in a warehouse, shed or other structure, the first tier of drums shall be placed on floor pallets in upright position after which one-inch thick random length and width hardwood dunnage lumber shall be used between each succeeding tier. Because of weight, the maximum height of stacks will be four drums unless otherwise directed by the DNSC-OL. As a precaution against pilferage the top drums of material shall be inverted on the pallet. If the use of dunnage lumber between tiers is not practical because of weight of containers, or difficulty in handling, pallets may be used between tiers. Main transportation aisles shall not exceed that required for the efficient operation of local material handling equipment. Complete description of each lot shall be indicated on a card which shall be prominently displayed and securely attached to each lot in the stack. DNSC storage sites will use the Warehouse Materials Identification Card, DNSC Form 41, for this purpose. The forms, which are specifically designed for use with stockpile material, will be furnished to military depots upon request.

d. When material in galvanized drums is designated for storage in the open, drums shall be stored on their side and stacked in cordwood fashion on concrete runners or blocks.

e. Drum storage areas should be laid out with emphasis on maximum occupancy since no rotation handling is expected. When stored in the open, the joint of the locking ring that holds the head on the drum should always be at the bottom. Storage aids to keep drums stable shall be of concrete. Use of cinder block for this purpose is prohibited.

f. Maximum stacking height of drums stored in open space will be four and maximum width of a storage block will be four drums, unless otherwise directed by the DNSC-OL. Inspection aisles shall be provided between storage blocks and main transportation aisles shall not exceed that required for the operation of local handling equipment. Each lot should be stored so that it is readily accessible for outshipment. Lots may be stored in adjacent rows, within the block, and a row may contain parts of two lots provided each lot is readily accessible by use of overhead handling equipment.

g. Whether stored in a warehouse, shed, etc., or in the open, the drums shall be stored in uniform rows and tiers so as to facilitate the taking of an inventory at any time by counting the rows and tiers and computing the total quantity. In doing this, however, economical use of space must be given full consideration, and all segregation and other requirements must be met. When pallets are used, a uniform number of drums shall be placed on each pallet, except when an odd number on the top pallet of a stack of uniform height will complete the lot.

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h. Drums now in storage may sometimes be marked only on their sides. In order to identify contents of drums to be stored horizontally in open space, it may be necessary for the depot to mark the required identity data on the top cover of such drums, or to attach an appropriate identification tag to the clamp ring bolt, whichever is deemed most appropriate under the conditions involved and authorized by the DNSC.

i. Each depot will maintain a locator or plot map system covering material stored. The system utilized should be so developed that ready identification can be made at any time, as indicated herein for maintenance of identity in storage.

5. *Precautions To Be Taken*

a. *Health.* If loose metal must be handled, dust should be minimized and respirators and gloves worn.

b. *General.*

(1) Rough handling may cause extensive damage to the galvanized coating on the drums. When discovered, all abrasions and/or scratches shall be coated with a zinc base paint prior to placement of drums in permanent storage. Proper care shall be exercised in handling drums in order to avoid damage. Upon receipt, drums should be carefully checked to ensure that the lids are securely fastened.

(2) Beryllium-copper master alloy now in storage will not be re-stored to meet the above requirements except upon specific authority of the DNSC-OL. Material will not be moved from its original place of storage without authority from the DNSC-OL.

6. *Average Storage Factor.* The average factor for storage of beryllium-copper master alloy is approximately 2.4 gross square feet per short ton when stored four drums high upright and about 3.6 gross square feet per short ton when stored four drums high horizontally.

FOR ADDITIONAL INFORMATION ON THIS COMMODITY REFER TO THE MATERIAL SAFETY DATA SHEET OR THE MOST RECENT PURCHASE SPECIFICATION.