

APPENDIX 4-A

STORAGE OF TIN

1. *Description*

a. Tin is a soft, whitish metal usually received in the form of pigs weighing from 55 to 110 pounds each. Any of the following grades may be received for storage:

- (1) Grade AAA
- (2) Grade AA
- (3) Grade A
- (4) Grade B
- (5) Grade C

b. Only Grade "A" tin remains in storage. When acquired tin shall meet Purchase Specification P-55-R3 (Current Edition).

2. *Packaging.* Tin usually is shipped loose but may be received in wired or strapped unit loads.

3. *Marking.* Identification of the material will be obtained from information shown on shipping documents. In addition, each pig will have letters indicating the grade cast or die-stamped into the metal. The DLA Strategic Materials shall be contacted by telephone for further instructions if shipments are received prior to receipt of identifying documents, if shipments are received without grade symbols cast or die-stamped into the metal, or if grade symbols are different from that shown on shipping documents.

4. *Storage*

a. Tin shall be stored on open improved space equivalent to Type B (stabilized aggregate) as described in Section 4 of this Manual, capable of sustaining a load of not less than 2,000 pounds per square foot.

b. As tin is produced in pigs of variable sizes, it is impossible to prescribe a precise manner for forming lifts of a uniform count. Generally, the make-up of the lifts will be left to the discretion of the Depot Manager; however, all lifts of a specific type and grade of tin must contain a uniform number of pieces, and correspondingly, each stack of tin comprising a block stack must be of uniform height and total count. Where base and spacer pieces are used to provide stack stability and ease of handling, all stacks must contain the same number of base and spacer pieces. This method of storage permits the taking of an inventory at any time by count and computation.

c. Residual pigs that may remain after uniform stacks are formed shall be placed in a separate stack as part of the same block. The residual stack shall be banded with galvanized banding or

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strapped as necessary to maintain its integrity.

d. The maximum height of stacks comprising both interior and perimeter rows, including base and spacer pieces, shall be 5 feet (generally 3 lifts). Stacks making up the perimeter rows shall be set up in step fashion, with the base pieces and bottom lift set out approximately 12 inches, the second 6 inches, and the third lift against the block. If the reach of the forklift does not permit forming "step stacks" by using the distances indicated, such distances may be adjusted, but in no case shall the bottom lift be less than 8 inches from the block.

e. Since tin adapts itself to self palletizing when stacked, pallets or dunnage shall not be used in the stacks.

f. Segregation by grade is required. Aisles separating blocks shall be held to a minimum width necessary for operating requirements.

g. An aluminum tag shall be attached by means of aluminum wire to the main aisle stack of each storage row. The tag shall show the name of material, grade, storage location, number of stacks in the row, number of pieces in each stack, and total number of pieces in the row. For example:

(Name and Grade)	Tin - A
(Storage Location - Block 4, Area A, Row 3)	4 - A - 3
(Number of stacks and pieces in stack)	14 x 111 + 1 x 75
(Total pieces in row)	1, 629

h. Tags, wire, and an embossing machine shall be furnished by the DLA Strategic Materials.

5. Precautions To Be Taken

a. *Health.* None.

b. *General.* Important: Under no circumstances shall the material be moved from its original place of storage without authority from DLA Strategic Materials. If relocation of material is authorized by the DLA Strategic Materials, refer to guidance on die-stamping requirements contained in Chapter 4 of this Manual.

c. *Tin Disease.* Blister or wart-like lumps on the surface or crumbling at the edges of pigs may occur in tin, especially Grades AAA, AA, and A. Should this occur, it indicates a transformation to granular grey tin. Usual appearance of this kind, when observed on surfaces of the pigs of tin, shall be reported promptly to the DLA Strategic Materials. No further action is required except

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as instructed in individual instances by the DLA Strategic Materials. Lots containing diseased pigs must not be moved until sold or rotated in order to prevent contamination by seeding of sound tin, unless authorized in accordance with paragraph 4.b.

d. *New Receipts*. In the event of new acquisitions of tin, the following will be considered:

(1) Storage location will be selected in light of the latest information available concerning the effect of temperature on the long-term storage of tin.

(2) New receipts of tin will be segregated by brand name.

6. *Average Storage Factor*

2.0 gross square feet per short ton.

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