

# 10-00-CD-004 Pure Metals Material Specification

**Effective Date: July 24, 2019**

| Revision Date | Previous Revision | Summary of Changes   | Author    |
|---------------|-------------------|--|-----------|
| 7/13/17       | 3/08/16           | Updated Approved List & new title assigned<br>Updated Section 2 Deleted Alona Martin & added Joel Burt | J. Horner |
| 7/24/19       | 7/13/17           | Updated Lead Ingot Bismuth limit to 0.04%  | J. Horner |

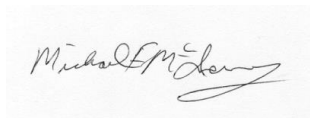
The attached specifications are for pure metal materials purchased for use with all alloys produced by Chase Brass and Copper, LLC. The information supplied defines allowable limits based on ASTM or other industry defined limits for such metals and notes the acceptable forms that are allowable.

This specification also serves as a reminder that failure to meet any of our chemical limits, labeling, allowable forms/types, and documentation or packaging requirements as listed in this specification letter may result in rejection of the material. In certain cases, deductions (at Chase discretion) may be applied. These will also include all costs associated with any special handling requirements necessitated by deviation from these specifications, including, but not limited to costs incurred by third party external processing. Please note that any changes in metal supply will require advance approval from Metal Procurement.

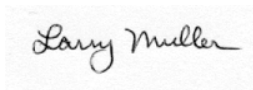
***IMPORTANT NOTE RELATED TO METAL: Materials containing any elements in amounts greater than stated on this applicable specification referenced on our purchase order or this standard shall be subject to rejection. This specification does not apply to aggregate concentrations for the entire load; the presence of individual pieces exceeding the applicable specification will be subject the entire load to rejection.***

***In the event that any non-compliant pure metals are not detected during the normal course of incoming quality inspections, Chase Brass & Copper reserves the right to hold the vendor/supplier (defined specifically as the Entity named on the applicable Purchase Order) wholly responsible for any and all costs and expenses (including, but not limited to, material costs, equipment cleaning/replacement, regulatory activities and legal fees), resulting from, or associated with, the contaminated materials entering our process and product.***

**APPROVED BY:**



M. F. McInerney  
Metal Procurement/ Traffic Manager



Larry Muller  
Senior Technical Advisor



Jack Horner  
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**SECTION #1: Incoming Pure Materials Chemistry Limits (Max. % unless noted)<sup>1</sup>**

|                 | Cathode Copper<br>ASTM B115 Grade 2 | ZINC – SHG<br>ASTM B6 | LEAD – Pure Grade<br>(ref ASTM B29) | SILICON           | COPPER-PHOS<br>(85/15) |
|-----------------|-------------------------------------|-----------------------|-------------------------------------|-------------------|------------------------|
| Package<br>Size | SHEET                               | 55-Pound Ingots       | 25-Pound Ingots                     | ½-Inch X-<br>Down | WAFFLE                 |
| Al              | 0.001                               | 0.002                 | 0.010                               | 0.200             | 0.010                  |
| As              | 0.0015                              | 0.003                 | 0.001                               | 0.005             | 0.005                  |
| Ag              | 0.005                               | 0.007                 | 0.008                               | 0.007             | 0.007                  |
| Be              | 0.001                               | 0.003                 | 0.005                               | 0.005             | 0.005                  |
| Bi              | 0.001                               | 0.003                 | 0.040 <sup>2</sup>                  | 0.010             | 0.010                  |
| Ca              | 0.003                               | 0.003                 | 0.003                               | 0.070             | 0.003                  |
| Cd              | 0.001                               | 0.005                 | 0.005                               | 0.005             | 0.010                  |
| Cr              | 0.005                               | 0.005                 | 0.005                               | 0.005             | 0.005                  |
| Cu              | 99.99 min                           | 0.002                 | 0.0015                              | 0.010             | 85 nom.                |
| Fe              | 0.0025                              | 0.003                 | 0.050                               | 0.500             | 0.15                   |
| Mg              | 0.001                               | 0.003                 | 0.005                               | 0.010             | 0.010                  |
| Mn              | 0.001                               | 0.003                 | 0.010                               | 0.010             | 0.010                  |
| Ni              | 0.002                               | 0.001                 | 0.001                               | 0.050             | 0.100                  |
| P               | 0.001                               | 0.001                 | 0.025                               | 0.025             | 14.0 – 16.0            |
| Pb              | 0.004                               | 0.003                 | 99.94 min.                          | 0.010             | 0.010                  |
| Sb              | 0.0015                              | 0.003                 | 0.001                               | 0.015             | 0.015                  |
| Se              | 0.001                               | 0.001                 | 0.005                               | 0.005             | 0.005                  |
| Si              | 0.001                               | 0.001                 | 0.0010                              | 98.50 min.        | 0.010                  |
| Sn              | 0.001                               | 0.001                 | 0.001                               | 0.050             | 0.050                  |
| Te              | 0.001                               | 0.001                 | 0.010                               | 0.010             | 0.010                  |
| Zn              | 0.01                                | 99.990 min.           | 0.001                               | 0.010             | 0.010                  |

FOOTNOTE 1 – All material must be free of radiation, moisture, disclosed and undisclosed hazardous materials, and other contaminants.

FOOTNOTE 2 – Bismuth content for Lead Ingot based on Chase requirement and not the referenced ASTM limit (0.05%).



## **SECTION 2: Scheduling Deliveries, Material Identification and Paperwork:**

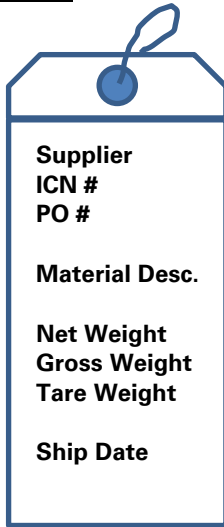
1. All deliveries are by appointment only. Please contact Chase Brass Metal Procurement Department for a delivery appointment date and time with one of the following contact methods:
  - a. E-mail: [scrapchedule@chasebrass.com](mailto:scrapchedule@chasebrass.com)
  - b. Phone contacts:
    - i. Stacy Roth (419) 485-8915
    - ii. Joel Burt (419) 485-8923
    - iii. Deb Worman (419) 485-8966
  
2. All containers (box / pallet / skid) must contain the following information (deductions will apply to miss/unlabeled materials)
  - a. Shipper/Supplier Name
  - b. SFC (Purchase Order Number)
  - c. Alloy / Material Designation on each container / pallet / skid
  - d. Gross, Tare and Net Weight of each container / pallet / skid
  
3. Each delivery shall include:
  - a. Bill of Lading complete with:
    - i. BOL Number, Supplier Name, Shipper Name, Carrier Name, Chase PO Number
    - ii. Gross, Tare and Net Weight of material on load
    - iii. Description of material on load including material / metal designation
  - b. Packing List
    - i. Itemized list of each container on load including material and alloy
    - ii. Supplier Name and Chase PO Number
  
4. All materials must be dry (free of water, oil, grease or other contaminants)



## **Appendix #1: Labeling/Tagging Information Requirements:**

See below, an example of the kind of Tag and labelling required.

### **The Tag**



E.g. 6 1/4 x 3 1/8 "

Multi-layer  
Carbonless  
Prewired

Chase need to be able to easily remove 1 layer from the label, showing all of the required information (left).

The order of the information shown is preferred but not prescriptive.

