RandallBearings.com

# RANDALL

## Lead-Free | Low-Lead Alloys

**Bronze alloys have been a staple to industry for millennia. A push for the reduction of lead has become increasingly dominant.**

**In our Lead-Free | Low-Lead products lead is replaced with other elements to offer:**

- ☑ Extraordinary Wear-Resistance
- ☑ Exceptional Lubrication Properties
- ☑ Outstanding Strength
- ☑ Excellent Dimensional Stability

**Decrease the lead contamination with our Lead-Free | Low-Lead products.**

**Less Lead =** More Solutions

**Randall Bearings, Inc.**

P.O. Box 1258, Lima, OH 45804
Phone: 419.223.1075
Fax: 419.228.0200
sales@randallbearings.com
**RandallBearings.com**


**Standard Stocked Alloys**

C89835 | C90300 | C95400 | C95500 | C95900

**Other Available Alloys**

C89325 | C89831 | C89833 | C89844 | C90800 | C90810

# Lead-Free/Low-Lead Alloys Overview

| | Copper Alloy UNS No. | Cu% | Pb% | Sn% | Zn% | Fe% | P% | Ni% | Al% | Bi% | As% | Mn% | S% | Sb% | Si% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bismuth Based | | | | | | | | | | | | | | | |
| | C89325 | 84.00-88.00 | 0.10 | 9.00-11.00 | 1.00 | 0.15 | 0.10 | 1.00[3] | 0.005 | 2.70-3.70 | | | 0.08 | 0.50 | 0.005 |
| | C89831 | 87.00-91.00 | 0.10 | 2.70-3.70 | 2.00-4.00 | 0.30 | 0.05 | 1.00[3] | 0.005 | 2.70-3.70 | | | 0.08 | 0.25 | 0.005 |
| | C89833 | 86.00-91.00 | 0.09 | 4.00-6.00 | 2.00-6.00 | 0.30 | 0.05 | 1.00[3] | 0.005 | 1.70-2.70 | | | 0.08 | 0.25 | 0.005 |
| | C89835 | 85.00-89.00 | 0.09 | 6.00-7.50 | 2.00-4.00 | 0.20 | 0.10 | 1.00[3] | 0.005 | 1.70-2.70 | | | 0.08 | 0.35 | 0.005 |
| | C89844 | 83.00-86.00 | 0.20 | 3.00-5.00 | 7.00-10.00 | 0.30 | 0.05 | 1.00[3] | 0.005 | 2.00-4.00 | | | 0.08 | 0.25 | 0.005 |
| High Tin | | | | | | | | | | | | | | | |
| | C90300 | 86.00-89.00[1] | 0.30 | 7.50-9.00 | 3.00-5.00 | 0.20 | 0.05[2] | 1.00[3] | 0.005 | | | | 0.05 | 0.20 | 0.005 |
| | C90800 | 85.00-90.00[1] | 0.25 | 11.00-13.00 | 0.25 | 0.15 | 0.30[2] | 0.50[3] | 0.005 | | | | 0.05 | 0.20 | 0.005 |
| | C90810 | Rem.[1] | 0.25 | 11.00-13.00 | 0.30 | 0.15 | 0.15-0.80[2] | 0.50[3] | 0.005 | | | | 0.05 | 0.20 | 0.005 |
| Aluminum Bronze | | | | | | | | | | | | | | | |
| | C95400 | 83.00 min | | | | 3.00-5.00 | | 1.50[3] | 10.00-11.50 | | | 0.50 | | | |
| | C95500 | 78.00 min | | | | 3.00-5.00 | | 3.00-5.50[3] | 10.00-11.50 | | | 3.50 | | | |
| | C95900 | Rem. | | | | 3.00-5.00 | | 0.50[3] | 12.00-13.50 | | | 1.50 | | | |

[1]In determining Cu min., Cu may be calculated as Cu + Ni. [2]For continuous castings, P shall be 1.5%, max. [3]Ni value includes Co.
Note: Unless otherwise noted, single values represent maximums.

Lead-Free Alloy · Low-Lead Alloy · Standard-Stocked Alloy · Other Available Alloy

RANDALL

**Randall Bearings, Inc.**
P.O. Box 1258 | Lima, OH 45802
**PHONE** 419.223.1075 | **FAX** 419.228.0200