INTERNATIONAL WROUGHT COPPER COUNCIL

Lead-Free Brass Initiative Newsletter
Message to the Customers of the Brass Semis Industry

Introduction

The 'Lead-Free Brass Initiative' has been launched by the International Wrought Copper Council (IWCC)[1] in response to ever tightening European regulation of lead. Currently the chemical composition of copper alloys must comply with the requirements set out in several EU regulations:

- DWD (2020/2184/EC) concerning the quality of water intended for human consumption,
- RoHS (2011/65/EU) on the restriction of the use of certain dangerous substances in electrical and electronic equipment,
- ELV (2000/53/EC) in regard to end-of-life vehicles
- REACH (1907/2006/EC) on the registration, evaluation, authorisation and restriction of chemicals
- CLP (1272/2008/EC) on the classification, labelling and packaging of chemical substances and mixtures

Future regulation is expected to require even further reductions in lead content of copper alloys. While neither the extent of lead reduction nor the implementation deadlines are yet known, it is anticipated these will start in 2025-2026.

IWCC Initiative

The brass rod industry is therefore taking proactive steps to ensure the reduction of lead in brasses takes place without undermining the circular economy, reducing sustainability, and causing serious issues for the industry and its customers.

The first risk from ever tightening lead regulation is that the circular economy for brass would be compromised. With recycled content of copper alloy semis averaging well above 70%, recyclability[2] is one of the benefits of this material. If individual companies change their alloy mix in different ways to reduce quantities of lead these different types of brasses could be incompatible in the recycling stream. There would need to be separate scrap streams for each alloy, which would be unfeasible. This would cause severe economic damage to the supply chain and, ultimately, damage to the whole EU circular economy.

Furthermore, as brass scrap could no longer be recycled, it would be replaced with primary materials (copper and zinc). This would reduce sustainability with a significant impact on the planet's natural resources, resulting in greater energy consumption and increased CO_2 emissions.

In addition, it is well known[3, 4, 5 & 6] that any reduction of the lead content triggers a reduction in the workability of copper alloys. Therefore, a sudden and swift decrease in the lead content from currently permitted levels to relatively low limits would cause serious problems for the brass rod industry and its customers.

Roadmap

Through the IWCC, the European brass rod industry is acting proactively, in consultation with regulatory bodies, to mitigate the damage of an uncontrolled reduction of lead. The IWCC has launched a Roadmap[7] for the gradual reduction of the lead content of copper alloys. This Roadmap is feasible for industry and is expected to reduce lead usage in copper alloys by 70% or potentially more.

[1] See coppercouncil.org
[2] CDA USA, IWCC & ICA 2020 survey of Scrap Contamination in the Global Semis Industry
[3] Dresher W.H. and Peters D.T., 1992: *Lead-free and reduced-lead copper-base cast plumbing alloys: evaluation of candidate U.S. compositions*, internal report, International Copper Association, New York.
[4] Iolacono D.N. and Plewes J.T., 1990: *Machinable lead-free wrought copper-containing alloys*, USA patent n° 5167726, issued 1992.
[5] Oishi K., 1998: *Leadless free-cutting copper alloy*, WO 2000022 182 A1 issued 2000.
[6] Welter J-M., 2010: *The role of lead as an alloying element in copper alloys used for automotive components*, report on behalf of the European Copper Institute, Brussels.
[7] See leadfreebrass.org

January 2023