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Abstract:

Copper Alloys for Drinking Water Applications – Uncertain Future of Proven Plumbing Materials

Currently many components of drinking water installations are made from copper alloys which are established and proven materials. Changing regulatory requirements lead to continuous modification of their composition. In the last two decades the focus of these requirements was on the reduction of lead leaching into drinking water while maintaining machinability and corrosion resistance of the materials. Hygienically suitable materials are listed on 4MS und German UBA positive lists. Currently, the reduction of the parametric value of lead from 10 to 5 µg/L Pb in drinking water determined by draft EU drinking water directive is the recent and a very severe challenge. Furthermore RoHS requirements concerning toxicity of lead in materials during manufacturing and tough competition with other and cheaper alternative plumbing materials as e.g. plastic materials produce great pressure on manufacturers. Many leaded materials, including new developed ones, will be skipped by parametric value of 5 µg/L Pb.

The presentation gives an overview of existing copper alloys and their properties. Challenges, comparison with other plumbing materials and an outlook into the future will be made.