

MATERIAL DATASHEET  
**ALLOY 410**



Designation		Composition (mass as %, reference values)	
Diehl Metall	410	Cu	62.5
DIN EN symbol	CuZn36Pb2As	Pb	2.0
DIN EN	CW602N	As	0.1
UNS	C35330	Zn	remainder

**Application**

- Alloy 410 is an engineering material of medium strength and good toughness.
- The alloy is particularly suitable for use in aggressive tap water.
- Note: When using the alloy in drinking water applications, the pertinent national regulations and provisions must be observed. In Germany, the following applies: If the alloy does not appear in the positive list of the German Environment Agency (Umweltbundesamt – UBA), it may not longer be installed in drinking water applications after 10.04.2017.
- Alloy 410 is suitable for automated machining and can be cold formed. In the as-delivered condition the material is dezincification-resistant according to test procedure EN ISO 6509. After cold forming, it is advisable to carry out a stress relief annealing process at a temperature of between 280 °C and 320 °C (1 - 2 hours). If processing operations are carried out at temperatures above 600 °C, the dezincification resistance is impaired. It can be restored by means of suitable heat treatment. The annealing temperature for this lies at between 500 °C and 550 °C. For further information, please contact the manufacturer.

**Products and relevant standards**

Rods (free machining purposes)	EN 12164
Rods (forging stock)	EN 12165
Hollow rods (free machining purposes)	EN 12168
Profiles (general purposes)	EN 12167
Seamless, round tubes (general purposes)	EN 12449

**Physical properties**

Density	g/cm <sup>3</sup>	8.45
Coefficient of linear thermal expansion: 20 – 200 °C	• 10 <sup>-6</sup> /K	20.0

**Processing properties**

Machinability (CuZn39Pb3 = 100%)	good (Index 80)
Hot formability	moderate
Cold formability	good

**Mechanical properties and hardness**

- The strength properties and hardness values are specified in the relevant product standards.
- The properties depend on the product, the condition and the dimensions.

**Heat treatment**

Soft annealing	450 – 550 °C
Stress relief annealing	250 – 350 °C

**Corrosion resistance**

- Generally good resistance to neutral, alkaline and organic aqueous solutions.
- Dezincification-resistant according to the relevant standards.

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