

MATERIAL DATASHEET  
**ALLOY 402**



Designation		Composition (mass as %, reference values)	
Diehl Metall	402	Cu	61.5
DIN EN symbol	CuZn36Pb2As	Pb	1.8
DIN EN	CW602N	As	0.1
UNS	C35330	Zn	remainder

**Applications**

- Alloy 402 is an engineering material of medium strength and good toughness. The material has good hot formability.
- 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 no longer be installed in drinking water applications after 10.04.2017.
- Rods and profiles used as forging stock are not dezincification-resistant in the as-delivered condition. In order to achieve dezincification resistance, heat treatment at 500-550 °C is required for a duration of 2 hours following forging.

**Products and relevant standards**

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	good
Cold formability	moderate – 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	1 – 2 h
Stress relief annealing	250 – 350 °C	1 – 2 h

**Corrosion resistance**

- Generally good resistance to neutral, alkaline and organic aqueous solutions.
- Dezincification-resistant after suitable heat treatment.

**Diehl Metall Stiftung & Co. KG**  
**Diehl Metall Messing**

Heinrich-Diehl-Str. 9 | D-90552 Röthenbach a. d. Pegnitz | Phone +49 911 5704-0 | Email: sales-messing@diehl.com

[www.diehl.com/metall](http://www.diehl.com/metall)

This material datasheet is for general information purposes only and is not subject to any revision service. Claims may not be derived from it unless there is evidence of intent or gross negligence. The data presented does not provide a warranty that the product is of a specific quality and does not replace any expert advice or customer trials.