

MATERIAL DATASHEET  
**ALLOY 003**



Designation	
Diehl Brass Solutions	003
DIN EN symbol	CuZn40Pb2
DIN EN	CW617N
UNS	C38000

Composition (mass as %, reference values)	
Cu	58.0
Pb	2.0
Zn	remainder

### Application

- Very good hot formability and machinability; only limited cold formability.
- Suitable for drop forgings and automated machining.
- The alloy can be used in drinking water installations.

### 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

### Physical properties

Density	g/cm <sup>3</sup>	8.4
Coefficient of linear thermal expansion: 20 – 200 °C		• 10 <sup>-6</sup> /K
		21.1

### Processing properties

Machinability (CuZn39Pb3 = 100%)	very good (Index 95)
Hot formability	very good (650 – 760 °C)
Cold formability	less suitable

### 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	280 – 330 °C	1 – 2 h

### Corrosion resistance

Generally good resistance to neutral, alkaline and organic aqueous solutions.

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