

MATERIAL DATASHEET
ALLOY 003



Designation	
Diehl Metall	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 ³	8.4
Coefficient of linear thermal expansion: 20 – 200 °C		• 10 ⁻⁶ /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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