DIEHL
Brass Solutions

MATERIAL DATASHEET

ALLOY 434 (CUPHIN)

Designation	
Diehl Brass Solutions	434 Pbf (CUPHIN)
DIN EN symbol	CuZn21Si3P
DIN EN	CW724R(-DW)
UNS	C69305

Composition (mass as %, reference values)	
Cu	76.0
Si	2.8
P	0.05
Sn	0.2
Al	0.04
Zn	remainder

Application

- Particularly suitable for use in drinking water applications due to good corrosion resistance. Lead-free machining alloy with very good hot formability. High-strength engineering material.
- If processing operations are carried out at temperatures above 580 °C, the dezincification resistance is impaired. It must therefore be restored by means of suitable heat treatment. Dezincification resistance is restored by heat treatment at 550 - 580 °C over a period of 2-3 hours. For further information, please contact the manufacturer.

Products and relevant standards

Rods (general purposes)	EN 12163
Rods (free machining purposes)	EN 12164
Rods (forging stock)	EN 12165
Hollow rods (free machining purposes)	EN 12168
Profiles (general purposes)	EN 12167

Mechanical properties, minimum values according to dimensions

- The mechanical properties are specified in the relevant product standards (see products).
- The properties depend on the product, the condition and the dimensions.

Physical properties

Density	g/cm³	8.3
Coefficient of linear thermal expansion: 20 – 200 °C	• 10^{-6}/K	19.6

Corrosion resistance

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

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Processing properties	
Forming	
Machinability (CuZn39Pb3 = 100%)	very good
Hot formability	very good
Cold formability	moderate
Surface treatment	
Polishing	good
Electroplating	good
Joining	
Inert gas welding / resistance welding	good
Soft solderability	very good
Hard solderability	very good
Heat treatment	
Hot forming	700 – 750 °C
Soft annealing	550 – 700 °C
Stress relief annealing	200 – 300 °C

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