

MATERIAL DATASHEET

ALLOY 432 Pbf



Designation

Diehl Brass Solutions	432 Pbf
DIN EN symbol	CuZn21Si3P
DIN EN	CW724R(-DW)
UNS	C69300 (C87850)

Composition

(mass as %, reference values)

Cu	76.0
Si	3.0
P	0.05
Zn	remainder

Application

- Lead-free material for producing fine-grained, high-strength and corrosion-resistant castings.
- For castings, the alloy designation CC768S or C87850 must be used. As the material undergoes a forming process at Diehl Metall, the alloy designation is CW724R or C69300.
- If processing operations are carried out at temperatures above 580 °C, the dezincification resistance is impaired. To ensure performance, it can be restored by means of suitable heat treatment.

Products and relevant standards

Rods (general purposes)	EN 12163
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Processing properties

Forming

Castability	good
Machinability (CuZn39Pb3 = 100%)	very good
Cold formability	less suitable

Mechanical properties

Correspond to EN 12163, condition M

Corrosion resistance

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

Physical properties

Density	g/cm ³	8.3
Coefficient of linear thermal expansion: 20 – 200 °C	• 10 ⁻⁶ /K	19.6
Thermal conductivity		
RT	W/(m · K)	28.0
200 °C	W/(m · K)	44.4
Specific thermal capacity		
RT	J/(g · K)	0.35
200 °C	J/(g · K)	0.41
Electrical conductivity	m/(Ω · mm ²)	5.3
Specific electrical resistance	(Ω · mm ²)/m	0.19
Young's modulus	GPa	106.0
Shear modulus	GPa	39.0
Poisson's ratio		0.32

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Risk Disclosure

The tests took place under the test conditions mentioned here. In these tests, selected properties of the alloy can be investigated. The test results are based on the test setup shown, which has specific laboratory conditions. Deviating conditions in the field may have significant effects. Aspects which play a decisive role include, in particular, but not exhaustively, the design of the components, the further processing of the alloy, the processing of the finished parts made with the alloy, transport and storage, the manner and location of use, the installation and the installation situation.

When it comes to properties, the corrosion resistance of the material is a key factor. The DIN standard DIN EN ISO 8044 (formerly DIN 50900) defines corrosion as a reaction of a metallic material with its environment that causes a measurable change in the material and can impair the function of a metal component or an entire system. From a technical point of view, corrosion is a reaction of a material with its environment that causes a measurable change in the material. Corrosion can impair the function of a component or system. Corrosion, as a complex system of interactions, depends on a large number of factors which, in their multifariousness, cannot be fully reproduced under test conditions. The type of corrosion known as dezincification, which occurs with zinc-containing copper alloys that are in contact with drinking water, is familiar to the broad expert public.

The purchaser of the alloy is responsible for determining and testing the design, further processing, application areas of products made from the alloy, and any other relevant factors. This is also applicable when determining the dezincification depth that is considered reasonable for the selected area of application. Diehl cannot accept any liability for this, but solely for the information contained in the enclosed product data sheet.