

MATERIAL DATASHEET

ALLOY 432

| Designation | | Composition (mass as %, reference values) | |
|-----------------------|-----------------|--|-----------|
| Diehl Brass Solutions | 432 | Cu | 76.0 |
| DIN EN symbol | CuZn21Si3P | Si | 3.3 |
| DIN EN | CW724R(-DW) | P | 0.05 |
| UNS | C69300 (C87850) | 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.
- For further information, please contact the manufacturer.

Products and relevant standards

Rods
(general purposes) EN 12163

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 200 °C | W/(m · K) W/(m · K) | 28.0 44.4 |
| Specific thermal capacity RT 200 °C | J/(g · K) J/(g · K) | 0.35 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 |

Diehl Brass Solutions Stiftung & Co. KG

Heinrich-Diehl-Straße 9 | 90552 Röthenbach a.d. Pegnitz | Tel. +49 911 5704-0 | E-Mail: dbs-sales@diehl.com

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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.