

MATERIAL DATASHEET

ALLOY 401 (eZeeDZR)

Designation	
Diehl Brass Solutions	401 (eZeeDZR)
DIN EN symbol	CuZn35MgPAs
DIN EN	CW733R
UNS	tbd.

Composition (mass as %, reference values)	
Cu	63.5
Mg	0.2
P	0.25
As	0.1
Zn	remainder



Application

- Alloy with good cold formability as well as good solderability and weldability.
- The alloy can be used in drinking water installations.
- If the material is processed at temperatures above 600 °C, the dezincification resistance (in accordance with the EN ISO 6509 test procedure and the relevant product standards) is impaired. To ensure performance, suitable heat treatment must therefore be carried out to restore dezincification resistance. The annealing temperature for this lies at between 500 °C to 550 °C. For further information, please contact the manufacturer.

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
Electrical conductivity	at RT	MS/m	14.2
Thermal conductivity	at RT	W/mK	102

Processing properties

Machinability (CuZn39Pb3 = 100%)	good (Index 70-90)
Hot formability	moderate
Cold formability	good

Mechanical properties and hardness

- The strength properties and hardness values correspond to the alloy CuZn36Pb2As and 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
Stress relief annealing	250 – 300 °C
Hot forming	680 – 750 °C

Corrosion resistance

- Generally good resistance to neutral, alkaline and organic aqueous solutions.
- Resistant to dezincification according to the EN ISO 6509 test procedure.

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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.