**Alloy 402**

**Designation**
- Diehl Metall: 402
- DIN EN symbol: CuZn36Pb2As
- DIN EN: CW602N
- UNS: C35330

**Composition**
- Mass as %, reference values:
  - Cu: 61.5%
  - Pb: 1.8%
  - As: 0.1%
  - Zn: remainder

**Applications**
- Alloy 402 is an engineering material of medium strength and good toughness. The material has good hot formability.
- The alloy is particularly suitable for use in aggressive tap water.
- Note: When using the alloy in drinking water applications, the pertinent national regulations and provisions must be observed. In Germany, the following applies: If the alloy does not appear in the positive list of the German Environment Agency (Umweltbundesamt – UBA), it may no longer be installed in drinking water applications after 10.04.2017.
- Rods and profiles used as forging stock are not dezincification-resistant in the as-delivered condition. In order to achieve dezincification resistance, heat treatment at 500-550 °C is required for a duration of 2 hours following forging.

**Physical Properties**
- Density: 8.45 g/cm³
- Coefficient of linear thermal expansion: 20 – 200 °C = 10⁻⁶/K, 20.0

**Processing Properties**
- Machinability (CuZn39Pb3 = 100%): good (Index 80)
- Hot formability: good
- Cold formability: moderate – good

**Heat Treatment**
- Soft annealing: 450 – 550 °C, 1 – 2 h
- Stress relief annealing: 250 – 350 °C, 1 – 2 h

**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.

**Corrosion Resistance**
- Generally good resistance to neutral, alkaline and organic aqueous solutions.
- Dezincification-resistant after suitable heat treatment.

**Products and Relevant Standards**
- Rods (forging stock): EN 12165
- Hollow rods (free machining purposes): EN 12168
- Profiles (general purposes): EN 12167
- Seamless, round tubes (general purposes): EN 12449

**Composition**

<table>
<thead>
<tr>
<th>Element</th>
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<tbody>
<tr>
<td>Cu</td>
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</tr>
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**Designation**

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