DIEHL
Brass Solutions

MATERIAL DATASHEET

# ALLOY 452

| Designation | |
|---|---|
| Diehl Brass Solutions | 452 |
| DIN EN symbol | CuZn37Mn3Al2PbSi |
| DIN EN | CW713R |
| UNS | C67410 |

| Composition (mass as %, reference values) | | | |
|---|---|---|---|
| Cu | 58.5 | Mn | 2.0 |
| Pb | 0.4 | Al | 1.6 |
| Fe | 0.5 | Si | 0.8 |
| Sn | 0.3 | Zn | remainder |

## Application

- Engineering material of high strength, good toughness and with good wear properties.
- Suitable for use in automotive parts, such as synchronizer rings, shift forks and sliding blocks.

## Products and relevant standards

| | |
|---|---|
| Rods (free machining purposes) | EN 12164 |
| Hollow rods (free machining purposes) | EN 12168 |
| Seamless, round tubes (general purposes) | EN 12449 |

## Physical properties

| | | |
|---|---|---|
| Density | g/cm³ | 8.1 |
| Coefficient of linear thermal expansion: 20 – 200 °C | • $10^{-6}$/K | 20.4 |

## Processing properties

| | |
|---|---|
| Machinability (CuZn39Pb3 =100%) | moderate (Index 40) |
| Hot formability | very good (600 – 700 °C) |
| Cold formability | very limited |

## 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.

## Heat treatment

| | |
|---|---|
| Soft annealing | 550 – 650 °C |
| Stress relief annealing | 350 – 450 °C |

## Corrosion resistance

Generally good resistance to neutral, alkaline and organic aqueous solutions.

**Diehl Brass Solutions Stiftung & Co. KG**

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