

MATERIAL DATASHEET
ALLOY 357



| Designation | |
|---------------|------------------|
| Diehl Metall | 357 |
| DIN EN symbol | CuZn36Mn2Al2SiPb |
| DIN EN | Special Alloy |
| UNS | - |

| Composition (mass as %, reference values) | | | |
|--|------|----|-----------|
| Cu | 59.4 | Mn | 2.3 |
| Pb | 0.5 | Al | 1.7 |
| Si | 0.7 | Zn | remainder |

Application

- High-strength, oil-resistant engineering material. For meeting stringent requirements regarding sliding stress.
- Used for synchronizer rings, shift forks and valve guides.

Products and relevant standards

Rods
(free machining purposes) EN 12164

Hollow rods
(free machining purposes) EN 12168

Physical properties

Density g/cm^3 8.45

Coefficient of linear thermal expansion: 20 – 200 °C • $10^{-6}/\text{K}$ 20.5

Processing properties

Machinability
(CuZn39Pb3 = 100%) moderate (Index 50)

Hot formability very good

Cold formability limited

Thermal treatment

Soft annealing 500 – 600 °C 1 – 3 h

Stress relief annealing 350 – 450 °C 1 – 3 h

Mechanical properties and hardness

(reference values: extruded condition)

Tensile strength R_m > 480 N/mm²

0.2 yield strength $R_{p0.2}$ > 300 N/mm²

Elongation A_5 > 10%

Hardness HB (2.5/62.5) > 145

The properties depend on the product, the condition and the

Corrosion resistance

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

Diehl Metall Stiftung & Co. KG

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