DIEHL
Brass Solutions

MATERIAL DATASHEET

# ALLOY 330 Pbf (CUPHIN)

| Designation | |
|---|---|
| Diehl Brass Solutions | 330 Pbf (CUPHIN) |
| DIN EN symbol | CuZn21Si3P |
| DIN EN | CW724R(-DW) |
| UNS | C69300 |

| Composition (mass as %, reference values) | |
|---|---|
| Cu | 76.6 |
| Si | 3.0 |
| P | 0.09 |
| Zn | remainder |

## Application

- Due to its high corrosion resistance, this alloy is particularly suitable for drinking water installations.
- Alloy 330 is a lead-free machining alloy with very good hot formability.
  High-strength engineering material.
- Processing operations at temperatures above 580 °C have a negative effect on dezincification resistance.
  To ensure performance, suitable heat treatment must be carried out to restore dezincification resistance.

## Products and relevant standards

| | |
|---|---|
| Rods (general purposes) | EN 12163 |
| 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/cm³ | 8.3 |
| Coefficient of linear thermal expansion: 20 – 200 °C | • $10^{-6}$/K | 19.6 |
| Thermal conductivity<br>RT<br>200 °C | <br>W/(m · K)<br>W/(m · K) | <br>28.0<br>44.4 |
| Specific thermal capacity<br>RT<br>200 °C | <br>J/(g · K)<br>J/(g · K) | <br>0.35<br>0.41 |
| Electrical conductivity | m/(Ω · mm²) | 5.3 |
| Specific electrical resistance | (Ω · mm²)/m | 0.19 |

## Mechanical properties

The values are given in the relevant product standards for CW724R.

## Corrosion resistance

The alloy has a good resistance to neutral, alkaline and organic liquids, and is resistant to dezincification and stress corrosion cracking according to the relevant standards.

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## Processing properties

| | |
|---|---|
| **Forming** | |
| Machinability (CuZn39Pb3 = 100%) | very good |
| Hot formability | very good |
| Cold formability | moderate |
| **Surface treatment** | |
| Polishing | good |
| Electroplating | good |
| **Joining** | |
| Inert gas welding / resistance welding | good |
| Soft solderability | very good |
| Hard solderability | very good |
| **Heat treatment** | |
| Hot forming | 700 – 750 °C |
| Soft annealing | 550 – 700 °C |
| Stress relief annealing | 200 – 300 °C |


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