

# BRASS

## CZ114 - CW721R



### CZ114 - CW721R

CZ114, also known as CW721R or high tensile brass, is a robust brass alloy developed for applications requiring high strength and corrosion resistance. CZ114 is a duplex or alpha/beta brass alloy, sometimes referred to as manganese bronze due to its composition and properties. This brass alloy's combination of high strength, excellent formability, and corrosion resistance makes it a versatile material for a wide range of applications.

### KEY FEATURES

- Enhanced Strength Levels
- Excellent Hot Forming Properties
- Good Corrosion Resistance
- High Machinability Rating
- Non-Sparking

### CHEMICAL PROPERTIES

| Copper (Cu)   | Lead (Pb)       | Tin (Sn)        | Nickel (Ni) | Iron (Fe)        | Aluminium (Al)  | Zinc (Zn)   |
|---------------|-----------------|-----------------|-------------|------------------|-----------------|-------------|
| <b>59-61%</b> | <b>1.2-1.6%</b> | <b>0.3-0.6%</b> | <b>0.3%</b> | <b>0.25-0.5%</b> | <b>0.1-0.3%</b> | <b>rest</b> |

### MECHANICAL PROPERTIES

|                                       |                |
|---------------------------------------|----------------|
| Tensile strength (N/mm <sup>2</sup> ) | <b>400-600</b> |
| Yield strength (N/mm <sup>2</sup> )   | <b>150-200</b> |
| Elongation (% at break)               | <b>20-35</b>   |
| Hardness - Brinell (HB) tube          | <b>100-150</b> |
| Hardness - Vickers (HV)               | <b>130-170</b> |

### PHYSICAL PROPERTIES

|                                       |                   |             |
|---------------------------------------|-------------------|-------------|
| Density (kg/m <sup>3</sup> )          | <b>8470</b>       |             |
| Modulus of elasticity (Gpa)           | <b>100-115</b>    |             |
| Mean coefficient of thermal expansion | 0-100°C (µm/m/°C) | <b>20.2</b> |
|                                       | 0-350°C (µm/m/°C) | <b>22.6</b> |
|                                       | 0-538°C (µm/m/°C) | <b>24.1</b> |
| Thermal conductivity                  | at 100°C (W/m.K)  | <b>115</b>  |
|                                       | at 500°C (W/m.K)  | <b>95</b>   |
| Specific Heat 0-100°C (J/kg.K)        | <b>380</b>        |             |
| Electrical conductivity (IACS %)      | <b>28</b>         |             |
| Melting point (°C)                    | <b>900</b>        |             |

### MARKET SECTORS



Propeller shafts, marine fittings, valves, pumps



Bearings, bushes, connectors, fittings, components



Door handles, window frames, railings



Connectors, terminals, switch gear components, contacts



Bearings, bushes, gears, valves, shafts



Bearings, bushes, connectors, fittings, components