

CW713R

- High Tensile Brass -

HR4

| Material designation | | Chemical composition* | | | |
|--------------------------|--|-----------------------|---------|------------|--------|
| CuZn37Mn3Al2PbSi | | Elements | % mean | Impurities | % max. |
| EN 12164 / 12165 / 12167 | | Cu | 58.1 | Fe | 0.4 |
| BS 2872 - 2874 | | Pb | 0.65 | Ni | 0.3 |
| NF A 51 - 106 | | Mn | 2 | Other | 0.3 |
| DIN 17660 | | Si | 0.6 | | |
| CW713R | | Al | 1.5 | | |
| CZ135 | | Zn | balance | | |
| CuZn - classe 1 | | | | | |
| CuZn40Al2-2.0550 | | | | | |

* Reference values in % by weight

Properties and typical applications

High tensile brass for machining and hot working with excellent wear resistance. Valve guides, bearings...

| Physical properties at 20°C | | Heat treatment | |
|--|-----|---|---------|
| Density (g/cm ³) | 8.2 | Melting range (°C) | 875-910 |
| Young modulus (GPa) | 92 | Hot working (°C) | 650-700 |
| Thermal expansion coefficient (20-300°C) (10 ⁻⁶ /K) | 20 | Annealing temperature (°C)* | 450-550 |
| Thermal conductivity (W/m.K) | 64 | Stress relieving treatment (°C)** | 300-400 |
| Thermal capacity (J/Kg.K) | 380 | <i>* Annealing treatment of a material leads to reduce its hardness and increase its ductility.</i> | |
| Electrical conductivity (% I.A.C.S.) | 13 | <i>** Stress relieving treatment allows to eliminate the residual stresses present in the material in order to avoid the stress corrosion cracking.</i> | |

| Forming | | Joining | |
|--|------------------------|--------------------------------|-----------------|
| Hot forming | Excellent | Soldering | |
| Cold forming | Not recommended | Soft | Not recommended |
| Machinability | 80% (CuZn39Pb3 = 100%) | Hard | Not recommended |
| Corrosion resistance | | Welding | |
| Special brass alloys show in general a good corrosion resistance in neutral, alkaline and organic fluids due to alloying elements. | | Gaz welding | Fair |
| | | Inert gas shielded arc welding | Good |
| | | Resistance welding | Good |

| Mechanical properties according to EN12164 | | | | | | |
|--|---------------|----|--|----------|------|-------------|
| Condition of material | Diameter [mm] | | Rp0,2 [Mpa] | Rm [Mpa] | A(%) | Hardness HB |
| | from | to | min. | min. | min. | |
| M | All | | As extruded - without specific mechanical properties | | | |
| R540 | 6 | 80 | 280 | 540 | 15 | - |
| H130 | | | - | - | - | 130-170 |
| R590 | 6 | 50 | 370 | 590 | 10 | - |
| H150 | | | - | - | - | 150-220 |

Fabrication range

Available forms:



Do not hesitate to contact us for further information regarding the dimensions, tolerances and metallurgical conditions. Our technical teams are by your side to help you succeed in your projects.

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