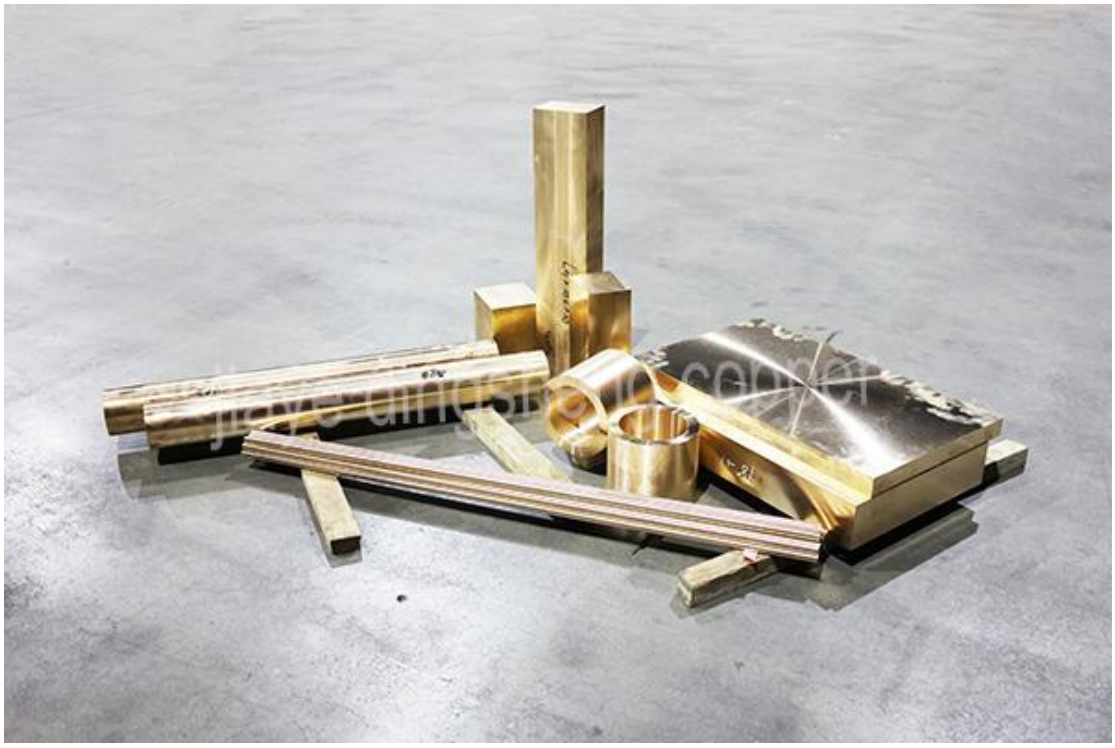
Beryllium Copper C17200 Data Sheet

Beryllium copper C17200 also known as Alloy 25 or CuBe2 is a high-performance copper alloy, featuring high strength, high hardness, high wear resistance, high elastic limit and high fatigue strength. It is widely used in the manufacturing of precision instruments, molds, electronic devices and other fields.



Chemical Composition of beryllium copper c17200

Be	Co+Ni	Cu	Pb	Si	Fe	Al
1.8-2.0	≥0.2	Bal	-	0.15	0.15	0.15

The C17200 beryllium copper is mainly composed of copper (Cu), beryllium (Be), and a small amount of elements such as nickel (Ni) and cobalt (Co).

Aged manufacturing property of beryllium copper c17200

Status	Tensile Strength/ MPa	Yield Strength/ MPa	Elongation /%	Hardness/ B/C	Hardness/ HV	Electrical Conductivity/% IACS
A(TB00)	420-550	210-390	30-60	B45-78	≤140	15-19
1/4H(TD01)	520-620	420-570	20-45	B68-90	120-220	15-19
1/2H(TD02)	590-710	520-670	12-30	B88-96	140-240	15-19
H(TD04)	700-850	630-810	2-18	B96-102	≥170	15-19
AT(TF00)	1160-1380	980-1240	3-15	C36-42	≥320	22-28
1/4HT(TH01)	1230-1450	1050-1310	3-10	C36-43	320-420	22-28
1/2HT(TH02)	1300-1520	1120-1380	1-8	C38-44	340-440	22-28
HT(TH04)	1330-1550	1160-1450	1-6	C38-45	≥360	22-28

After the aging treatment, the tensile strength can reach 1400 MPa (an increase of nearly 10 times compared to pure copper), while maintaining a 22% IACS conductivity and a 3% elongation rate. This unique combination of properties enables it to consistently dominate in critical components with strict requirements.

Mechanical properties of beryllium copper c17200

Item	Alloy 25 AT	Alloy 25 HT
UTS MPa	1130-1380	1200-1520
0.2% PS MPa	890-1210	1030-1380
Elongation % in 4D	3-10	2-9
Hardness HRC	36-41	37-45
Fatigue strength at 108 MPa	340-450	340-450
Elastic modulus GPa	131	131
Thermal conductivity W/m ℉	105	105
Thermal expansion ppm/℃	17	17
Magnetic permeability	<1.001	<1.001
Density g/cm^3	8.36	8.36

Technique	Suitabilty
Soldering	Good

Brazing	Good
Oxyacetylene Welding	Not Recommended
Gas Shielded Arc Welding	Good
Coated Metal Arc Welding	Good
Spot Weld	Good
Seam Weld	Fair
Butt Weld	Fair
Capacity for Being Cold Formed	Good
Capacity for Being Hot Formed	Excellent
Forgeability Rating	40
Machinability Rating	20

Physical properties of beryllium copper c17200

Melting Point – Liquidus ℉	1800
Melting Point – Solidus ℉	1590
Density lb/cu in. at 68℉	0.29
Specific Gravity	8.26
Electrical Conductivity % IACS at 68℉	22
Thermal Conductivity Btu/sq ft/ft hr/ ℉ at 68℉	62
Coefficient of Thermal Expansion 10-6 per ℉(68-572 ℉)	9.9
Specific Heat Capacity Btu/lb/℉ @ 68 ℉	0.1
Modulus of Elasticity in Tension ksi	18500
Modulus of Rigidity ksi	7300

Supply form of beryllium copper c17200

C17200 beryllium copper can be supplied in various forms such as **sheet, strip, bar, wire, forging, round steel, etc.,** to meet different application requirements.

Application fields of beryllium copper c17200

- **Electronic industry:** Used for manufacturing high-precision electronic components, such as integrated circuits, capacitors and resistors.
- **Electrical industry:** As key components of power transmission and distribution equipment, such as cables, switches and transformers.

- **Mechanical industry:** Used for manufacturing wear-resistant parts, such as gears, shafts and valves.
- **Chemical industry:** Used for manufacturing corrosion-resistant equipment such as pumps, pipelines and storage tanks.

Note

This data is the result of the regular test. For specific application data, please contact our alloy engineers.