

C64200 Silicon Aluminum Bronze Hollow Rods

ASTM B249, QQ-C-465, AMS 4631, AMS 4634, EU Designation: CuAl7Si2, CW302G

The C64200 silicon aluminum alloy is an engineering alloy which is resistant to corrosion as copper and is much stronger. It is manufactured in round, hexagonal and octagonal rods for hot forming and free machining. It is considered as best valve stem alloy and its other applications include gears, marine hardware, nuts, pole line hardware, and valve bodies and components.



Typical Uses :

- **Automotive** : Valve Guides, Automobile Engine
- **Electrical**: Pole Line Hardware
- **Fasteners**: Bolts, Nuts
- **Industrial**: Valve Components, Valve Bodies, Gears, Valve Stems, Cams
- **Marine**: Hardware

Equivalent Specifications:

Specifications	Designation
ISO	CuAl7Si2
European	CuAl7Si2
UNS	C64210

Chemical Composition:

	Al	As	Cu	Fe	Pb	Mn	Ni	Si	Sn	Zn
Min/Max	6.3 - 7.6	0.15	Rem	0.3	0.05	0.1	0.25	1.5 - 2.2	0.2	0.5
Nominals	7	-	91.2	-	-	-	-	1.8	-	-

Specifications :

End Product	Specification
Bar	AMS 4631, ASME SB150, ASTM B150
Bar, Forging	ASTM B124

Bolts	ASTM F468
Forgings, Die	AMS 4631, ASME SB283, ASTM B283
Nuts	ASTM F467
Rod	AMS 4631, ASME SB150, ASTM B150, SAE J463, J461
Rod, Forging	ASTM B124
Screws	ASTM F468
Shapes	ASTM B150
Shapes, Forging	ASTM B124
Studs	ASTM F468

Fabrication :

Joining Technique	Suitability
Brazing	Fair
Butt Weld	Fair
Capacity for Being Cold Worked	Poor
Capacity for Being Hot Formed	Excellent
Coated Metal Arc Welding	Fair
Gas Shielded Arc Welding	Fair
Machinability Rating	80
Oxyacetylene Welding	Not Recommended
Seam Weld	Fair
Soldering	Not Recommended
Spot Weld	Fair

Physical Properties :

Product Property	US Customary	Metric
Coefficient of Thermal Expansion	10.0 $\times 10^{-6}$ per oF (68-572 F)	18.0 $\times 10^{-6}$ per oC (20-300 C)
Density	0.278 lb/in ³ at 68 F	7.7 gm/cm ³ @ 20 C
Electrical Conductivity	8 %IACS @ 68 F	0.047 MegaSiemens/cm @ 20 C
Electrical Resistivity	113.0 ohms-cmil/ft @ 68 F	18.79 microhm-cm @ 20 C
Melting Point - Liquidus	1840 F	1004 C
Melting Point - Solidus	1800 F	982 C
Modulus of Elasticity in Tension	16000 ksi	110000 MPa
Modulus of Rigidity	6000 ksi	41370 MPa
Specific Gravity	7.69	7.69
Specific Heat Capacity	0.09 Btu/lb/ \times oF at 68F	377.1 J/kg \times oK at 293 K
Thermal Conductivity	26.0 Btu \times ft/(hr \times ft ² \times oF)at 68F	45.0 W/m \times oK at 20 C

Sizes Available:

ROUND RODS	8mm To 70 mm
HEX	10mm To 60mm
SQUARE	10mm To 60mm
FLAT	10mm Min Thickness and max Width 120mm
BILLETS	Up to 200 mm
INGOTS	As per Specification

Regd. Office & Plant

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