

## DESCRIPTION

CuZn33, is combining excellent cold forming properties with good mechanical strength. CuZn33 has good hot forming properties and excellent soldering and brazing properties. Due to the Outstanding deep drawing properties CuZn33 are called “deep-draw” brass.

## CHEMICAL COMPOSITION

| Elements     | Min (%)   | Max (%) |
|--------------|-----------|---------|
| Cu           | 64.00     | 68.50   |
| Pb           | -         | 0.09    |
| Fe           | -         | 0.05    |
| Total Others | -         | 0.30    |
| Zn           | Remainder |         |

## MECHANICAL PROPERTIES ACCORDING TO ASTM B927 (AS PER TEMPER H02)

| Range (Inch)          | From  | To    | UTS Min (ksi) | PS Min (Ksi) | Elongation Min (%) | Hardness Min | Hardness Max |
|-----------------------|-------|-------|---------------|--------------|--------------------|--------------|--------------|
| Round (Dia)           | 0.059 | 0.500 | 53.00         | 33.00        | 10.00              | -            | -            |
|                       | 0.500 | 1.000 | 48.00         | 30.00        | 13.00              | -            | -            |
|                       | 1.000 | 2.953 | 43.00         | 28.00        | 15.00              | -            | -            |
| Hex (A/F)             | 0.118 | 0.500 | 53.00         | 33.00        | 10.00              | -            | -            |
|                       | 0.500 | 1.000 | 48.00         | 30.00        | 13.00              | -            | -            |
|                       | 1.000 | 2.756 | 43.00         | 28.00        | 15.00              | -            | -            |
| Square (A/F)          | 0.118 | 0.500 | 53.00         | 33.00        | 10.00              | -            | -            |
|                       | 0.500 | 1.000 | 48.00         | 30.00        | 13.00              | -            | -            |
|                       | 1.000 | 2.362 | 43.00         | 28.00        | 15.00              | -            | -            |
| Rectangle (Thickness) | 0.118 | 0.500 | 53.00         | 33.00        | 10.00              | -            | -            |
|                       | 0.500 | 1.000 | 48.00         | 30.00        | 13.00              | -            | -            |
|                       | 1.000 | 1.969 | 43.00         | 28.00        | 15.00              | -            | -            |



## MECHANICAL PROPERTIES ACCORDING TO ASTM B927 (AS PER TEMPER H02)

| Range (Inch)          | From  | To    | UTS Min (ksi) | PS Min (Ksi) | Elongation Min (%) | Hardness Min | Hardness Max |
|-----------------------|-------|-------|---------------|--------------|--------------------|--------------|--------------|
| Round (Dia)           | 1.5   | 12.00 | 365.00        | 230.00       | 10.00              | -            | -            |
|                       | 12.00 | 25.00 | 330.00        | 205.00       | 13.00              | -            | -            |
|                       | 25.00 | 75.00 | 295.00        | 195.00       | 15.00              | -            | -            |
| Hex (A/F)             | 3.00  | 12.00 | 365.00        | 230.00       | 10.00              | -            | -            |
|                       | 12.00 | 25.00 | 330.00        | 205.00       | 13.00              | -            | -            |
|                       | 25.00 | 70.00 | 295.00        | 195.00       | 15.00              | -            | -            |
| Square (A/F)          | 3.00  | 12.00 | 345.00        | 170.00       | 10.00              | -            | -            |
|                       | 12.00 | 25.00 | 310.00        | 115.00       | 20.00              | -            | -            |
|                       | 25.00 | 50.00 | 275.00        | 105.00       | 20.00              | -            | -            |
| Rectangle (Thickness) | 3.00  | 12.00 | 345.00        | 170.00       | 10.00              | -            | -            |
|                       | 12.00 | 25.00 | 310.00        | 115.00       | 20.00              | -            | -            |
|                       | 25.00 | 50.00 | 275.00        | 105.00       | 20.00              | -            | -            |

## PHYSICAL PROPERTIES

|  |       |
|--|-------|
| Melting Point - Liquidus°F                                     | 1710  |
| Melting Point - Solidus°F                                      | 1660  |
| Density/lb/cu in. at 68°F                                      | 0.306 |
| Specific Gravity   | 8.47  |
| Electrical Conductivity% IACS at 68°F                          | 27    |
| Thermal ConductivityBtu/ sq ft/ ft hr/ °F at 68°F              | 67    |
| Coefficient of Thermal Expansion 68-57210° per °F (68 – 572°F) | 11.3  |
| Specific Heat Capacity Btu/ lb /°F at 68°F                     | 0.09  |
| Modulus of Elasticity in Tensionksi                            | 15000 |
| Modulus of Rigidity ksi  | 5600  |

## FABRICATION PROPERTIES

| Technique                      | Suitability     |
|--------------------------------|-----------------|
| Soldering                      | Excellent       |
| Brazing                        | Excellent       |
| Capacity for being hot worked  | Good            |
| Gas Shielded Arc Welding       | Fair            |
| Coated Metal Arc Welding       | Not Recommended |
| Spot Weld                      | Good            |
| Seam Weld                      | Not Recommended |
| Butt Weld                      | Good            |
| Capacity for Being Cold Worked | Excellent       |
| Capacity for Being Hot Formed  | Poor            |
| Machinability Rating           | 30              |

## TYPICAL USES

- > Fasteners
- > Architecture
- > Automotive
- > Builders Hardware
- > Electrical
- > Marine
- > Plumbing

