

Copper Alloy

LEADED Red BRASS (85-5-5-5) C83600

Mechanical and Physical Properties

Tensile Strength, Ksi	30
Tensile Strength, Mpa	207
Yield Strength, Ksi	14
Yield Strength, Mpa	97
Elongation in 2 inch	20
Density g/cm3	8.83
Electrical Conductivity IACS @ 68 F	0.087

Chemical Composition

UNS Number	C83600
Cu %	84-86
Sn %	4-6
Pb %	4-6
Zn %	4-6
Ni %	1
Fe %	0.3
Others %	0.25 Sb, 0.8 S , .005 Al

Uses significant Characteristics

- Good corrosion resistance
- Excellent cast ability
- Moderate strength

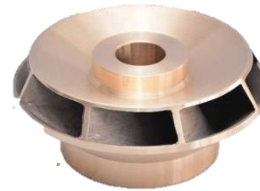
NOMINAL COMPOSITIONS

Cu	85
Sn	5
Pb	5
Zn	5

Uses

In selecting an alloy, consideration should be given to properties, foundry adaptability, and cost. This alloy has proved itself in the following applications:

- **Small gears**
- **Small pump castings**
- **Low pressure valve bodies**
- **Pipe fittings**



Copper Alloy

High Strength Yellow Brass C86300

Mechanical and Physical Properties

Tensile Strength, Ksi	110
Tensile Strength, Mpa	758
Yield Strength, Ksi	60
Yield Strength, Mpa	414
Elongation in 2 inch	12
Density g/cm3	7.83
Thermal Conductivity IACS @ 68 F	8%

Chemical Composition

UNS Number	C83600
Cu %	60-66
Sn %	0.2
Pb %	0.2
Zn %	22-28
Ni %	1
Fe %	2-4
Others %	5-7.5 Al, 2.5-5 Mn

Uses significant Characteristics

- Can attain tensile strengths exceeding 115 ksi

NOMINAL COMPOSITIONS

Cu	63
Zn	25
Al	6.2
Fe	3
Mn	3.5

Uses

In selecting an alloy, consideration should be given to properties, foundry adaptability, and cost. This alloy has proved itself in the following applications:

- **Extra heavy duty high strength alloy**
- **Spur gears**
- **Bearings (slow speed heavy load)**
- **Screw down nuts**
- **Pump Impellers**
- **Hydraulic cylinder parts**
- **Cams**
- **Valves**



Copper Alloy

Tin Bronze C90700

Mechanical and Physical Properties

Tensile Strength, Ksi	35
Tensile Strength, Mpa	241
Yield Strength, Ksi	22
Yield Strength, Mpa	152
Elongation in 2 inch	10
Density g/cm3	8.77
Thermal Conductivity IACS @ 68 F	10

Chemical Composition

UNS Number	C90700
Cu %	85-89
Sn %	10-12
Pb %	0.5
Zn %	0.5
Ni %	0.5
Fe %	0.15
Others %	0.2 Sb, 0.05 S , .005 Al, 0.3 P, 005 Si

uses significant Characteristics

- Corrosion resistance especially seawater
- High strong alloys

NOMINAL COMPOSITIONS

Cu	87
Sn	12
Zn	0.5

Uses

In selecting an alloy, consideration should be given to properties, foundry adaptability, and cost. This alloy has proved itself in the following applications:

- Industrial restaurant equipment
- worm gears
- Bearings for heavy loads and relatively low speeds
- worm gears



Copper Alloy

High Leaded Tin Bronze (83-7-7-3) C93200

Mechanical and Physical Properties

Tensile Strength, Ksi	30
Tensile Strength, Mpa	207
Yield Strength, Ksi	14
Yield Strength, Mpa	97
Elongation in 2 inch	15
Density g/cm3	8.91
Thermal Conductivity IACS @ 68 F	0.07

Chemical Composition

UNS Number	C93200
Cu %	81-85
Sn %	6.3-7.5
Pb %	6-8
Zn %	1-4
Ni %	1
Fe %	0.2
Others %	0.25 Sb, 0.05 S , .005 Al , 0.3 P

NOMINAL COMPOSITIONS

Cu	83
Sn	7
Pb	7
Zn	3

Uses

In selecting an alloy, consideration should be given to properties, foundry adaptability, and cost. This alloy has proved itself in the following applications:

- **Bushings**
- **Automobile fittings**
- **Bearing alloy**



Copper Alloy

High leaded Tin Bronze (80-10-10) C93700

Mechanical and Physical Properties

Tensile Strength, Ksi	30
Tensile Strength, Mpa	207
Yield Strength, Ksi	12
Yield Strength, Mpa	83
Elongation in 2 inch	15
Density g/cm3	8.87
Thermal Conductivity IACS @ 68 F	0.059

Chemical Composition

UNS Number	C93700
Cu %	78-82
Sn %	9-11
Pb %	8-11
Zn %	0.8
Ni %	0.5
Fe %	0.7
Others %	0.5 Sb, 0.8 S , .005 Al, .1 P

uses significant Characteristics

- Excellent wearing material under conditions of high speed, heavy pressure, shock and vibration

NOMINAL COMPOSITIONS

Cu	80
Sn	10
Pb	10

Uses

In selecting an alloy, consideration should be given to properties, foundry adaptability, and cost. This alloy has proved itself in the following applications:

- **Bushing alloy**
- **bearing alloy**



Copper Alloy

Aluminum Bronze C95500

Mechanical and Physical Properties

Tensile Strength, Ksi	90
Tensile Strength, Mpa	621
Yield Strength, Ksi	40
Yield Strength, Mpa	276
Elongation in 2 inch	6
Density g/cm3	7.53
Thermal Conductivity IACS @ 68 F	0.049

Chemical Composition

UNS Number	C95500
Cu %	78
Sn %	-
Pb %	-
Zn %	-
Ni %	3-5.5
Fe %	3-5
Others %	10-11 Al 3.5 Mn

NOMINAL COMPOSITIONS

Cu	81
Fe	4
Ni	4
Al	11

Uses

In selecting an alloy, consideration should be given to properties, foundry adaptability, and cost. This alloy has proved itself in the following applications:

- **Bushings and bearings**
- **Worm wheels**
- **Dies**
- **Pump parts**
- **Corrosion resistant castings**



Copper Alloy

Leaded Nickel Bronze (Nickel Silver) C97800

Mechanical and Physical Properties

Tensile Strength, Ksi	50
Tensile Strength, Mpa	345
Yield Strength, Ksi	22
Yield Strength, Mpa	152
Elongation in 2 inch	10
Density g/cm3	8.85
Thermal Conductivity IACS @ 68 F	0.026

Chemical Composition

UNS Number	C97800
Cu %	64-67
Sn %	4-5
Pb %	1-2.5
Zn %	1-4
Ni %	24-27
Fe %	1.5
Others %	0.2 Sb, 0.8 S , .005 Al, 0.5 P, 1 Mn, 0.15 Si

NOMINAL COMPOSITIONS

Cu	66
Sn	6
Pb	2
Zn	2
Ni	25

Uses

In selecting an alloy, consideration should be given to properties, foundry adaptability, and cost. This alloy has proved itself in the following applications:

- Corrosion resistant alloy for some organic liquids
- Dairy and soda fountain parts
- A permanently white nickel bronze Valves and valve seats for elevated temperatures
- Gears for foods industry

