

# Hard Copper Alloys of Kor Bakir

## Korbak HC 3 and Korbak HC 4

Korbak HC 3 – EN-CW 103C – CuCoNiBe

Korbak HC 4 – EN-CW 104C – CuCo2Be

Applications of Korbak HC 3 & HC 4:

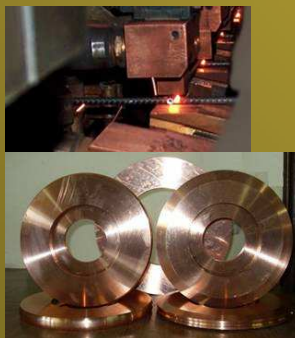
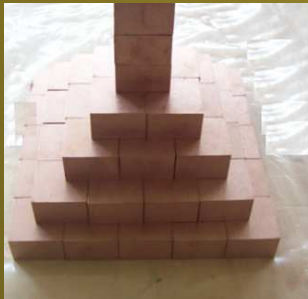
- Resistance welding consumables (discs, electrodes, ...etc)
- Mesh welding electrodes
- Plunger tips for aluminium injection casting
- Gravity casting dies for brass or non-ferrous casting
- Inserts or cooling plate of plastic injection moulds
- Appl. where require thermal stability

### Mechanical & Physical Properties of Korbak HC 3

Hardness	220-270 HB
Yield strength	650-840 Mpa
Tensile strength	680-900 Mpa
Electrical conductivity	% 48 I.A.C.S
Gravity	8,8 gr/cm <sup>3</sup>
Chemical Composition	Co:1,0 - Ni:1,0- Be:0,5 Other:0,2      Cu: Rest

### Mechanical & Physical Properties of Korbak HC 4

Hardness	220-260 HB
Yield strength	380-560 Mpa
Tensile strength	710-910 Mpa
Electrical conductivity	% 48 I.A.C.S
Gravity	8,8 gr/cm <sup>3</sup>
Chemical Composition	Co:2,0      Be:0,5 Other:0,2      Cu: Rest



Mesh welding electrodes & welding discs



Casting die



Aluminium injection plungers



Cooling plate of plast. Inj. mould

Hardness and high heat resistance combined with high electrical and thermal conductivity. The rate of Be is lower than Korbak HC1

## Properties Table of Products

Alloy	Chemical Comp.		Mech.& Physical Properties
<b>Korbak HC1 CuBe2</b>	%Be:2	%Co+Ni:0,5	Yield st.: 1.000 Mpa Tensile : 1.210-1.310 Mpa Hardness: 370- 430 HB Conductivity:26 I.A.C.S Gravity: 8,3 g/cm <sup>3</sup>
	%Cu:Rest	%Other:0,5	
<b>Korbak HC 3 CuCo1Ni1Be</b>	%Be:0,5	%Co:1,0	Yield st.: 650-840 Mpa Tensile : 680-900 Mpa Hardness:220-270 HB Conductivity:48 I.A.C.S Gravity :8,80 g/cm <sup>3</sup>
	%Cu:Rest	%Ni:1,0	
<b>Korbak HC 4 CuCo2Be</b>	%Be:0,5	%Co:2,4	Yield st.:380-560 Mpa Tensile :710-910 Mpa Hardness:220-260 HB Conductivity: 48 I.A.C.S Gravity : 8,80 g/cm <sup>3</sup>
	%Cu:Rest	%Ni:0,3	
<b>Korbak HC 6 CuCr1Zr</b>	%Cr:1,0	%Zr:0,1	Yield st.:300-320 Mpa Tensile :370-400 Mpa Hardness:120-160 HB Conductivity: 86 I.A.C.S Gravity : 8,9 g/cm <sup>3</sup>
	%Cu:Rest	%Other:0,2	
<b>Korbak HC 11 CuNi2SiCr</b>	%Si:0,8	%Cr:0,4	Yield st.: 490-550 Mpa Tensile : 700-900 Mpa Hardness: 200-240 HB Conductivity:%52 Gravity :8,75 g/cm <sup>3</sup>
	%Cu:Rest	%Ni:2,4	
<b>Korbak HB 10 CuAl10Ni5Fe4</b>	%Al:10,0	%Mn: 1,5	Yield st.: 710-810 Mpa Tensile : 860-960 Mpa Hardness:280-300 HB Gravity: 7,5 g/cm <sup>3</sup>
	%Cu:Rest	%Ni: 5,0	
<b>Korbak HB 15</b>			Compr. yield st : 1600 Mpa Hardness: 40-43 HRC Gravity: 7,0 g/cm <sup>3</sup> Coeff. of fric.: 0,18 µs

Korbakir Alaşımları is one of the important manufacturers who supplies Electric Resistance Welding consumables, plunger tips, non-ferro casting dies, plastic moulds cooling plate and aluminium bronzes for deep drawing dies or bushings, gears, bearings and machine parts ***with guarantee of 3.1 B certificate.***

Korbakir has a team with many years of experience and deep knowledge of producing special hard copper alloys and special bronzes .

Our **value-added products**, which have good thermal ,mechanics and chemical properties, are manufactured in high technological standards.

**PRODUCING ACCORDING TO ANY DRAWINGS OR DIMENSIONS.**

**Our production facilities;**



Centrifugal casting



Sand casting



Die casting

Forging

Heat Treatment



Rough Machining



CNC Machining

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