

**Chemical analysis: %**

Cr	-
Co	0,2
Be	2,0
Cd	-
Zr	-
Ni	-
Si	0,2
Others, max	0,2
Cu	Rest

**Physical and mechanical properties**

Tensile strength	N/mm <sup>2</sup>	≥1150	655
Yield point	N/mm <sup>2</sup>	990	520
Brinell hardness	HB	400	210
Extension	A5%	2-5	15
Density	kg/dm <sup>3</sup>	8.3	8.7
Yield point, compression	N/mm <sup>2</sup>		
Electrical conductivity	m/Ω·mm <sup>2</sup>	≥16	28
Thermal conductivity	W/m·K	120-170	225

**Properties and applications**

Further information is available in our technical data sheets for each type.

CuBe2 is a beryllium copper that meets the requirements of RWMA class 4. It has extremely good mechanical properties, at the same time as conducting electricity and heat well. These properties make CuBe2 into an excellent material in welding jaws for resistance welding, as well as in heat sinks, electrical components, and cores and moulds when injection moulding plastics.

CuNi2Si is an alloy that meets the requirements of RWMA class 3 without containing beryllium. It is used when you want a material with both high conductivity and good mechanical properties. CuNi2Si is used as a material in, among other things, stainless steel and Monel spot welding electrodes, as well as in pistons for die casting aluminium and moulding tools for injection moulding plastics. In most cases, CuNi2Si replaces CuCo2Be.

**Chemical analysis: %**

Cr	-
Co	2,5
Be	0,5
Cd	-
Zr	-
Ni	-
Si	-
Others, max	-
Cu	Rest

**Physical and mechanical properties**

Tensile strength	N/mm <sup>2</sup>	680-810	350-480
Yield point	N/mm <sup>2</sup>	550	-
Brinell hardness	HB	280	300-350
Extension	A5%	14-17	14-18
Density	kg/dm <sup>3</sup>	8	8.8
Yield point, compression	N/mm <sup>2</sup>		
Electrical conductivity	m/Ω·mm <sup>2</sup>	25	See datasheet
Thermal conductivity	W/m·K	230-250	300

**Properties and applications**

Further information is available in our technical data sheets for each type.

**High conductivity copper alloys**

CuCo2Be (C17500/175100)	CuCrZr (C18150)
Cr	1,0
Co	-
Be	-
Cd	-
Zr	0,12
Ni	-
Si	-
Others, max	0,3
Cu	Rest

Tensile strength	N/mm <sup>2</sup>	680-810	350-480
Yield point	N/mm <sup>2</sup>	550	-
Brinell hardness	HB	280	300-350
Extension	A5%	14-17	14-18
Density	kg/dm <sup>3</sup>	8	8.8
Yield point, compression	N/mm <sup>2</sup>		
Electrical conductivity	m/Ω·mm <sup>2</sup>	25	See datasheet
Thermal conductivity	W/m·K	230-250	300

Annealed beryllium copper that meets the requirements of RWMA class 3.

It has great mechanical properties and conducts electricity and heat well.

It is used as a material in electrodes for spot welding and in welding jaws/seam welding wheels for resistance welding/seam welding of stainless steel, Monel and nickel alloys. Also used as piston material for die casting of aluminium and as mould material in injection moulding of plastics.

An annealed chromium copper alloy that meets the requirements of RWMA class 2. It has greater wear resistance and retains its physical properties at elevated temperatures better than pure copper. Alloys have very good strength at elevated temperatures. They are suitable for welding coated and galvanised metals.

Often used as a material in electrode holders for spot welding, axles for seam welding wheels, spot welding electrodes, seam welding wheels, moulds for continuous casting of steel and aluminium, and various electrical components.

**WEARLESS®****Extra hard Aluminium bronzes**

Continuous casted  
Extruded  
Forged  
Rolled

**High conductivity copper alloys**

Continuous casted  
Extruded  
Forged  
Rolled

**In partnership with NBM Metals**

NBM is the leading US manufacturer of continuous cast Special bronze, brass and copper alloys.  
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**JOHNSON METALL AB**

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## Aluminium bronzes

### WEARLESS® 954

(C95400)

#### Chemical analysis: %

Al	10,8
Fe	4
Ni	-
Mn	-
Others, max	0,5
Cu	Rest

#### Physical and mechanical properties

Tensile strength	N/mm <sup>2</sup>	655
Yield point	N/mm <sup>2</sup>	310
Brinell hardness	HB 30	190
Extension	A5%	12

#### Product forms

Round Bar	•
Rectangel & flatbar bar	•
Tube	•
Forge	•

WEARLESS® 954 is the most widely used of all of the WEARLESS alloys. It has excellent wear, abrasion and fatigue properties. A further advantage is that it slides easily against other metals, and also against stainless steel.

Due to its excellent sliding characteristics WEARLESS® 954 is often used for wear parts, gears, gear racks, bushings, support rails during centreless grinding, mould materials during injection moulding of plastic etc.

*WEARLESS® 954 can be machined using conventional high-speed steel tools.*

## Aluminium bronzes

### WEARLESS® 625

(C62500)

	13
	4,3
	-
	-
	2
	Rest

	690
	379
	285
	1

	•
	•
	•

WEARLESS® 625 is a very hard alloy with a low extension value.

WEARLESS® 625 is used as a material for support rails during centreless grinding, guide rails, various wear parts, and in pads when deep drawing steel.

*The harder alloys, WEARLESS® 625 and WEARLESS® 37 should be machined using hard metal tools. Turning requires negative cut angles and thread requires taps with special geometries.*

### WEARLESS® 37

(NBM37)

	15
	5
	-
	-
	0,5
	Rest

	-
	-
	360-400
	-

	•
	•
	•

WEARLESS® 37 is an alloy with unique sliding characteristics. This is due to the ideal combination of high hardness and low coefficient of friction.

Its excellent sliding characteristics make WEARLESS® into a material that is simultaneously durable, while also being soft on the material it is sliding against.

WEARLESS® 37 is used in pads and stamps for deep drawing of stainless steel and in rollers for pipe manufacture and drift pins in pipe bending.

## Aluminium bronzes

### WEARLESS® 630

(C63000)

	10
	3,5
	4,5
	1,5
	0,5
	Rest

	700
	420
	225
	14

	•
	•

WEARLESS® 630 is an alloy that is used when you want a material that can withstand considerable mechanical loads in corrosive environments.

Applications for WEARLESS® 630 include valve seats, pumps, bushings in aircraft landing gear and shafts in marine environments

### WEARLESS® 459

(AMS4590)

	10,5
	47
	5,1
	1
	0,5
	Rest

	900
	620
	261
	6

	•
	•

WEARLESS® 459 is a very special nickel aluminium bronze that has been developed to meet the aviation industry's requirements to bearing and bushing material.

WEARLESS® 459 can be seen at its best when you require a corrosion resistant material with good mechanical properties at elevated temperatures. WEARLESS® 459 is used in heavily loaded bushings, drift pins and smoothers during pipe bending, mould tools, etc.