

METRIC

Brass Alloy SM 1063

Comparable standards

ISO:	CuZn37
ASTM:	UNS 27200
EU:	CW 508L
JIS:	C2720

Chemical Composition

Element	Unit	Range
Copper	%	62 - 65
Lead	%	max. 0.05
Iron	%	max. 0.05
Zinc	-	remainder

Dimensions

Nominal width mm	Tolerance
- 50	± 0.05
50 - 100	± 0.075
100 - 200	± 0.10
200 - 400	± 0.15
400 - 600	± 0.20

Nominal thickness mm	In steps of
0.080 - 0.250	0,005
0.250 - 0.400	0,010
0.400 - 1.000	0,050
1.000 - 2.000	0,100

Notes:

- Unslitted width [full master coil width] possible [app. 640 mm wide]
- Thickness tolerance up to 0.150 mm nominal: ± 0.003 mm
- Thickness tolerance over 0.150 mm nominal: ± 2% [rounded upwards to nearest micron]

Physical Properties

Density	kg/m ³	8440
Melting temperature	°C	902-940
Specific heat	kJ/(kg °C)	0.38
Electrical conductivity	MS/m	15
Electrical conductivity	IACS %	26
Electrical resistivity	nΩ meter	67
Thermal conductivity	W/(m °C)	121
Thermal expansion 20-300°C	10 ⁻⁶ °C ⁻¹	20.2
Young's modulus E	MPa	110 000



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Mechanical Properties - Available Tempers

Temper	EN	Dimension Gauge mm	Yield Rp0,2 MPa	Tensile Rm MPa	Elongation A50 %	Hardness HV
Annealed	H055 R300	0.090-	(-180)	300-370	38-	55-95
	H095 R350	0.090-	(170-)	350-440	19-	95-125
	H120 R410	0.090-	(300-)	410-490	8-	120-155
	H150 R480	0.090-	(430-)	480-560	3-	150-180
	H170 R550	0,090	(500-)	550-		170-

NOTES!

- Annealed tempers: Required grain size may differ dependent on product spec.
- There are typical values not always possible to combine as requirements
- There are also other tempers with somewhat different properties available both for the annealed to temper and rolled to temper materials

Heat Treatment

Soft annealing

450 - 550 °C

Time dep. on size and volume: propose

2

hours

Stress relief annealing

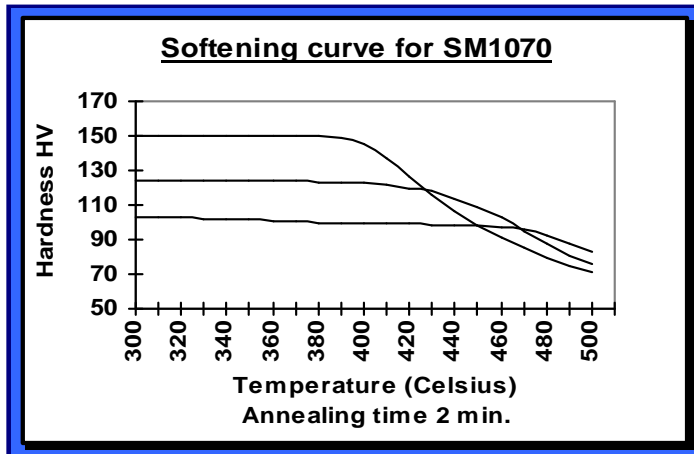
275 - 325 °C

Welding

Due to the very high zinc content, some counter-measures to stop vaporization of zinc are necessary. Otherwise the alloy is suitable for soldering, brazing and welding. For applications with CuproBraze technology we recommend special alloy SM2385 virtually retaining the properties after brazing operation.

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Heat Resistance and Softening Characteristics



Softening characteristics.
 (Temperatures at 1 min annealing time will be 10 degrees higher
 Temperatures at 4 min annealing time will be 10 degrees lower)

Formability

Valid for all tempers:
 Both at elevated as well as room temperature
 easy to form, however decreasing with increased hardness.

Below: minimum bending radius. t =gauge

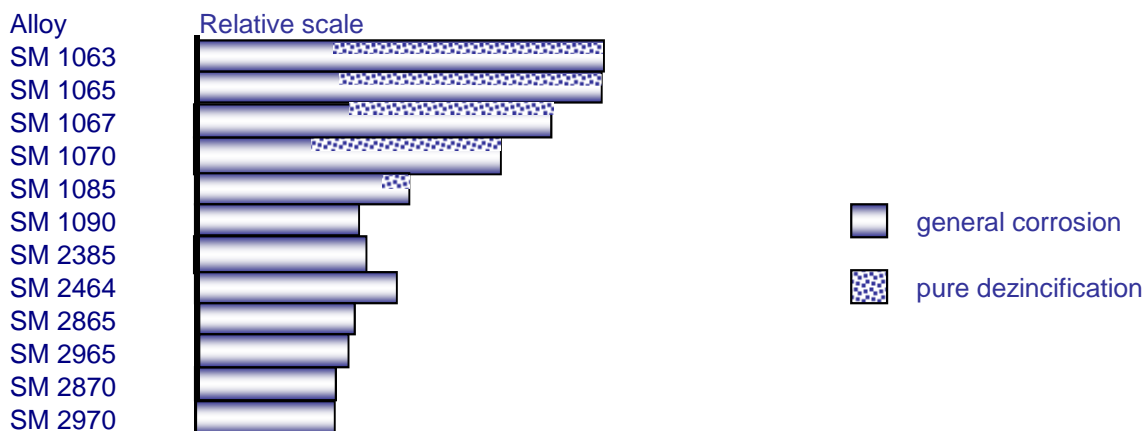
Temper	Hardness	t = < 0.25 mm		t = > 0.25 mm	
		good way	bad way	good way	bad way
Soft	HV 65-125	0 x t	0 x t	0 x t	0 x t
Hard	HV 120-155	0 x t	0 x t	0 x t	1 x t
	HV 150-180	0 x t	1 x t	0 x t	2 x t
	HV 170-200	0 x t	2 x t	1 x t	3 x t

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Corrosion Properties

Durable to water and organic compounds, as well as land-, sea- and industrial atmospheres.

Dezincification comparison:



To minimize the risk for **stress corrosion cracking** we strongly recommend stress-relief annealing after all cold forming operations.

In general the higher the copper content, the better the resistance to stress corrosion cracking.

Surface Treatment.

Colours are gold- to yellowish but could easily be influenced by many types of surface treatments.

Luvata Sweden AB
Box 550
SE- 721 10 Västerås Sweden
www.luvata.com

Luvata Netherlands BV
Postbus
NL-7200 AA Zutphen
The Netherlands

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