

Olin Brass Alloy C51180 is a dispersion and solid solution strengthened alloy developed for use in the electronic and automotive connector market. It offers users, or those considering alloy C52100, the same or better forming characteristics with higher electrical conductivity. Designers looking for a material with an edge over traditional phosphor bronze alloys will find a solution in C51180. For more information contact Olin Brass Market Development Engineering at 618-258-5255, OlinBrass.com or email us at info@olinbrass.com.

Chemical Composition

Copper¹	Remainder
Tin	3.5-4.9%
Iron	0.05-0.20%
Nickel	0.05-0.20%
Phosphorous	0.01-0.35%
Zinc	0.30% Max
Lead	0.05% Max

1. Cu plus Named Elements = 99.5% min

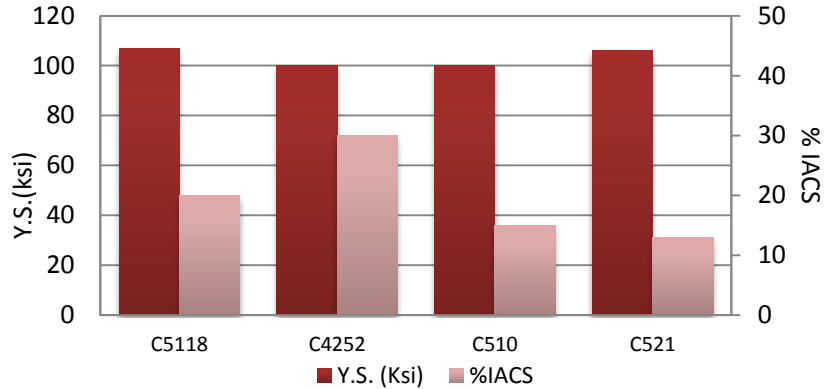


Figure 1: Strength vs Conductivity comparison for typical alloys used in telecom and miniaturized electronics connector applications.

Physical Properties

	English Units	Metric Units
Density	0.321 lb/in ³ @ 68°F	8.89 g/cm ³
Thermal Conductivity	50 BTU-ft/ft ² -hr-°F	86 W/m ² K
Electrical Resistivity	51.85 ohm circ mils/ft	8.62 microhm-cm
Electrical Conductivity (annealed)	20% IACS*	0.120 megamho/cm
Modulus of Elasticity	16,000,000 psi	110 kN/mm ²
Coeff. Of Thermal Expansion		
68-572°F (20-300°C)	9.9 PPM/°F	17.8 PPM/°C

*International Annealed Copper Standard

Mechanical Properties

Temper ¹	Tensile Strength		Yield Strength ²		% Elongation ²	Typical 90° Bend Formability GW/BW ^{3,4}	
	ksi	N/mm ²	ksi	N/mm ²			
1/2 Hard	69-84	475-580	70	480	22	-	-
3/4 Hard	80-92	550-635	82	565	18	-	0.5
Hard	85-100	585-690	87	600	10	0.3	1.5
Extra Hard	97-112	670-770	101	695	8	0.6	2.8
Spring	105-119	725-820	107	740	5	1.2	4.0
Extra Spring	110-122	760-840	112	770	3		

¹ Mechanical properties subject to change. All tempers listed are made to a Tensile Strength specifier

² Nominal Values ³ R/T = Bend Radius/Material Thickness <0.016" (0.4mm) thick, 11/16 (17.5mm) wide.

⁴ Relief annealed product recommended for maximum formability.

Olin Brass Headquarters

4801 Olympia Park
Plaza, Suite 3500
Louisville, KY 40241
Ph: 502-873-3000

GBC METALS ASIA PACIFIC PTE LTD

1 Kim Seng Promenade
Great World City, E Tower
Singapore 237994
Ph: 65.6238.1155

GBC METALS LLC SHANGHAI

Room 2004 Aetna Tower
No. 107 Zunyi Rd
Shanghai 200051 China
Ph: 86.21.6237.5898

OLIN BRASS-HEADQUARTERS

4801 Olympia Park
Plaza, Suite 3500
Louisville, KY 40241
Ph: 502-873-3000

OLIN BRASS - MILL

285 Lewis & Clark Blvd.
East Alton, IL 62024
Ph: 618-258-5255

BRYAN METALS INC.

1103 South Main Street
Bryan OH 43506-0487
Ph: 419-636-4571
Fx: 419-636-3994

SOMERS THIN STRIP

215 Piedmont Street
Waterbury, CT 06706
Ph: 203-597-5000
Fx: 203-597-5081

A.J. OSTER COMPANY

180 ALEXANDRA WAY
Carol Stream, IL 60188-2068
Ph: 630-260-1040
Ph: 800-323-9644
Fx: 630-260-1102

A.J. OSTER CARIBE, INC.

Centro industrial Rio Canas
Lote 29, P.M.B HC-01
Box 29030
Caguas, PR 00725
Ph: 787-747-7575

A.J. OSTER FOILS, INC.

2081 McCrea Street
Alliance, OH 44601-2793
Ph: 330-823-1700
Ph: 800-321-9750
Fx: 330-823-1705

A.J. OSTER WEST INC.

22833 La Palma Avenue
Yorba Linda, CA 92887-4767
Ph: 714-692-1000
Ph: 800-933-5933
Fx: 714-692-1225

A.J. OSTER COMPANY

457 Industrial Drive
Warwick, RI 02886
Ph: 401-739-0800
Fx: 401-739-1276

INTERNATIONAL SALES OFFICES & FACILITIES**GBC METALS ASIA PACIFIC PTE LTD.**

1 Kim Seng Road Promenade
Great World City, East Tower #13-04
Singapore 237994
Ph: 65.6238.1155
Fx: 65.6238.0660

GBC METALS LLC SHANGHAI

Room 2004, Aetna Tower
No. 107 Zunyi Road
Shanghai 200051, China
Ph: 86.21.6237.5898
Fx: 86.21.6237.5805

OLIN LUOTONG METALS (GZ) Co Ltd

No. 8 Jung Gong Road, East District
Guangzhou Economic Technological & Dev District
Guangzhou, P.R. China 510530
Ph: 86.20.8226.6818
Fx: 86.20.8226.6718

DOWA-OLIN METAL CORPORATION

2630, Shingai
Iwata-shi, Shiznoka-ken
438, Japan
Ph: 81.538.37.5111
Fx: 81.538.37.0147

OLIN BRASS - INTERNATIONAL DISTRIBUTORS**UNITED KINGDOM / IRELAND****Aurubis UK Ltd.**

Rabone Park, Smethwick
West Midlands B66 2NN
England
Ph: 44 (0) 121 555 1199
Fx: 44 (0) 121 555 1188
Email: info-uk@aurubis.com
Website: www.aurubis.com

EUROPE**Walter Türkis GmbH**

Struthstrasse 35
55743 Idar-Oberstein
Germany
Ph: 49 (0) 6781 62-0
Fx: 49 (0) 6781 62-28
Email: service@tuerkis-schneid-center.de
Website: www.tuerkis-schneid-center.de

OLIN BRASS MEXICO S.A. de CV

Av. La Griega # 117
Parque Industrial Queretaro
Santa Rosa, Jaurgui
Queretaro, Mexico 76220
Ph: 52 442 2 29 40 00
Fx: 52 442 2 29 40 29