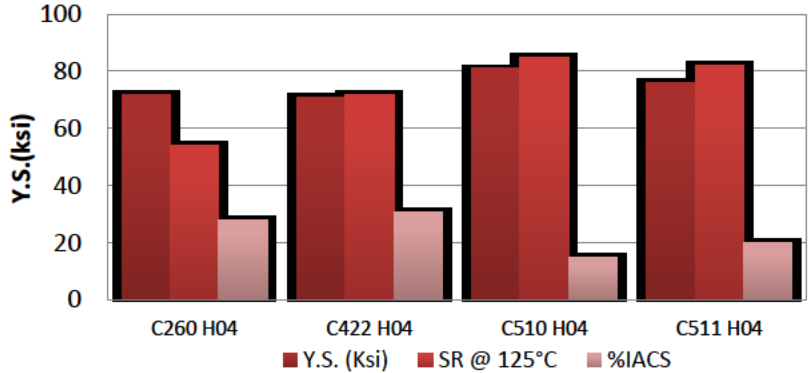


Lubronze provides an answer to designers requirements for a high strength copper alloy with good resistance to dezincification corrosion and stress-corrosion cracking. Commonly used in automotive terminals, C422 provides mechanical properties and performance very similar to that of high-zinc brass alloys with the added benefit of improved resistance to stress relaxation. Also a cost effective alternative to Phosphor Bronze, C422 is ideal for a range of applications where similar performance is required. For more information contact Olin Brass Market Development Engineering at 618-258-5255, OlinBrass.com or email us at info@olinbrass.com.

**Chemical Composition**

<b>Copper<sup>1</sup></b>	<b>86.0-89.0%</b>
<b>Tin</b>	<b>0.8-1.4%</b>
<b>Zinc</b>	<b>Remainder</b>
<b>Iron</b>	<b>0.05% Max</b>
<b>Lead</b>	<b>0.05% Max</b>
<b>Phosphorous</b>	<b>0.35% Max</b>

<sup>1</sup> Copper plu named elements, 99.7% min.



**Figure 1:** Comparison of Yield Strength, % Stress Remaining @ 1000hrs and Electrical Conductivity performance of various connector materials.

**Physical Properties**

	English Units	Metric Units
Density	0.318 lb/in <sup>3</sup> @ 68°F	8.80 g/cm <sup>3</sup>
Thermal Conductivity	75 BTU-ft/ft <sup>2</sup> -hr-°F	130 W/m <sup>2</sup> K
Electrical Resistivity	33.0 ohm circ mils/ft	5.50 microhm-cm
Electrical Conductivity (annealed)	31% IACS*	0.180 megamho/cm
Modulus of Elasticity	16,000,000 psi	112 kN/mm <sup>2</sup>
Thermal Capacity(Specific Heat)	0.090 Btu/lb/F° @ 68°F	0.090 cal/gm/C° @ 20°C
Coeff. Of Thermal Expansion 68-572°F (20-300°C)	10.2 PPM/°F	18.36 PPM/°C

\*International Annealed Copper Standard

**Mechanical Properties**

Temper <sup>1</sup>	Tensile Strength		Yield Strength <sup>2</sup>		% Elongation <sup>2</sup>	Typical 90° Bend Formability GW/BW <sup>3</sup>	
	ksi	N/mm <sup>2</sup>	ksi	N/mm <sup>2</sup>			
Annealed	41-49	285-340	19	130	45	-	-
1/4 Hard	47-57	325-395	38	260	29	-	-
1/2 Hard	54-65	370-450	55	380	16	-	-
3/4 Hard	60-72	415-495	64	440	7	-	0.5
Hard	67-79	460-545	71	490	4	0.5	1.5
Extra Hard	75-85	515-585	75	515	2	1.0	2.5
Spring Hard	82-92	565-635	82	565	2	1.5	4.0
Extra Spring	88 min	605 min	82min	565 min	2 max		

<sup>1</sup> Mechanical properties subject to change. All tempers listed are made to a Tensile Strength specification unless otherwise noted.

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

**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