

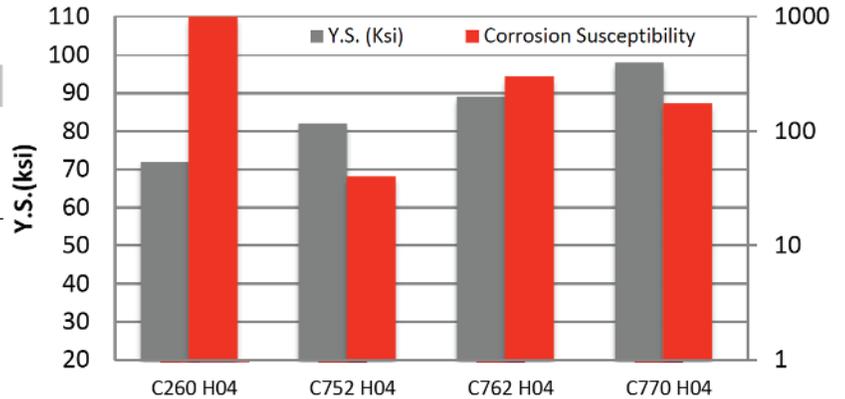
Alloy C752 is an excellent choice for designers considering both functional and decoration applications. Offering a combination of strength, ductility and moderately high work-hardening rate C752 is widely used as both a deep drawing and spring alloy. The added advantage of having a silvery-white color almost identical to that of silver or stainless steel makes C752 valuable for a variety of applications including; flatware, jewelry, medallions and antimicrobial touch surfaces.

### Chemical Composition

|                           |                   |
|---------------------------|-------------------|
| <b>Copper<sup>1</sup></b> | <b>63.0-66.5%</b> |
| <b>Nickel<sup>2</sup></b> | <b>16.5-19.5%</b> |
| <b>Zinc</b>               | <b>Remainder</b>  |
| Iron                      | 0.25% Max         |
| Lead                      | 0.05% Max         |
| Manganese                 | 0.50% Max         |

<sup>1</sup> Cu includes Ag; Copper plus named elements = 99.5%

<sup>2</sup> Ni Values Include Co



**Figure 1:** Comparison of Yield Strength and relative susceptibility to stress corrosion (Mattsson's solution and moist ammonia, 1000 = most susceptible).

### Physical Properties

|  | English Units                    | Metric Units           |
|--|----------------------------------|------------------------|
| Density  | 0.316 lb/in <sup>3</sup> @ 68°F  | 8.73 g/cm <sup>3</sup> |
| Thermal Conductivity                               | 19 BTU-ft/ft <sup>2</sup> -hr-°F | 33 W/m <sup>2</sup> K  |
| Electrical Resistivity                             | 173 ohm circ mils/ft             | 28.7 microhm-cm        |
| Electrical Conductivity (annealed)                 | 6% IACS*                         | 0.0348 megamho/cm      |
| Modulus of Elasticity                              | 18,000,000 psi                   | 124 kN/mm <sup>2</sup> |
| Thermal Capacity(Specific Heat)                    | 0.090 Btu/lb/F° @ 68°F           | 377.1 J/kg · °C @ 20°C |
| Coeff. Of Thermal Expansion<br>68-572°F (20-300°C) | 9.0 PPM/°F                       | 16.2 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<br>GW/BW <sup>3</sup> |     |
|---------------------|------------------|-------------------|-----------------------------|-------------------|---------------------------|--|-----|
|                     | ksi              | N/mm <sup>2</sup> | ksi                         | N/mm <sup>2</sup> |                           |  |     |
| Annealed            | 53-63            | 365-435           | 25                          | 170               | 35                        | -  | -   |
| 1/4 Hard            | 58-72            | 400-495           | 45                          | 310               | 24                        | -  | 0.5 |
| 1/2 Hard            | 66-80            | 455-550           | 63                          | 435               | 14                        | 0.5  | 0.8 |
| 3/4 Hard            | 74-86            | 510-595           | 75                          | 515               | 8                         | 1.0  | 1.0 |
| Hard                | 78-91            | 540-625           | 82                          | 565               | 5                         | 1.5  | 1.5 |
| Extra Hard          | 86-98            | 595-675           | 91                          | 625               | 3                         | 2.0  | 2.0 |
| Spring              | 90-101           | 620-695           | 93                          | 640               | 1 min                     | 4.0  | 4.0 |
| Extra Spring        | 96 min           | 660 min           | 95 min                      | 655 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.