

# Phosphor Bronze (Copper-Tin)

## BD60 | BD61 | BD64 | BD65 |



| Material Designation |        |       |       |       |
|----------------------|--------|-------|-------|-------|
| Sundwiger            | BD60   | BD61  | BD64  | BD65  |
| DIN-EN Symbol        | CuSn6  | CuSn6 | CuSn6 | CuSn6 |
| DIN-EN               | CW452K |       |       |       |
| UNS                  | C51900 |       |       |       |

### About the Alloy

For the technically and industrially important tin bronze CuSn6 the standard DIN EN 12166 specifies a broadly tolerated composition.

However, since this material can be applied in various fields in terms of composition, tensile strength and electrical conductivity, Sundwiger Messingwerk developed four wire alloys within the wide tolerance range of DIN-EN compositions that meet diverse customer requirements.

| Physical Properties*                                  |      |      |      |      |
|-------------------------------------------------------|------|------|------|------|
| Sundwiger                                             | BD60 | BD61 | BD64 | BD65 |
| Condition of tin content within DIN EN tolerance      | low  | low  | high | high |
| Condition of phosphor content within DIN EN tolerance | low  | high | low  | high |
| Density in g/cm <sup>3</sup>                          | 8,8  | 8,8  | 8,8  | 8,8  |
| Electrical conductivity in % IACS soft                | ≥14  | ≥13  | ≥13  | ≥12  |
| * Reference values                                    |      |      |      |      |

| Mechanical Properties*                |            |           |           |           |           |
|---------------------------------------|------------|-----------|-----------|-----------|-----------|
| Sundwiger                             |            | BD60      | BD61      | BD64      | BD65      |
| Tensile strength in N/mm <sup>2</sup> | soft       | 360 - 440 | 360 - 440 | 360 - 440 | 360 - 440 |
|                                       | 1/4 hard   | 430 - 550 | 430 - 550 | 430 - 550 | 430 - 550 |
|                                       | 1/2 hard   | 530 - 630 | 530 - 630 | 530 - 630 | 530 - 630 |
|                                       | 3/4 hard   | 630 - 740 | 630 - 740 | 630 - 740 | 630 - 740 |
|                                       | hard       | 740 - 900 | 740 - 900 | 740 - 900 | 740 - 900 |
|                                       | springhard | ≥ 900     | ≥ 900     | ≥ 900     | ≥ 900     |
| Elongation A100 in %                  | soft       | ≥40       | ≥40       | ≥40       | ≥40       |
| * Reference values                    |            |           |           |           |           |

### Your Contact Person

#### Worldwide

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### Typical Applications

- Connectors
- Spring wire
- Screws
- Rivets
- Wire mesh
- Spectacle frames
- Reinforcement (construction)

### Reference to Standards

|     |          |
|-----|----------|
| DIN | EN 12166 |
|-----|----------|

### Available Dimensions

|                              |                                                                       |              |
|------------------------------|-----------------------------------------------------------------------|--------------|
| Rolled, modified square wire | 5,1 mm<br>7,4 mm                                                      | max. 2000 kg |
| Round wire                   | 1,2 - 6,2 mm in coils                                                 | max. 200 kg  |
|                              | 1,8 - 6,2 mm on stands                                                | max. 1500 kg |
|                              | 0,5 - 3 mm on reels                                                   | max. 1000 kg |
|                              | 1,5 - 3 mm on acropaks                                                | max. 400 kg  |
|                              | On request: in drums                                                  | max. 400 kg  |
|                              | On request: in bars, diameter 2 - 5 mm, sheared ends (length ≤ 3.5 m) | max. 500 kg  |

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