

# Database of Steel and Alloy (Marochnik)

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[Home](#) [European steel grades](#) [Steel and Alloy](#) [Search](#) [Equivalent grades](#) [Grading](#) [GOST Standard](#) [Contacts](#)

YOU HERE: [Steel and Alloy](#) -> [Bronze](#)

## Characteristics for grade BrSu6F1 ( БpCy6Φ1 ).

|                           |                          |
|---------------------------|--------------------------|
| <b>Grade :</b>            | BrSu6F1 ( БpCy6Φ1 )      |
| <b>Classification :</b>   | Tin-free foundry bronzes |
| <b>Equivalent grades:</b> | Is absent                |

## Chemical composition in % for grade BrSu6F1 ( БpCy6Φ1 )

| P         | Cu          | Sb        | Impurity |
|-----------|-------------|-----------|----------|
| 0.4 - 0.9 | 91.7 - 94.9 | 4.7 - 6.2 | all 1.2  |

Comment: Cu is a basis; the percentage of Cu is given approximately.

## Mechanical properties under T=20°C for grade BrSu6F1 ( БpCy6Φ1 )

| Assortment | Dimension | Direct. | $\sigma_B$ | $\sigma_T$ | $\delta_5$ | $\psi$ | KCU                 | Heat treatment |
|------------|-----------|---------|------------|------------|------------|--------|---------------------|----------------|
| -          | mm        | -       | MPa        | MPa        | %          | %      | kJ / m <sup>2</sup> | -              |
|            |           |         | 216        |            | 5          |        |                     |                |

|                                            |                              |
|--------------------------------------------|------------------------------|
| Brinell hardness for BrSu6F1 ( БpCy6Φ1 ) , | HB 10 <sup>-1</sup> = 78 MPa |
|--------------------------------------------|------------------------------|

## Technological properties of the material BrSu6F1 ( БpCy6Φ1 ) .

|                    |       |
|--------------------|-------|
| Linear shrinkage : | 1.3 % |
|--------------------|-------|

## Physical properties for grade BrSu6F1 ( БpCy6Φ1 )

| T     | E 10 <sup>-5</sup> | $\alpha$ 10 <sup>6</sup> | $\lambda$      | $\rho$            | C            | R 10 <sup>9</sup> |
|-------|--------------------|--------------------------|----------------|-------------------|--------------|-------------------|
| Grade | MPa                | 1/Grade                  | Watt/(m·Grade) | kg/m <sup>3</sup> | J/(kg·Grade) | Ohm·m             |
| 20    | 0.931              |                          | 4.6            | 8500              |              |                   |
| 100   |                    | 17.3                     |                |                   |              |                   |

## Specification :

### Mechanical properties :

$\sigma_B$  - Tensile strength , [MPa]

$\sigma_T$  - Yield stress, [MPa]

$\delta_5$  - Specific elongation at fracture , [ % ]

$\psi$  - Reduction of area , [ % ]

**KCU** - Impact strength , [ kJ / m<sup>2</sup> ]

**HB** - Brinell hardness , [MPa]

**Physical properties :**

**T** - Test temperature , [Grade]

**E** - Young modulus , [MPa]

$\alpha$  - Coefficient of linear expansion (range 20° - T ) , [1/Grade]

$\lambda$  - Thermal (heat) condition coefficient , [Watt/(m·Grade)]

$\rho$  - Density , [kg/m<sup>3</sup>]

**C** - Specific heat ( range 20° - T ) , [J/(kg·Grade)]

**R** - Electrical resistance , [Ohm·m]

Database of steels and alloys (Marochnik) contains information about chemical composition and properties more then 2500 steels and alloys (stainless steel, alloy steel, carbone steel, structural steel, tool steel, cast iron, aluminum alloy, titanium alloy, copper alloy, nickel alloy, magnesium alloy and others).  
Helpfull for specialists in grade technology, structural engineer, mechanical engineer, metallurgy and metal trader

[Top](#)

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