

# Database of Steel and Alloy ( Marochnik )

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## Characteristics for grade LS59-1V ( ЛС59-1В ).

|                           |                                     |
|---------------------------|-------------------------------------|
| <b>Grade :</b>            | LS59-1V ( ЛС59-1В )                 |
| <b>Classification :</b>   | Copper-zinc alloys pressure treated |
| <b>Equivalent grades:</b> | <a href="#">Go here</a>             |

## Chemical composition in % for grade LS59-1V ( ЛС59-1В )

| Fe      | P        | Cu      | Pb        | Zn          | Sb       | Bi        | Impurity |
|---------|----------|---------|-----------|-------------|----------|-----------|----------|
| max 0.5 | max 0.02 | 57 - 61 | 0.8 - 1.9 | 35.6 - 42.2 | max 0.01 | max 0.003 | all 1.5  |

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

## Mechanical properties under T=20°C for grade LS59-1V ( ЛС59-1В )

| Assortment          | Dimension | Direct. | $\sigma_B$ | $\sigma_T$ | $\delta_5$ | $\psi$ | KCU                 | Heat treatment |
|---------------------|-----------|---------|------------|------------|------------|--------|---------------------|----------------|
| -                   | mm        | -       | MPa        | MPa        | %          | %      | kJ / m <sup>2</sup> | -              |
| Bar, GOST 2060-2006 |           |         | 490        |            | 7          |        |                     |                |
| Bar, GOST 2060-2006 |           |         | 330        |            | 25         |        |                     |                |
| Bar, GOST 2060-2006 |           |         | 360        |            | 22         |        |                     |                |

|                                                               |                               |
|---------------------------------------------------------------|-------------------------------|
| Brinell hardness for LS59-1V ( ЛС59-1В ) , Bar GOST 2060-2006 | HB 10 <sup>-1</sup> = 80 MPa  |
| Brinell hardness for LS59-1V ( ЛС59-1В ) , Bar GOST 2060-2006 | HB 10 <sup>-1</sup> = 130 MPa |

## Technological properties of the material LS59-1V ( ЛС59-1В ).

|                         |              |
|-------------------------|--------------|
| Melting temperature :   | 900 °C       |
| Forging temperature :   | 640 - 780 °C |
| Annealing temperature : | 600 - 650 °C |

## Physical properties for grade LS59-1V ( ЛС59-1В )

| 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    | 1.05               |                          | 104.7          | 8400              |              | 66                |
| 100   |                    | 20.6                     |                |                   | 376.8        |                   |

**Equivalent steels for grade LS59-1V ( ЛС59-1В )**

Warning! Indicated both exact and nearest equivalents.

|       |
|-------|
| Japan |
| JIS   |
| C3603 |
| C3604 |

**Specification :****Mechanical properties :**

|            |                                             |
|------------|---------------------------------------------|
| $\sigma_B$ | - Tensile strength , [MPa]                  |
| $\sigma_T$ | - Yield stress , [MPa]                      |
| $\delta_5$ | - Specific elongation at fracture , [ % ]   |
| $\psi$     | - Reduction of area , [ % ]                 |
| <b>KCU</b> | - Impact strength , [ kJ / m <sup>2</sup> ] |
| <b>HB</b>  | - Brinell hardness , [MPa]                  |

**Physical properties :**

|           |                                                                |
|-----------|----------------------------------------------------------------|
| <b>T</b>  | - Test temperature , [Grade]                                   |
| <b>E</b>  | - 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> ]                               |
| <b>C</b>  | - Specific heat ( range 20° - T ) , [J/(kg·Grade)]             |
| <b>R</b>  | - 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

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