

# Database of Steel and Alloy (Marochnik)

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## Characteristics for grade 10KH11N23T3MR ( 10X11H23T3MP ).

|                           |                                                    |
|---------------------------|----------------------------------------------------|
| <b>Grade :</b>            | 10KH11N23T3MR ( 10X11H23T3MP ) ( X12H22T3MP ЭП33 ) |
| <b>Classification :</b>   | High alloy high-temperature steel                  |
| <b>Equivalent grades:</b> | Is absent                                          |

## Chemical composition in % for grade 10KH11N23T3MR ( 10X11H23T3MP )

| C       | Si      | Mn      | Ni      | S        | P         | Cr        | Mo      | Ti        | Al      | B        |
|---------|---------|---------|---------|----------|-----------|-----------|---------|-----------|---------|----------|
| max 0.1 | max 0.6 | max 0.6 | 21 - 25 | max 0.01 | max 0.025 | 10 - 12.5 | 1 - 1.6 | 2.6 - 3.2 | max 0.8 | max 0.02 |

## Mechanical properties under T=20°C for grade 10KH11N23T3MR ( 10X11H23T3MP )

| Assortment        | Dimension | Direct. | $\sigma_B$ | $\sigma_T$ | $\delta_5$ | $\psi$ | KCU                 | Heat treatment       |
|-------------------|-----------|---------|------------|------------|------------|--------|---------------------|----------------------|
| -                 | mm        | -       | MPa        | MPa        | %          | %      | kJ / m <sup>2</sup> | -                    |
| Bar, GOST 5949-75 |           |         | 880-980    | 590-685    | 8-10       | 10-12  | 290                 | Hardening and ageing |

## 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]

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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