

# Database of Steel and Alloy ( Marochnik )

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## Characteristics for grade 38KHM ( 38XM ).

|                    |                         |
|--------------------|-------------------------|
| Grade :            | 38KHM ( 38XM )          |
| Substitute:        | 38XB                    |
| Classification :   | Alloy structural steel  |
| Equivalent grades: | <a href="#">Go here</a> |

## Chemical composition in % for grade 38KHM ( 38XM )

| C           | Si          | Mn          | Ni      | S         | P         | Cr        | Mo        | Cu      |
|-------------|-------------|-------------|---------|-----------|-----------|-----------|-----------|---------|
| 0.35 - 0.42 | 0.17 - 0.37 | 0.35 - 0.65 | max 0.3 | max 0.035 | max 0.035 | 0.9 - 1.3 | 0.2 - 0.3 | max 0.3 |

## Mechanical properties under T=20°C for grade 38KHM ( 38XM )

| Assortment        | Dimension | Direct. | $\sigma_B$ | $\sigma_T$ | $\delta_5$ | $\psi$ | KCU                 | Heat treatment                            |
|-------------------|-----------|---------|------------|------------|------------|--------|---------------------|-------------------------------------------|
| -                 | mm        | -       | MPa        | MPa        | %          | %      | kJ / m <sup>2</sup> | -                                         |
| Bar, GOST 4543-71 | Ø 25      |         | 980        | 885        | 11         | 45     | 690                 | Guenching 850°C, oil, Drawing 580°C, air, |

Brinell hardness for 38KHM ( 38XM ) (annealing), GOST 4543-71

HB 10<sup>-1</sup> = 241 MPa

## Equivalent steels for grade 38KHM ( 38XM )

Warning! Indicated both exact and nearest equivalents.

| USA     | Germany  | Japan  | France  | England | European | Italy     | Spain    | China  | Sweden | Bulgaria | Poland | Romania  | Czechia | Austria    |
|---------|----------|--------|---------|---------|----------|-----------|----------|--------|--------|----------|--------|----------|---------|------------|
| -       | DIN, WNr | JIS    | AFNOR   | BS      | EN       | UNI       | UNE      | GB     | SS     | BDS      | PN     | STAS     | CSN     | ONORM      |
| G41400  | 1.7225   | SCM440 | 42CD4   | 42CrMo4 | 1.7202   | 38CrMo4KB | 42CrMo4  | 42CrMo | 2244   | 38ChM    | 40HM   | 41MoCr11 | 15142   | 42CrMo4SP  |
| G41420  | 41CrMo4  |        | 42CD4FF | 50CrMo4 | 1.7225   | 42CrMo4   | 42CrMoS4 |        |        | 40ChML   |        | 42MoCr11 |         | BOHLERV320 |
| G41500  | 42CrMo4  |        | 42CrMo4 | 708M40  | 37CrMo4  |           |          |        |        |          |        |          |         |            |
| Gr.4140 | GS-      |        | A35-590 | 709M40  | 41CrMo4  |           |          |        |        |          |        |          |         |            |
| H41400  | 42CrMo4  |        |         |         | 42CrMo4  |           |          |        |        |          |        |          |         |            |
| J14047  |          |        |         |         |          |           |          |        |        |          |        |          |         |            |

## 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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