

# 12Kh2M

also listed as 12G2A

Chemical composition, mechanical and physical property values, and 11 standard designations from 1 regions.

| OTHER DESIGNATIONS | PROPERTY VALUES |
|--------------------|-----------------|
| 11 in 1 regions    | 15 on file      |

## Chemical composition

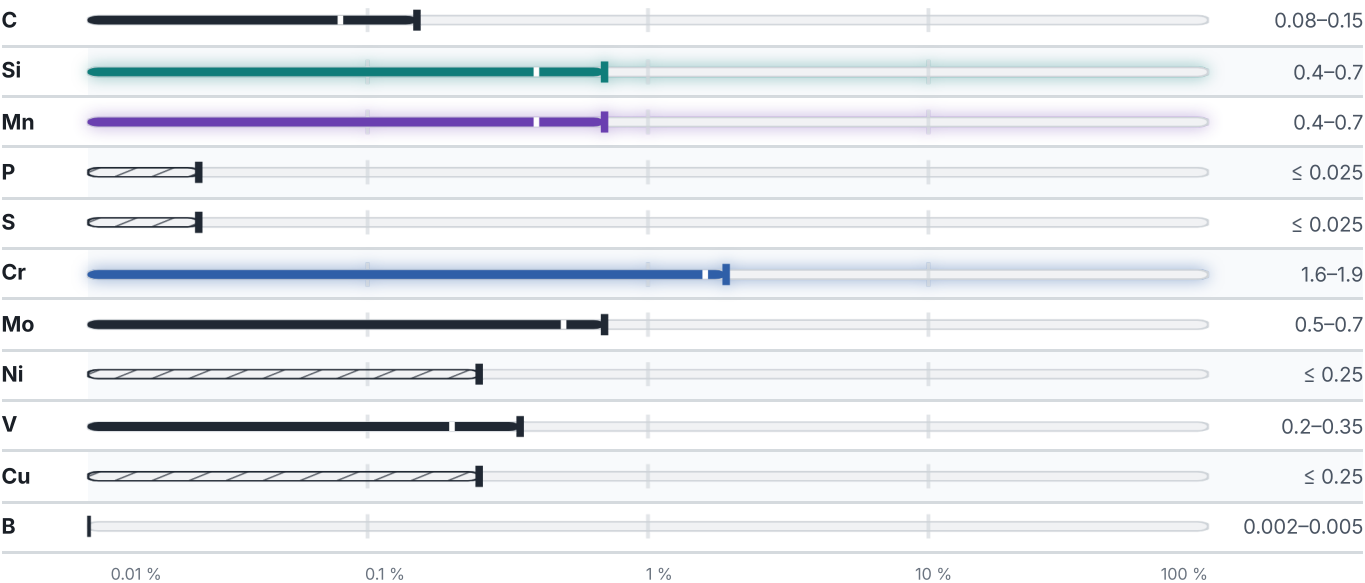
Mass fraction in %

What this alloy is



● Iron — the balance, never listed by a standard — 95.6 % ● Cr — 1.8 % ● Mo — 0.6 % ● Si — 0.6 % ● Traces & impurities · 1.5 %

Logarithmic scale, 0.01 % to 100 % — every value here compares directly, decade by decade.



The scale is logarithmic, not the element’s raw share of the alloy — the only honest way to fit 0.01 % and 100 % in one picture, and it means every value here can be compared with every other.

## Predicted transformation temperatures

computed from composition · °C

|                         |                         |                         |                        |
|-------------------------|-------------------------|-------------------------|------------------------|
| PREDICTED AE3<br>841 °C | PREDICTED AE1<br>769 °C | PREDICTED ACM<br>447 °C | PREDICTED BS<br>507 °C |
|-------------------------|-------------------------|-------------------------|------------------------|

## Mechanical properties

13 values across 1 conditions

| CONDITION · DIMENSION | RM<br>N/mm <sup>2</sup> | RE<br>N/mm <sup>2</sup> | A5<br>% | Z<br>% | KCU<br>kJ/m <sup>2</sup> |
|-----------------------|-------------------------|-------------------------|---------|--------|--------------------------|
| Ø 42 × 6              | 240                     | 480                     | 24      | –      | 2700                     |
| Ø 32 × 5              | 530                     | 330                     | 22      | –      | 2300                     |
| Ø 273 × 36            | 600                     | 440                     | 24      | 72     | 1900                     |

## Physical properties

4 values

| CONDITION · DIMENSION | RHO<br>g/cm <sup>3</sup> | ALPHA<br>10 <sup>-6</sup> /K | LAMBDA<br>W/(m·K) |
|-----------------------|--------------------------|------------------------------|-------------------|
| 20                    | 7.8                      | –                            | 29.4              |
| 100                   | –                        | 10.95                        | –                 |
| 200                   | –                        | 11.95                        | –                 |
| 300                   | –                        | 12.65                        | –                 |
| 400                   | –                        | 13.15                        | –                 |
| 500                   | –                        | 13.7                         | –                 |
| 600                   | –                        | 14                           | –                 |
| 700                   | –                        | 14.3                         | –                 |

| PROPERTY                 | VALUE | UNIT |
|--------------------------|-------|------|
| Transformation point Ac1 | 775   | °C   |
| Transformation point Ac3 | 865   | °C   |
| Transformation point Ar3 | 770   | °C   |
| Transformation point Ar1 | 715   | °C   |

## Designations across standards

11 designations · 1 documented as identical

|                                              |      |
|----------------------------------------------|------|
| Russia / CIS                                 | 11   |
| 12G2A                                        | gost |
| 12G2F                                        | gost |
| 12G2FD                                       | gost |
| 12G2S                                        | gost |
| 12G2SB                                       | gost |
| 12G2SD                                       | gost |
| 12Kh2M                                       | gost |
| 12Kh2MFSR <span>This grade's own name</span> | gost |
| 12KhN2MDF                                    | gost |
| 12X2M-БД                                     | gost |
| 12X2MΦCP                                     | gost |

**Note on use.** The data is compiled to the best of our knowledge from publicly available standards and manufacturer documentation. It replaces neither material testing nor an inspection document to EN 10204. Please request a mill certificate to EN 10204 2.1, 3.1 or 3.2 together with your enquiry. The standard in its current valid edition always prevails.

**Enquiry about 12Kh2M**  
Quotation, availability, mill certificate or a technical question — directly on the material page.

**Start an enquiry**

**DATASHEET ONLINE**  
View the material page

**GRADE SEARCH**  
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**MATERIAL NO.**  
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**ISSUED**  
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