

MATERIAL NUMBER 1.4303 · CLASS 1.4

# 06X18H11

## Material no. 1.4303

also listed as X 5 CrNi 18 12

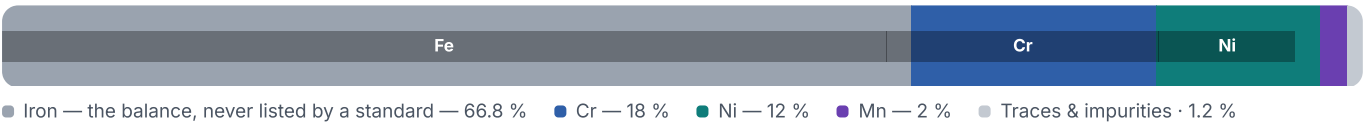
Chemical composition, mechanical and physical property values, and 84 standard designations from 13 regions.

|                             |                                               |                                      |
|-----------------------------|-----------------------------------------------|--------------------------------------|
| DENSITY<br><b>7.9</b> g/cm³ | OTHER DESIGNATIONS<br><b>84</b> in 13 regions | PROPERTY VALUES<br><b>10</b> on file |
|-----------------------------|-----------------------------------------------|--------------------------------------|

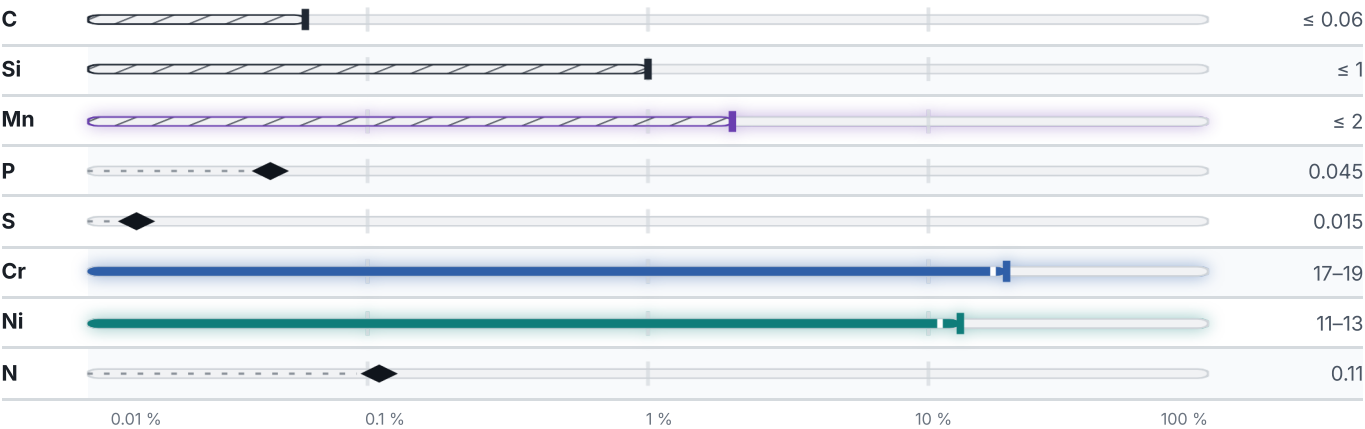
Chemical composition

Mass fraction in %

What this alloy is



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

Not enough recorded composition to predict a transformation temperature for this grade — missing: Mo.

## Mechanical properties

22 values across 6 conditions

| CONDITION · DIMENSION             | RM<br>N/mm <sup>2</sup> | RE<br>N/mm <sup>2</sup> | A<br>%                  | HB      | HRB     | HV  |
|-----------------------------------|-------------------------|-------------------------|-------------------------|---------|---------|-----|
| Plate/Sheet Hot-rolled            | 480                     | 175                     | 40                      | –       | –       | –   |
| Hot-rolled                        | –                       | –                       | –                       | 187     | 90      | 200 |
| CONDITION · DIMENSION             |                         |                         | RM<br>N/mm <sup>2</sup> | A5<br>% |         |     |
| Pipe hot strain, GOST 9940-81     |                         |                         | 529                     | 40      |         |     |
| Pipe cooling strain, GOST 9941-81 |                         |                         | 549                     | 35      |         |     |
| SOFT ANNEALED                     |                         |                         |                         | HB      |         |     |
| Soft annealed                     |                         |                         |                         | 215     |         |     |
| CONDITION · DIMENSION             |                         | RM<br>N/mm <sup>2</sup> | RE<br>N/mm <sup>2</sup> | A5<br>% | Z<br>%  |     |
| Pipe                              |                         | 540                     | 220                     | 35      | 55      |     |
| CONDITION · DIMENSION             |                         | RM<br>N/mm <sup>2</sup> | RE<br>N/mm <sup>2</sup> | A5<br>% | Z<br>%  |     |
| Bar, GOST 5949-75                 |                         | 540                     | 196                     | 40      | 55      |     |
| CONDITION · DIMENSION             |                         | RM<br>N/mm <sup>2</sup> | RE<br>N/mm <sup>2</sup> | A5<br>% | A5<br>% |     |
| Sheet trick, GOST 7350-77         |                         | 530                     | 235                     | 38      |         |     |

## Physical properties

2 values

| CONDITION · DIMENSION | RHO<br>g/cm <sup>3</sup> | E<br>GPa | ALPHA<br>10 <sup>-6</sup> /K | LAMBDA<br>W/(m·K) | CP<br>J/(kg·K) | RHO_EL<br>nΩ·m |
|-----------------------|--------------------------|----------|------------------------------|-------------------|----------------|----------------|
| 20                    | 7.9                      | 205      | –                            | 15.1              | –              | 761            |
| 100                   | 7.86                     | 202      | 16.6                         | 16.3              | 460            | 800            |
| 200                   | 7.82                     | 197      | 17                           | 17.6              | 482            | 865            |
| 300                   | 7.78                     | 190      | 17.2                         | 18.7              | 507            | 930            |
| 400                   | 7.74                     | 181      | 17.5                         | 20.4              | 525            | 982            |
| 500                   | 7.69                     | 173      | 17.9                         | 22.2              | 545            | 1038           |
| 600                   | 7.65                     | 160      | 18.2                         | 24.1              | 563            | 1070           |
| 700                   | 7.6                      | 150      | 18.6                         | 25.9              | 579            | 1120           |
| 800                   | 7.56                     | –        | 18.9                         | 27.4              | 590            | 1155           |
| 900                   | 7.51                     | –        | 19.3                         | 29.1              | 603            | 1210           |
| 1000                  | –                        | –        | –                            | 30.8              | 616            | 1245           |

| CONDITION · DIMENSION | RHO<br>g/cm³ | E<br>GPa | ALPHA<br>10 <sup>-6</sup> /K | LAMBDA<br>W/(m·K) | CP<br>J/(kg·K) | RHO_EL<br>nΩ·m |
|-----------------------|--------------|----------|------------------------------|-------------------|----------------|----------------|
| 1100                  | –            | –        | –                            | 32.3              | 625            | 1275           |
| 1200                  | –            | –        | –                            | 34.1              | 637            | 1315           |

| PROPERTY | VALUE | UNIT  |
|----------|-------|-------|
| Density  | 7.9   | g/cm³ |

Technological properties

| PROPERTY    | VALUE                | UNIT |
|-------------|----------------------|------|
| Weldability | limited weldability. |      |

## Designations across standards

84 designations · 6 documented as identical

| United States | 48       | TP304L                           | astm   |
|---------------|----------|----------------------------------|--------|
| S30300        | uns      |                                  |        |
| S30400        | uns      |                                  |        |
| S30403        | uns      |                                  |        |
| S30453        | uns      |                                  |        |
| S30500        | uns      |                                  |        |
| S30800        | uns      |                                  |        |
| 303           | aisi-sae |                                  |        |
| 30305         | aisi-sae |                                  |        |
| 30308         | aisi-sae |                                  |        |
| 304           | aisi-sae |                                  |        |
| 304L          | aisi-sae |                                  |        |
| 304LN         | aisi-sae |                                  |        |
| 305           | aisi-sae |                                  |        |
| 305L          | aisi-sae |                                  |        |
| 308           | aisi-sae |                                  |        |
| S30500        | aisi-sae |                                  |        |
| S30800        | aisi-sae |                                  |        |
| 305 3008      | astm     |                                  |        |
| A1012         | astm     |                                  |        |
| A167          | astm     |                                  |        |
| A193          | astm     |                                  |        |
| A194          | astm     |                                  |        |
| A240          | astm     |                                  |        |
| A249          | astm     |                                  |        |
| A276          | astm     |                                  |        |
| A313          | astm     |                                  |        |
| A314          | astm     |                                  |        |
| A320          | astm     |                                  |        |
| A368          | astm     |                                  |        |
| A473          | astm     |                                  |        |
| A478          | astm     |                                  |        |
| A480          | astm     |                                  |        |
| A492          | astm     |                                  |        |
| A493          | astm     |                                  |        |
| A511          | astm     |                                  |        |
| A554          | astm     |                                  |        |
| A580          | astm     |                                  |        |
| F1667         | astm     |                                  |        |
| F2215         | astm     |                                  |        |
| F593          | astm     |                                  |        |
| F594          | astm     |                                  |        |
| F738          | astm     |                                  |        |
| F836          | astm     |                                  |        |
| F837          | astm     |                                  |        |
| F879          | astm     |                                  |        |
| F880          | astm     |                                  |        |
| TP304         | astm     |                                  |        |
|               |          | <b>Russia / CIS</b>              | 11     |
|               |          | 06Ch18N11                        | gost   |
|               |          | 06KH18N11                        | gost   |
|               |          | 06X18H11                         | gost   |
|               |          | 06X18H11                         | gost   |
|               |          | 0X18H11                          | gost   |
|               |          | 12KH18N12BL                      | gost   |
|               |          | 12KH18N12T                       | gost   |
|               |          | 12X18H12                         | gost   |
|               |          | сг.06X18H11                      | gost   |
|               |          | X18H12T                          | gost   |
|               |          | ЭИ684                            | gost   |
|               |          | <b>Europe</b>                    | 3      |
|               |          | X 5 CrNi 18 12                   | din-en |
|               |          | X4CrNi18-12                      | din-en |
|               |          | X6CrNi18-12                      | din-en |
|               |          | <b>France</b>                    | 3      |
|               |          | Z1CN18-12                        | afnor  |
|               |          | Z5CN18-11FF                      | afnor  |
|               |          | Z8CN18-12                        | afnor  |
|               |          | <b>Spain</b>                     | 3      |
|               |          | F.3513                           | une    |
|               |          | F.3513-X8CrNi.18-12              | une    |
|               |          | X8CrNi18-12                      | une    |
|               |          | <b>United States / Aerospace</b> | 3      |
|               |          | 5514                             | ams    |
|               |          | 5685                             | ams    |
|               |          | 5686                             | ams    |
|               |          | <b>Japan</b>                     | 3      |
|               |          | SUS 305 SUS 305J1                | jis    |
|               |          | SUS305                           | jis    |
|               |          | SUS305J1                         | jis    |
|               |          | <b>Italy</b>                     | 3      |
|               |          | X7CrNi18-10                      | uni    |
|               |          | X8CrNi1812                       | uni    |
|               |          | X8CrNi19-10                      | uni    |
|               |          | <b>United Kingdom</b>            | 2      |
|               |          | 305S17                           | bs     |
|               |          | 305S19                           | bs     |

|           |    |                   |     |
|-----------|----|-------------------|-----|
| Poland    | 2  | Sweden            | 1   |
| 00H18N10  | pn | 23 33             | ss  |
| 0H18N9    | pn |                   |     |
| China     | 1  | former Yugoslavia | 1   |
| 1Cr18Ni12 | gb | Č.45702           | jus |

**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 06X18H11

Quotation, availability, mill certificate or a technical question — directly on the material page.

[Start an enquiry](#)

|                        |                   |              |              |
|------------------------|-------------------|--------------|--------------|
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