

MATERIAL NUMBER 1.4303 · CLASS 1.4

# 305 3008

## Material no. 1.4303

also listed as X 5 CrNi 18 12

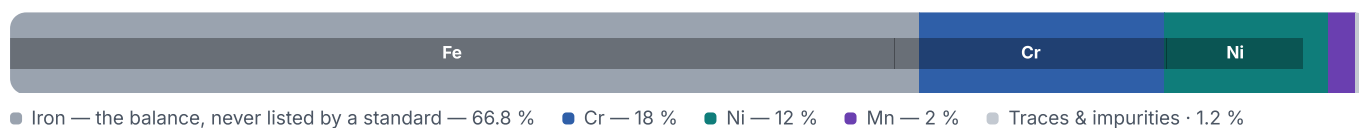
Chemical composition, mechanical and physical property values, and 84 standard designations from 13 regions.

| DENSITY                      | OTHER DESIGNATIONS      | PROPERTY VALUES   |
|------------------------------|-------------------------|-------------------|
| <b>7.9</b> g/cm <sup>3</sup> | <b>84</b> in 13 regions | <b>10</b> on file |

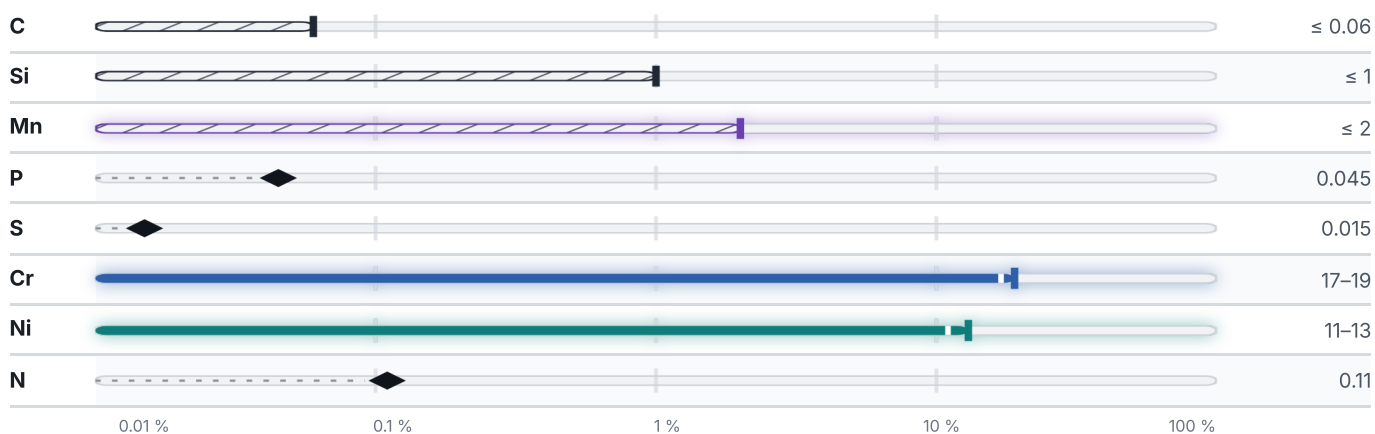
### Chemical composition

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        | This grade's own name | 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           | This grade's own name | 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                   | This grade's own name din-en |
|               |                       |          | X4CrNi18-12                      | This grade's own name din-en |
|               |                       |          | X6CrNi18-12                      | This grade's own name 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                         | This grade's own name 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 305 3008

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

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