

MATERIAL NUMBER 1.4828 · CLASS 1.4

# SUH 309TP

Material no. 1.4828

also listed as X15CrNiSi20-12

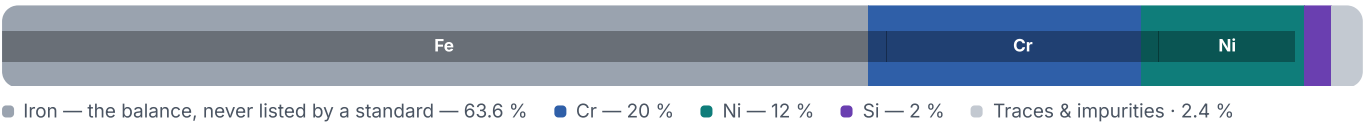
Chemical composition, mechanical and physical property values, and 77 standard designations from 19 regions.

|                             |                                               |                                     |
|-----------------------------|-----------------------------------------------|-------------------------------------|
| DENSITY<br><b>7.9</b> g/cm³ | OTHER DESIGNATIONS<br><b>77</b> in 19 regions | PROPERTY VALUES<br><b>9</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

14 values across 4 conditions

| CONDITION · DIMENSION        | RM<br>N/mm² | RE<br>N/mm² | A<br>%      | Z<br>%      | HB      | HRB | HV      |
|------------------------------|-------------|-------------|-------------|-------------|---------|-----|---------|
| Bars/Rods Solution treatment | 560         | 205         | 45          | 50          | –       | –   | –       |
| Solution treatment           | –           | –           | –           | –           | 201     | 95  | 210     |
| SOLUTION ANNEALED            |             |             |             |             |         |     | HB      |
| Solution annealed            |             |             |             |             |         |     | 223     |
| QUENCHING 1000 - 1150°C, AIR | RM<br>N/mm² |             | RE<br>N/mm² |             | A5<br>% |     | Z<br>%  |
| Ø 60                         | 590         |             | 295         |             | 35      |     | 55      |
| CONDITION · DIMENSION        |             |             |             | RM<br>N/mm² |         |     | A5<br>% |
| Sheet thin, GOST 5582-75     |             |             |             | 590         |         |     | 40      |

Physical properties

1 values

| CONDITION · DIMENSION | RHO<br>g/cm³ | ALPHA<br>10 <sup>^-6</sup> /K | LAMBDA<br>W/(m·K) | RHO_EL<br>nΩ·m |
|-----------------------|--------------|-------------------------------|-------------------|----------------|
| 20                    | 7.8          | –                             | –                 | 946            |
| 100                   | 7.76         | 16                            | 15                | 1000           |
| 200                   | –            | –                             | 17                | 1051           |
| 300                   | –            | –                             | 18                | 1095           |
| 400                   | –            | –                             | 19                | 1130           |
| 500                   | –            | –                             | 21                | 1100           |
| 600                   | 7.55         | 18.1                          | 23                | 1194           |
| 700                   | 7.51         | 18.3                          | 24                | 1218           |
| 800                   | 7.47         | 18.5                          | 26                | 1242           |
| 900                   | 7.42         | 18.8                          | 28                | 1242           |
| 1000                  | –            | 19                            | –                 | –              |
| PROPERTY              |              |                               | VALUE             | UNIT           |
| Density               |              |                               | 7.9               | g/cm³          |

## Designations across standards

77 designations · 2 documented as identical

| United States |                       | 30       | Russia / CIS              |                       | 9      |
|---------------|-----------------------|----------|---------------------------|-----------------------|--------|
| S20500        |                       | uns      | 08KH20N14S2               |                       | gost   |
| S30900        |                       | uns      | 08X20H14C2                |                       | gost   |
| S41400        |                       | uns      | 0X20H14C2                 |                       | gost   |
| S43023        |                       | uns      | 20Ch20N14S2               |                       | gost   |
| 205           |                       | aisi-sae | 20KH20N14S2               |                       | gost   |
| 30309         |                       | aisi-sae | 20X20H14C2                |                       | gost   |
| 309           |                       | aisi-sae | X20H14C2                  |                       | gost   |
| 3U8           |                       | aisi-sae | ЭИ211                     |                       | gost   |
| 414           |                       | aisi-sae | ЭИ732                     |                       | gost   |
| 430FSe        |                       | aisi-sae |                           |                       |        |
| 51414         |                       | aisi-sae | United Kingdom            |                       | 3      |
| S30900        |                       | aisi-sae | 305S19                    |                       | bs     |
| XM-15         |                       | aisi-sae | 309S24                    |                       | bs     |
| A167          |                       | astm     | X15CrNiSi20-12            |                       | bs     |
| A264          |                       | astm     |                           |                       |        |
| A276          |                       | astm     | United States / Aerospace |                       | 3      |
| A314          |                       | astm     | 5523                      |                       | ams    |
| A403          |                       | astm     | 5574                      |                       | ams    |
| A409          |                       | astm     | 5650                      |                       | ams    |
| A473          |                       | astm     |                           |                       |        |
| A479          |                       | astm     | Japan                     |                       | 3      |
| A480          |                       | astm     | SUH 309                   |                       | jis    |
| A484          |                       | astm     | SUH 309TB                 |                       | jis    |
| A511          |                       | astm     | SUH 309TP                 |                       | jis    |
| A580          |                       | astm     |                           |                       |        |
| A581          |                       | astm     | China                     |                       | 3      |
| A582          |                       | astm     | 1Cr20Ni14Si2              |                       | gb     |
| A666          |                       | astm     | 1Cr23Ni13                 |                       | gb     |
| A895          |                       | astm     | 2Cr23Ni13                 |                       | gb     |
| F2281         |                       | astm     |                           |                       |        |
| France        |                       | 9        | Europe                    |                       | 2      |
| 308F80        |                       | afnor    | 1.4828                    |                       | din-en |
| Z10CNS20-12   |                       | afnor    | X15CrNiSi20-12            | This grade's own name | din-en |
| Z10CNS25-20   |                       | afnor    |                           |                       |        |
| Z15CN24-13    |                       | afnor    | Spain                     |                       | 2      |
| Z15CNS20.10   |                       | afnor    | F.3312                    |                       | une    |
| Z15CNS20.12   |                       | afnor    | X15CrNiSi20-12            |                       | une    |
| Z17CNS20      | This grade's own name | afnor    |                           |                       |        |
| Z17CNS20-12   |                       | afnor    | Italy                     |                       | 2      |
| Z9CN24-13     |                       | afnor    | X16CrNi23-14              |                       | uni    |
|               |                       |          | X6CrNi2520                |                       | uni    |
|               |                       |          |                           |                       |        |
|               |                       |          | Czechia                   |                       | 2      |
|               |                       |          | 17251                     |                       | csn    |
|               |                       |          | 17256VN                   |                       | csn    |

|                          |      |                    |      |
|--------------------------|------|--------------------|------|
| <b>Poland</b>            | 2    | <b>Hungary</b>     | 1    |
| H18N9S                   | pn   | H8                 | msz  |
| H20N12S2                 | pn   |                    |      |
| <b>Slovakia</b>          | 1    | <b>Romania</b>     | 1    |
| 17 251                   | stn  | 15SiNiCr200        | stas |
| <b>Serbia</b>            | 1    | <b>Bulgaria</b>    | 1    |
| Č.4577                   | srps | Ch20N14S2          | bds  |
| <b>former Yugoslavia</b> | 1    | <b>South Korea</b> | 1    |
| Č.4577                   | jus  | STR309             | ks   |

**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.

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#### ISSUED

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