

MATERIAL NUMBER 1.5752 · CLASS 1.5

# 3316

## Material no. 1.5752

also listed as 14NiCr14

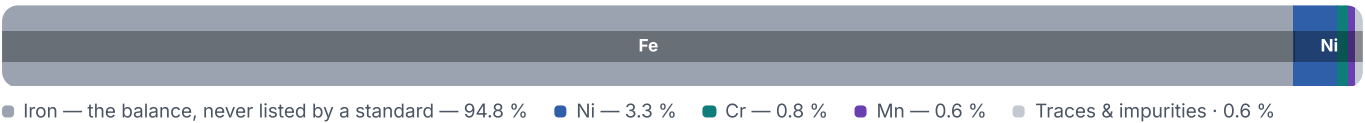
Chemical composition, mechanical and physical property values, and 53 standard designations from 15 regions.

|                                          |                                               |                                      |
|------------------------------------------|-----------------------------------------------|--------------------------------------|
| DENSITY<br><b>7.85</b> g/cm <sup>3</sup> | OTHER DESIGNATIONS<br><b>53</b> in 15 regions | PROPERTY VALUES<br><b>15</b> on file |
|------------------------------------------|-----------------------------------------------|--------------------------------------|

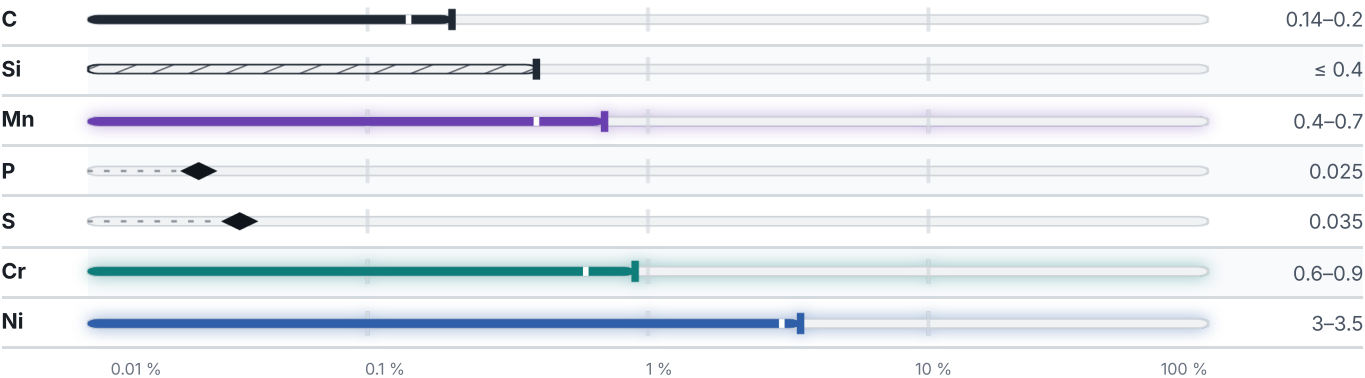
### Chemical composition

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

10 values across 6 conditions

|                                                          |                         |                         |         |        |                          |
|----------------------------------------------------------|-------------------------|-------------------------|---------|--------|--------------------------|
| TREATED TO IMPROVE SHEARABILITY                          |                         |                         |         |        | HB                       |
| Treated to improve shearability                          |                         |                         |         |        | 255                      |
| SOFT ANNEALED                                            |                         |                         |         |        | HB                       |
| Soft annealed                                            |                         |                         |         |        | 229                      |
| TREATED TO HARDNESS RANGE                                |                         |                         |         |        | HB                       |
| Treated to hardness range                                |                         |                         |         |        | 179–229                  |
| TREATED TO FERRITE-PEARLITE STRUCTURE AND HARDNESS RANGE |                         |                         |         |        | HB                       |
| Treated to ferrite-pearlite structure and hardness range |                         |                         |         |        | 166–217                  |
| QUENCHING AND DRAWING                                    | 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 15                                                     | 1130                    | 930                     | 10      | 50     | 880                      |
| CONDITION · DIMENSION                                    |                         |                         |         |        | HB                       |
| (annealing) , GOST 4543-71                               |                         |                         |         |        | 269                      |

## Physical properties

8 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) |
| 20                       | 7.84                     | 200      | –                            | –                 |
| 100                      | 7.82                     | –        | 11                           | 25                |
| 200                      | –                        | –        | 12                           | –                 |
| 300                      | 7.76                     | –        | 13                           | –                 |
| 400                      | 7.71                     | –        | 14.7                         | 19                |
| 500                      | –                        | –        | 15.3                         | –                 |
| 600                      | 7.63                     | –        | 15.6                         | –                 |
| PROPERTY                 | VALUE                    |          | UNIT                         |                   |
| Density                  | 7.85                     |          | g/cm <sup>3</sup>            |                   |
| Transformation point Ac1 | 745                      |          | °C                           |                   |
| Transformation point Ac3 | 800                      |          | °C                           |                   |
| Transformation point Ar3 | 675                      |          | °C                           |                   |

| PROPERTY                 | VALUE | UNIT |
|--------------------------|-------|------|
| Transformation point Ar1 | 625   | °C   |

## Technological properties

| PROPERTY           | VALUE                | UNIT |
|--------------------|----------------------|------|
| Weldability        | limited weldability. |      |
| Flake sensitivity  | predisposed          |      |
| Temper brittleness | predisposed          |      |

## Designations across standards

53 designations · 9 documented as identical

|                                             |          |                                               |        |
|---------------------------------------------|----------|-----------------------------------------------|--------|
| <b>United States</b>                        | 14       | <b>France</b>                                 | 6      |
| G33106 <small>This grade's own name</small> | uns      | 12NC15                                        | afnor  |
| 3310 <small>This grade's own name</small>   | aisi-sae | 13NiCr14                                      | afnor  |
| 3310H                                       | aisi-sae | 14 NC 11                                      | afnor  |
| 3310RH <small>This grade's own name</small> | aisi-sae | 14 NC 12                                      | afnor  |
| 3312 <small>This grade's own name</small>   | aisi-sae | 16NC11                                        | afnor  |
| 3316 <small>This grade's own name</small>   | aisi-sae | 20NC11                                        | afnor  |
| 3415                                        | aisi-sae |                                               |        |
| 9314                                        | aisi-sae | <b>United Kingdom</b>                         | 5      |
| E3310                                       | aisi-sae | 36A                                           | bs     |
| E3310X                                      | aisi-sae | 655H13                                        | bs     |
| E3316 <small>This grade's own name</small>  | aisi-sae | 655M13                                        | bs     |
| E9315 <small>This grade's own name</small>  | aisi-sae | A12 EN 36A                                    | bs     |
| G33106                                      | aisi-sae | EN36A                                         | bs     |
| P 6                                         | aisi-sae |                                               |        |
| <b>Russia / CIS</b>                         | 12       | <b>Europe</b>                                 | 3      |
| 12ChN3A                                     | gost     | 1.5752                                        | din-en |
| 12ChN3A-sh                                  | gost     | 14NiCr14 <small>This grade's own name</small> | din-en |
| 12HN3A                                      | gost     | 15NiCr13 <small>This grade's own name</small> | din-en |
| 12HN3A-sh                                   | gost     |                                               |        |
| 12HN3A-sz                                   | gost     | <b>Japan</b>                                  | 2      |
| 12KH2N4A                                    | gost     | SNC815                                        | jis    |
| 12KhN3A                                     | gost     | SNC815H                                       | jis    |
| 12KhN3A-sh                                  | gost     |                                               |        |
| 12XH3A-ш                                    | gost     | <b>China</b>                                  | 2      |
| 12XH3A                                      | gost     | 12CrNi3                                       | gb     |
| 12X2H4A                                     | gost     | 20CrNi3A                                      | gb     |
| 20XH3A                                      | gost     |                                               |        |
|                                             |          | <b>Poland</b>                                 | 2      |
|                                             |          | 12H2N4A                                       | pn     |
|                                             |          | 12HN3A                                        | pn     |
|                                             |          | <b>International</b>                          | 1      |
|                                             |          | 15NiCr13                                      | iso    |

|            |     |          |      |
|------------|-----|----------|------|
| Italy      | 1   | Serbia   | 1    |
| 16 NiCr 11 | uni | Č.5426   | srps |
| Czechia    | 1   | Hungary  | 1    |
| 16420      | csn | ~BNC 2   | msz  |
| Slovakia   | 1   | Bulgaria | 1    |
| 16 420     | stn | 12Ch2N4A | bds  |

**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 3316

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

[Start an enquiry](#)

|                        |                   |              |              |
|------------------------|-------------------|--------------|--------------|
| DATASHEET ONLINE       | GRADE SEARCH      | MATERIAL NO. | ISSUED       |
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