

MATERIAL NUMBER 1.0416 · CLASS 1.0

# SC(37)C

Material no. 1.0416

also listed as C18D

Chemical composition, mechanical and physical property values, and 34 standard designations from 17 regions.

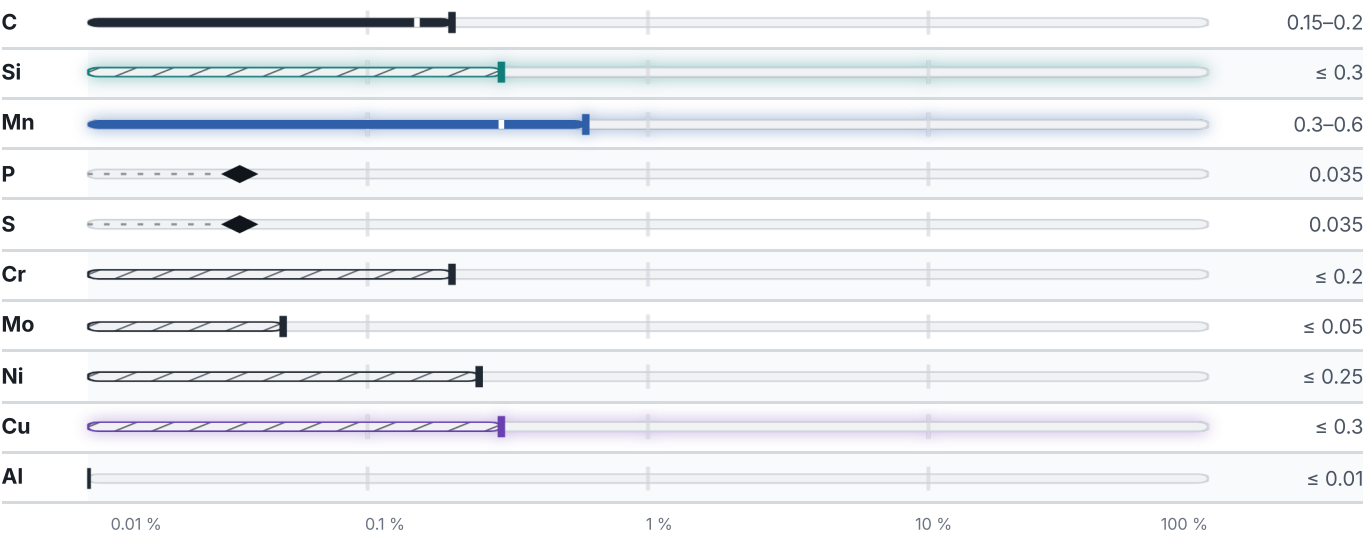
|                                          |                                               |                                      |
|------------------------------------------|-----------------------------------------------|--------------------------------------|
| DENSITY<br><b>7.85</b> g/cm <sup>3</sup> | OTHER DESIGNATIONS<br><b>34</b> in 17 regions | PROPERTY VALUES<br><b>18</b> on file |
|------------------------------------------|-----------------------------------------------|--------------------------------------|

Chemical composition

Mass fraction in %



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>819 °C | PREDICTED AE1<br>722 °C | PREDICTED ACM<br>423 °C | PREDICTED BS<br>592 °C |
|-------------------------|-------------------------|-------------------------|------------------------|

Mechanical properties

5 values across 1 conditions

|                                                 |             |             |         |        |              |
|-------------------------------------------------|-------------|-------------|---------|--------|--------------|
| NORMALIZING 910 - 930°C, DRAWING<br>670 - 690°C | RM<br>N/mm² | RE<br>N/mm² | A5<br>% | Z<br>% | KCU<br>kJ/m² |
| to 100                                          | 392         | 196         | 24      | 35     | 491          |

Physical properties

8 values

|                       |              |                              |                   |                |
|-----------------------|--------------|------------------------------|-------------------|----------------|
| CONDITION · DIMENSION | RHO<br>g/cm³ | ALPHA<br>10 <sup>-6</sup> /K | LAMBDA<br>W/(m·K) | CP<br>J/(kg·K) |
| 20                    | 7.82         | –                            | –                 | –              |
| 100                   | –            | 11.9                         | 78                | 470            |
| 200                   | –            | 12.5                         | 67                | 479            |
| 400                   | –            | 13.6                         | 48                | 517            |
| 500                   | –            | 14.2                         | 41                | –              |
| 600                   | –            | –                            | –                 | 571            |

|                          |       |       |
|--------------------------|-------|-------|
| PROPERTY                 | VALUE | UNIT  |
| Density                  | 7.85  | g/cm³ |
| Transformation point Ac1 | 735   | °C    |
| Transformation point Ac3 | 863   | °C    |
| Transformation point Ar3 | 840   | °C    |
| Transformation point Ar1 | 685   | °C    |

Technological properties

|                    |                      |      |
|--------------------|----------------------|------|
| PROPERTY           | VALUE                | UNIT |
| Weldability        | without limitations. |      |
| Flake sensitivity  | not predisposed      |      |
| Temper brittleness | not predisposed      |      |

## Designations across standards

34 designations · 3 documented as identical

|                                           |          |                     |       |
|-------------------------------------------|----------|---------------------|-------|
| <b>United States</b>                      | 4        | <b>Italy</b>        | 2     |
| G10170 <span>This grade's own name</span> | uns      | FeG400              | uni   |
| 1017 <span>This grade's own name</span>   | aisi-sae | FeG42               | uni   |
| Gr.N1                                     | aisi-sae |                     |       |
| J01700                                    | aisi-sae | <b>Czechia</b>      | 2     |
|                                           |          | 422 630             | csn   |
| <b>United Kingdom</b>                     | 3        | 422 633             | csn   |
| AM1                                       | bs       |                     |       |
| AW1                                       | bs       | <b>Poland</b>       | 2     |
| CLA9                                      | bs       | L400                | pn    |
|                                           |          | LII400              | pn    |
| <b>Japan</b>                              | 3        |                     |       |
| S17C                                      | jis      | <b>Hungary</b>      | 2     |
| SC360                                     | jis      | Ao400               | msz   |
| SC37                                      | jis      | Ao400FK             | msz   |
|                                           |          |                     |       |
| <b>Europe</b>                             | 2        | <b>Romania</b>      | 2     |
| C18D <span>This grade's own name</span>   | din-en   | OT400-1             | stas  |
| GS38                                      | din-en   | OT400-3             | stas  |
|                                           |          |                     |       |
| <b>France</b>                             | 2        | <b>Bulgaria</b>     | 2     |
| 20-40M                                    | afnor    | 15LI                | bds   |
| E20-40M                                   | afnor    | 15LII               | bds   |
|                                           |          |                     |       |
| <b>International</b>                      | 2        | <b>Russia / CIS</b> | 1     |
| 20-40                                     | iso      | 15L                 | gost  |
| 200-400                                   | iso      |                     |       |
|                                           |          | <b>Sweden</b>       | 1     |
| <b>China</b>                              | 2        | 1035                | ss    |
| 15                                        | gb       |                     |       |
| ZG200-400                                 | gb       | <b>Austria</b>      | 1     |
|                                           |          | GS38                | onorm |
|                                           |          |                     |       |
|                                           |          | <b>Taiwan</b>       | 1     |
|                                           |          | SC(37)C             | cns   |

**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 SC(37)C

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

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## MATERIAL NO.

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## ISSUED

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