

MATERIAL NUMBER 1.1189 · CLASS 1.1

# 1.1189

Chemical composition, mechanical and physical property values, and 14 standard designations from 8 regions.

|                              |                                              |                                     |
|------------------------------|----------------------------------------------|-------------------------------------|
| DENSITY<br><b>7.85</b> g/cm³ | OTHER DESIGNATIONS<br><b>14</b> in 8 regions | PROPERTY VALUES<br><b>9</b> on file |
|------------------------------|----------------------------------------------|-------------------------------------|

## Chemical composition

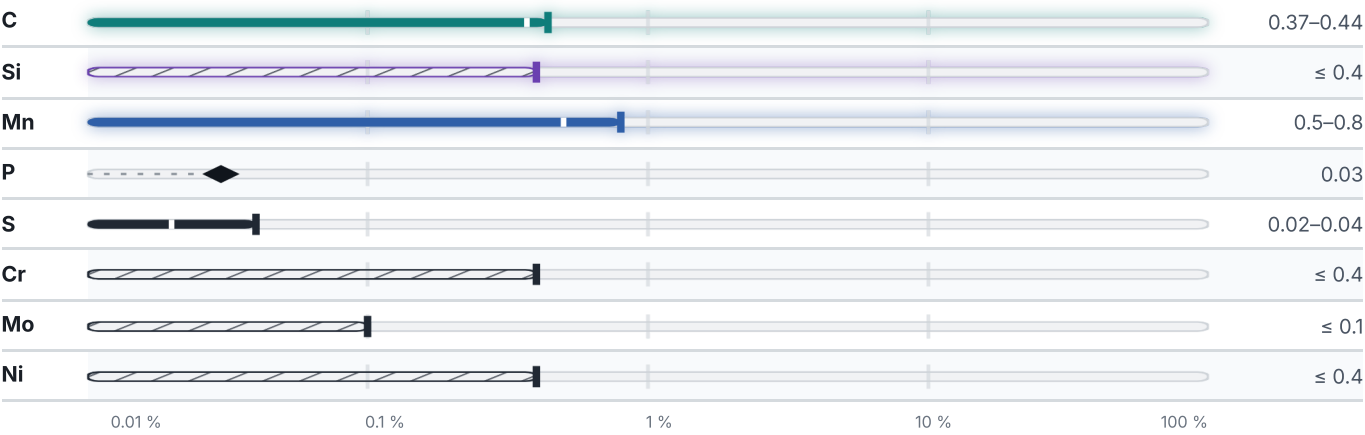
Mass fraction in %

What this alloy is



● Iron — the balance, never listed by a standard — 97.6 % ● Mn — 0.7 % ● C — 0.4 % ● Si — 0.4 % ● Traces & impurities · 1 %

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><b>774</b> °C | PREDICTED AE1<br><b>724</b> °C | PREDICTED ACM<br><b>603</b> °C | PREDICTED BS<br><b>560</b> °C |
|--------------------------------|--------------------------------|--------------------------------|-------------------------------|

## Mechanical properties

17 values across 3 conditions

| COLD DRAWN / HARD    | RM<br>N/mm <sup>2</sup> | A<br>% |
|----------------------|-------------------------|--------|
| 5 – 10               | 700–1000                | 6      |
| 10 – 16              | 650–980                 | 7      |
| 16 – 40              | 620–920                 | 8      |
| 40 – 63              | 590–840                 | 9      |
| 63 – 100             | 550–820                 | 9      |
| NORMALIZED           | RM<br>N/mm <sup>2</sup> | A<br>% |
| ≤ 16                 | 580                     | 16     |
| 16 – 100             | 550                     | 17     |
| 100 – 250            | 530                     | 17     |
| AS ROLLED AND TURNED | HB                      |        |
| As rolled and turned | 163–211                 |        |

## Physical properties

1 values

| PROPERTY | VALUE | UNIT              |
|----------|-------|-------------------|
| Density  | 7.85  | g/cm <sup>3</sup> |

## Designations across standards

14 designations · 4 documented as identical

|               |                       |          |                |  |      |
|---------------|-----------------------|----------|----------------|--|------|
| France        |                       | 3        | United Kingdom |  | 2    |
| XC 42         | afnor                 |          | 060A40         |  | bs   |
| XC38H1        | afnor                 |          | 080A40         |  | bs   |
| XC42H1u       | afnor                 |          | Russia / CIS   |  | 2    |
| Europe        |                       | 2        | 40             |  | gost |
| C40R          | This grade's own name | din-en   | ct.40          |  | gost |
| Cm 40         | This grade's own name | din-en   | International  |  | 1    |
| United States |                       | 2        | C40M2          |  | iso  |
| G10400        | This grade's own name | uns      | Japan          |  | 1    |
| 1040          | This grade's own name | aisi-sae | S 40C          |  | jis  |
|               |                       |          | Italy          |  | 1    |
|               |                       |          | C40            |  | uni  |

**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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