

MATERIAL NUMBER 1.7220 · CLASS 1.7

# H41350

Material no. 1.7220

also listed as 34CrMo4

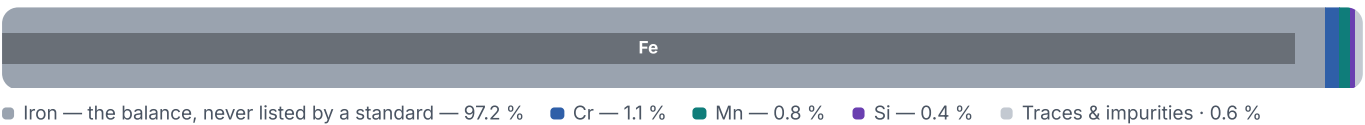
Chemical composition, mechanical and physical property values, and 159 standard designations from 23 regions.

|                              |                                                |                                      |
|------------------------------|------------------------------------------------|--------------------------------------|
| DENSITY<br><b>7.74</b> g/cm³ | OTHER DESIGNATIONS<br><b>159</b> in 23 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: Ni.

## Mechanical properties

51 values across 10 conditions

| QUENCHED AND TEMPERED · ROUND PRODUCTS             |                         |                         |         |        | A<br>% · Lo = 5,65 √So   |
|----------------------------------------------------|-------------------------|-------------------------|---------|--------|--------------------------|
| ≤ 16                                               |                         |                         |         |        | 11                       |
| 16 – 40                                            |                         |                         |         |        | 12                       |
| 40 – 100                                           |                         |                         |         |        | 14                       |
| 100 – 160                                          |                         |                         |         |        | 15                       |
| 160 – 250                                          |                         |                         |         |        | 15                       |
| QUENCHED AND TEMPERED                              |                         |                         |         |        | RM<br>N/mm <sup>2</sup>  |
| ≤ 8                                                |                         |                         |         |        | 1000                     |
| 8 – 20                                             |                         |                         |         |        | 900                      |
| 20 – 50                                            |                         |                         |         |        | 800                      |
| 50 – 80                                            |                         |                         |         |        | 750                      |
| QUENCHING 850 - 880°C, OIL,<br>DRAWING 585 - 650°C | 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> |
| max thickness 100                                  | 950                     | 750                     | 13      | 42     | 650                      |
| max thickness 120                                  | 900                     | 710                     | 13      | 42     | 650                      |
| max thickness 150                                  | 800                     | 600                     | 14      | 45     | 650                      |
| max thickness 200                                  | 700                     | 500                     | 16      | 45     | 600                      |
| CONDITION · DIMENSION                              | RM<br>N/mm <sup>2</sup> | RE<br>N/mm <sup>2</sup> | A<br>%  | Z<br>% | HB                       |
| Tempering after normalizing                        | 690                     | 440                     | 9       | 25     | 201                      |
| Tempering after quenching                          | 740                     | 540                     | 9       | 25     | 217                      |
| SOFT ANNEALED                                      |                         | RM<br>N/mm <sup>2</sup> |         |        | A80<br>%                 |
| 0.3 – 3                                            |                         | 600                     |         |        | 16                       |
| 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 25                                               | 930                     | 835                     | 12      | 45     | 780                      |
| TREATED TO IMPROVE SHEARABILITY                    |                         |                         |         |        | HB                       |
| Treated to improve shearability                    |                         |                         |         |        | 255                      |
| SOFT ANNEALED                                      |                         | HB                      |         |        | HV                       |
| Soft annealed                                      |                         | 223                     |         |        | 185                      |

| CONDITION · DIMENSION      | HB      |
|----------------------------|---------|
| (annealing) , GOST 4543-71 | 241     |
| QUENCHED AND TEMPERED      | HV      |
| Quenched and tempered      | 315–465 |

## Physical properties

8 values

| 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 |
|-----------------------|--------------|----------|------------------------------|-------------------|----------------|----------------|
| 20                    | 7.82         | 218      | –                            | –                 | –              | 328            |
| 100                   | 7.8          | 216      | 12.3                         | 40.6              | 462            | 360            |
| 200                   | 7.77         | –        | 12.6                         | 39.8              | –              | –              |
| 300                   | 7.74         | 205      | 12.9                         | 38.5              | –              | 425            |
| 400                   | 7.7          | 195      | 13.9                         | 37.3              | –              | 523            |
| 500                   | 7.66         | 186      | 14.4                         | –                 | –              | 628            |
| 600                   | –            | –        | 14.6                         | –                 | –              | –              |

| CONDITION · DIMENSION | 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 | G<br>GPa |
|-----------------------|----------|------------------------------|-------------------|----------------|----------------|----------|
| 20                    | 210      | –                            | –                 | 461            | 180            | 81       |
| 100                   | 205      | 12.3                         | 40.61             | –              | –              | 79       |
| 200                   | –        | 12.6                         | –                 | –              | –              | –        |
| 300                   | 185      | –                            | 38.52             | –              | –              | 71       |
| 400                   | –        | 13.9                         | 37.26             | –              | –              | –        |
| 600                   | –        | 14.6                         | –                 | –              | –              | –        |

| PROPERTY                 | VALUE | UNIT  |
|--------------------------|-------|-------|
| Density                  | 7.74  | g/cm³ |
| Transformation point Ac1 | 755   | °C    |
| Transformation point Ac3 | 800   | °C    |
| Transformation point Ar3 | 750   | °C    |
| Transformation point Ar1 | 695   | °C    |

## Technological properties

| PROPERTY    | VALUE                | UNIT |
|-------------|----------------------|------|
| Weldability | limited weldability. |      |

| PROPERTY           | VALUE           | UNIT |
|--------------------|-----------------|------|
| Flake sensitivity  | predisposed     |      |
| Temper brittleness | not predisposed |      |

## Heat treatment

11 regimes

| STEP                                                  | TEMPERATURE            | MEDIUM |
|-------------------------------------------------------|------------------------|--------|
| Annealing                                             | Temperature not stated | —      |
| source joins the operations with + / procedural order |                        |        |
| Quenching                                             | Temperature not stated | —      |
| Normalizing                                           | Temperature not stated | —      |
| Tempering                                             | 500–600 °C             | Oil    |
| source joins the operations with + / procedural order |                        |        |
| Quenching                                             | Temperature not stated | —      |
| Tempering                                             | Temperature not stated | —      |
| source joins the operations with + / procedural order |                        |        |
| Quenching                                             | 880 °C                 | —      |
| Tempering                                             | 650 °C                 | —      |
| source joins the operations with + / procedural order |                        |        |
| Quenching                                             | Temperature not stated | —      |
| Tempering                                             | Temperature not stated | —      |
| source joins the operations with + / procedural order |                        |        |
| Annealing                                             | Temperature not stated | —      |
| Annealing                                             | Temperature not stated | —      |
| Tempering                                             | Temperature not stated | —      |
| Normalizing                                           | Temperature not stated | —      |
| Tempering                                             | Temperature not stated | —      |
| Spheroidize annealing                                 | Temperature not stated | —      |
| source joins the operations with + / procedural order |                        |        |
| Quenching                                             | 830–870 °C             | Oil    |
| Tempering                                             | 500–600 °C             | —      |
| source joins the operations with + / procedural order |                        |        |

| STEP                    | TEMPERATURE            | MEDIUM |
|-------------------------|------------------------|--------|
| Quenching               | 830–870 °C             | —      |
| Tempering               | 500–600 °C             | —      |
| Quenching and tempering | Temperature not stated | —      |
| Tempering               | 580 °C                 | —      |

## Designations across standards

159 designations · 12 documented as identical

| United States                | 24       | Russia / CIS                 | 12    |
|------------------------------|----------|------------------------------|-------|
| G41300                       | uns      | 30ChMNA                      | gost  |
| G41350 This grade's own name | uns      | 30KhM                        | gost  |
| G41370 This grade's own name | uns      | 30XM                         | gost  |
| H41350 This grade's own name | uns      | 30XM                         | gost  |
| H41370 This grade's own name | uns      | 35ChM                        | gost  |
| 4130                         | aisi-sae | 35KHM                        | gost  |
| 4135 This grade's own name   | aisi-sae | 35KHML                       | gost  |
| 4135 4137                    | aisi-sae | 35XM                         | gost  |
| 4135H This grade's own name  | aisi-sae | 35XM                         | gost  |
| 4137 This grade's own name   | aisi-sae | AS38KHGM                     | gost  |
| 4137 4135                    | aisi-sae | AC38XГМ                      | gost  |
| 4137H This grade's own name  | aisi-sae | сТ.35XM                      | gost  |
| G41300                       | aisi-sae |                              |       |
| G41350                       | aisi-sae | France                       | 11    |
| G41370                       | aisi-sae | 25CD4                        | afnor |
| H41350                       | aisi-sae | 25CD4FF                      | afnor |
| H41370                       | aisi-sae | 25CrMo4                      | afnor |
| J13045                       | aisi-sae | 30CD4                        | afnor |
| J13048                       | aisi-sae | 30CD4FF                      | afnor |
| J13345                       | aisi-sae | 34CD4                        | afnor |
| 4135                         | astm     | 34CD4FF                      | afnor |
| A322                         | astm     | 34CrMo4                      | afnor |
| A331                         | astm     | 34CrMo4RR                    | afnor |
| AMS 6352 F                   | astm     | 35CD4                        | afnor |
|                              |          | 38CD4                        | afnor |
| Spain                        | 12       |                              |       |
| 25CrMo4                      | une      | United Kingdom               | 10    |
| 34CrMo4                      | une      | 1717COS110                   | bs    |
| 35CrMo4                      | une      | 19B                          | bs    |
| 35CrMo4DF                    | une      | 25CrMo4                      | bs    |
| AM25CrMo4                    | une      | 34CrMo4                      | bs    |
| AM26CrMo4                    | une      | 708A25                       | bs    |
| AM34CrMo4                    | une      | 708A30                       | bs    |
| F.1250                       | une      | 708A37                       | bs    |
| F.1254                       | une      | 708M32                       | bs    |
| F.222                        | une      | 738M32 This grade's own name | bs    |
| F.8231                       | une      | EN19B                        | bs    |
| F.8331                       | une      |                              |       |

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|               |     |   |                         |                       |        |
|---------------|-----|---|-------------------------|-----------------------|--------|
| Hungary       |     | 4 | Europe                  |                       | 2      |
| 25CrMo4       | msz |   | 1.7220                  |                       | din-en |
| 34CrMo4       | msz |   | 34CrMo4                 | This grade's own name | din-en |
| CMo 3         | msz |   | Australia / New Zealand |                       | 2      |
| CMo3Z         | msz |   | 4130                    |                       | as-nzs |
| International |     | 3 | 4130H                   |                       | as-nzs |
| 34CrMo4       | iso |   | Austria                 |                       | 2      |
| 34CrMo4E      | iso |   | BOHLERV330              |                       | onorm  |
| 34CrMoS4      | iso |   | BOHLERV340              |                       | onorm  |
| Finland       |     | 3 | Serbia                  |                       | 1      |
| 25CrMo4       | sfs |   | Č.4731                  |                       | srps   |
| G-25CrMo4     | sfs |   | Belgium                 |                       | 1      |
| G-34CrMo4     | sfs |   | 34CrMo4                 |                       | nbn    |

**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 H41350

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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