

1.4542 / 17.4 PH / 1.4542

**Chemical Properties**

| Element         | Chemical Composition % |
|-----------------|------------------------|
| Carbon (C)      | 0.00 - 0.07            |
| Silicon (Si)    | 0.00 - 1.00            |
| Manganese (Mn)  | 0.00 - 1.00            |
| Nickel (Ni)     | 3.00 - 5.00            |
| Chromium (Cr)   | 15.00 - 17.50          |
| Copper (Cu)     | 3.00 - 5.00            |
| Sulphur (S)     | 0.00 - 0.030           |
| Phosphorous (P) | 0.00 - 0.040           |
| Columbium (Cb)  | 0.15 - 0.45            |

**Heat Treatment & Mechanical Properties**

| Condition | Heat Treatment degc   | 0.2% Proof Stress (Mpa min) | UTS (Mpa min) | Elongation (%) | Reduction of Area % min | Hardness Brinell (HB) | Impact Toughness J min (Room temp) |
|-----------|-----------------------|-----------------------------|---------------|----------------|-------------------------|-----------------------|------------------------------------|
| A         | 1040 cool to below 32 | -                           | -             | -              | -                       | 363 max               | -                                  |
| H900      | +480 1hr              | 1170                        | 1310          | 10             | 40                      | 388 min               | -                                  |
| H925      | +495 4hrs             | 1070                        | 1170          | 10             | 44                      | 373 min               | 6.8                                |
| H1025     | +550 4hrs             | 1000                        | 1070          | 12             | 45                      | 331 min               | 20                                 |
| H1075     | +580 4hrs             | 860                         | 1000          | 13             | 45                      | 311 min               | 27                                 |
| H1100     | +595 4hrs             | 795                         | 965           | 14             | 45                      | 302 min               | 34                                 |
| H1150     | +620 4hrs             | 725                         | 930           | 16             | 50                      | 277 min               | 41                                 |
| H1150M    | +760 2hrs / +620 4hrs | 520                         | 795           | 18             | 55                      | 255 min               | 75                                 |
| H1150D    | +620 4hrs             | 725                         | 860           | 16             | 50                      | 255 min - 311 max     | 41                                 |

**Modulus of elasticity, GPa at**

| 20 degc (68degf) | 100 degc (210 degf) | 200 degc (390 degf) | 300 degc (570 degf) | 400 degc (750 degf) |
|------------------|---------------------|---------------------|---------------------|---------------------|
| 10.9 (6.1)       | 11.0 (6.1)          | 11.0 (6.1)          | 11.1 (6.2)          | 11.2 (6.2)          |

**Physical Properties**

| Property                             | Value                 | Unit                  |
|--------------------------------------|-----------------------|-----------------------|
| Density at 20°C (68 °F)              | 7.80                  | kg/dm <sup>3</sup>    |
| Thermal Conductivity at 20°C (68 °F) | 16.0                  | W/m.K                 |
| Specific Heat at 20°C (68°F)         | 500                   | J/kg.K                |
| Elastic Resistivity at 20°C (68°F)   | 0.71                  | Ohm.mm <sup>2/m</sup> |
| Modulus of elasticity at 20°C (68°F) | 200 x 10 <sup>3</sup> | 200 x 10 <sup>3</sup> |
| Magnetic Properties                  |                       | magnetic              |

**Thermal Expansion Coefficient between 20degc (68 degf) and temperature below 10<sup>-6</sup>/degc (10<sup>-6</sup>/degf)**

| 100 degc (210 degf) | 200 degc (390 degf) | 300 degc (570 degf) | 400 degc (750 degf) |
|---------------------|---------------------|---------------------|---------------------|
|---------------------|---------------------|---------------------|---------------------|

## Product Forms

### Round Bar

### Disclaimer

This data is indicative only and as such is not to be relied upon in place of the full specification. In particular, mechanical property requirements vary widely with temper, product and product dimensions. All information is based on our present knowledge and is given in good faith. No liability will be accepted by the Company in respect of any action taken by any third party in reliance thereon.

The information provided in this datasheet has been drawn from various recognised sources, including EN Standards, recognised industry references (printed & online) and manufacturers' data. No guarantee is given that the information is from the latest issue of those sources or about the accuracy of those sources.

Material supplied by the Company may vary significantly from this data, but will conform to all relevant and applicable standards.

As the products detailed may be used for a wide variety of purposes and as the Company has no control over their use; the Company specifically excludes all conditions or warranties expressed or implied by statute or otherwise as to dimensions, properties and/or fitness for any particular purpose, whether expressed or implied.

Advice given by the Company to any third party is given for that party's assistance only and without liability on the part of the Company. All transactions are subject to the Company's current Conditions of Sale. The extent of the Company's liabilities to any customer is clearly set out in those Conditions; a copy of which is available on request.