

# AMS 5629 - PH 13/8MO STAINLESS STEEL

## PH 13/8MO STAINLESS STEEL

PH 13/8 MO is a precipitation hardening stainless steel alloy that conforms to the AMS 5629, AMS 5864, AMS 5862 specifications.

This material is characterised by excellent strength, corrosion resistance, and toughness at both room and elevated temperatures.

PH 13/8 MO (UNS S13800) is often used in aerospace, chemical processing, and power generation applications where high strength and corrosion resistance are essential. The material is not particularly easy to work with due to its high strength and toughness, which can make cutting and machining difficult. However, with the proper equipment and techniques, it is possible to fabricate and form PH 13/8 MO into complex shapes and components.

It is a medium to high strength material achieved through appropriate ageing treatments (see table below) and contains very good resistance to stress corrosion. PH 13/8MO stainless steel is produced by Vacuum Induction Melting (VIM) followed by Vacuum Arc Remelting (VAR).

| Specific Gravity              |      |      |      |      |            |                        |            |                   |          |       |     |
|-------------------------------|------|------|------|------|------------|------------------------|------------|-------------------|----------|-------|-----|
| 7.76 g/cm <sup>3</sup>        |      |      |      |      |            |                        |            |                   |          |       |     |
| Typical Applications          |      |      |      |      |            | Related Specifications |            |                   |          |       |     |
| Fasteners                     |      |      |      |      |            | AMS 5629               |            |                   |          |       |     |
| Valves                        |      |      |      |      |            | AMS 5862               |            |                   |          |       |     |
| Fittings                      |      |      |      |      |            | UNS S13800             |            |                   |          |       |     |
| Petrochemical Components      |      |      |      |      |            | W.Nr 1.4534            |            |                   |          |       |     |
| Aircraft Structural parts     |      |      |      |      |            |                        |            |                   |          |       |     |
| Chemical Composition (Wt %)   |      |      |      |      |            |                        |            |                   |          |       |     |
|                               | C    | Si   | Mn   | P    | S          | Cr                     | Mo         | Ni                | Al       | N     | Fe  |
| Min                           | –    | –    | –    | –    | –          | 12.24                  | 2.00       | 7.50              | 0.90     | –     | Bal |
| Max                           | 0.05 | 0.10 | 0.10 | 0.01 | 0.008      | 13.25                  | 2.50       | 8.50              | 1.35     | 0.010 | –   |
| Typical Mechanical Properties |      |      |      |      |            |                        |            |                   |          |       |     |
|                               |      |      |      |      | 0.2% Proof | Tensile Strength       | Elongation | Reduction of area | Hardness |       |     |

|              | Stress |      |     |     |    |     |
|--------------|--------|------|-----|-----|----|-----|
|              | MPA    | MPA  | %   | %   |    | HRC |
|              | Min    | Min  | Min | Min |    | Min |
| <b>H950</b>  | 1413   | 1517 | 10  | 45  | 35 | 45  |
| <b>H1000</b> | 1310   | 1413 | 10  | 60  | 40 | 43  |
| <b>H1025</b> | 1207   | 1276 | 11  | 50  | 45 | 41  |
| <b>H1050</b> | 1138   | 1207 | 12  | 50  | 45 | 40  |
| <b>H1100</b> | 931    | 1034 | 14  | 50  | 50 | 34  |
| <b>H1150</b> | 621    | 931  | 14  | 50  | 50 | 30  |

\* This data has been supplied in good faith and is indicative only. It has been provided for general information purposes only and is not to be relied upon in place of the full specification. Mechanical properties can vary considerably with different supply conditions such as heat treatment or temper and product dimensions.

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