

**This page is mainly introduced the A 1049 S31803 Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of A 1049 S31803, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.**

## Datasheet for Steel Grades Specialsteel A 1049 S31803

### A 1049 S31803 Standard Number:

| ITEM | Standard Number       | Descriptions  |
|------|-----------------------|---|
| 1    | A 1049/A 1049M (2010) | Stainless Steel Forgings, Ferritic/Austenitic (Duplex), for Pressure Vessels and Related Components |

### A 1049 S31803 Chemical composition (mass fraction) (wt.%)

| Chemical |    | Min.(%) |    | Max.(%) |    |    |    |    |       |
|----------|----|---------|----|---------|----|----|----|----|-------|
| C        |    |         |    | 0.03    |    |    |    |    |       |
| Mn       |    |         |    | 2.00    |    |    |    |    |       |
| Si       |    |         |    | 1.00    |    |    |    |    |       |
| P        |    |         |    | 0.03    |    |    |    |    |       |
| S        |    |         |    | 0.02    |    |    |    |    |       |
| Cr       |    | 21.00   |    | 23.00   |    |    |    |    |       |
| Ni       |    | 4.50    |    | 6.50    |    |    |    |    |       |
| Mo       |    | 2.50    |    | 3.50    |    |    |    |    |       |
| N        |    | 0.08    |    | 0.20    |    |    |    |    |       |
| C        | Si | Mn      | P  | S       | Cr | Ni | Mo | V  | Ta    |
| W        | N  | Cu      | Co | Pb      | B  | Nb | Al | Ti | Other |
|          |    |         |    |         |    |    |    |    |       |

Stainless Steel Forgings, Ferritic/Austenitic (Duplex), for Pressure Vessels and Related

Components

### A 1049 S31803 Physical Properties

|                  |         |                          |
|------------------|---------|--------------------------|
| Tensile strength | 115-234 | $\sigma_b$ /MPa          |
| Yield Strength   | 23      | $\sigma_{0.2} \geq$ /MPa |
| Elongation       | 65      | $\delta_5 \geq$ (%)      |
| $\psi$           | -       | $\psi \geq$ (%)          |
| Akv              | -       | Akv $\geq$ /J            |
| HBS              | 123-321 | -                        |
| HRC              | 30      | -                        |

### A 1049 S31803 Mechanical Properties

|                  |         |                          |
|------------------|---------|--------------------------|
| Tensile strength | 231-231 | $\sigma_b$ /MPa          |
| Yield Strength   | 154     | $\sigma_{0.2} \geq$ /MPa |
| Elongation       | 56      | $\delta_5 \geq$ (%)      |
| $\psi$           | -       | $\psi \geq$ (%)          |
| Akv              | -       | Akv $\geq$ /J            |
| HBS              | 235-268 | -                        |
| HRC              | 30      | -                        |

### A 1049 S31803 Heat Treatment Regime

| Annealing | Quenching | Tempering | Normalizing | Q & T |
|-----------|-----------|-----------|-------------|-------|
| √         | √         | √         | √           | √     |

| A 1049 S31803 Range of products |  |                            |   |   |
|---------------------------------|--|----------------------------|---|---|
| Product type                    | Products                                 | Dimension                  | Processes                                   | Deliver Status  |
| Plates / Sheets                 | Plates / Sheets                          | 0.08-200mm(T)*W*L          | Forging, hot rolling and cold rolling       | Annealed, Solution and Aging, Q+T, ACID-WASHED, Shot Blasting |
| Steel Bar                       | Round Bar, Flat Bar, Square Bar          | Φ8-1200mm*L                | Forging, hot rolling and cold rolling, Cast | Black, Rough Turning, Shot Blasting,                          |
| Coil / Strip                    | Steel Coil /Steel Strip                  | 0.03-16.0x1200mm           | Cold-Rolled & Hot-Rolled                    | Annealed, Solution and Aging, Q+T, ACID-WASHED, Shot Blasting |
| Pipes / Tubes                   | Seamless Pipes/Tubes, Welded Pipes/Tubes | OD:6-219mm x WT:0.5-20.0mm | Hot extrusion, Cold Drawn, Welded           | Annealed, Solution and Aging, Q+T, ACID-WASHED                |

**We can produce Specialsteel the specifications follows:**