

This page is mainly introduced the A 959 S18235 Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of A 959 S18235, 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 959 S18235

### A 959 S18235 Standard Number:

| ITEM | Standard Number | Descriptions                                                                                      |
|------|-----------------|---------------------------------------------------------------------------------------------------|
| 1    | A 959 (2011)    | Standard Guide for Specifying Harmonized Standard Grade Compositions for Wrought Stainless Steels |

### A 959 S18235 Chemical composition (mass fraction) (wt.%)

| Chemical Composition of Cast Iron |    |    |         |    |    |    |         |    |       |  |
|-----------------------------------|----|----|---------|----|----|----|---------|----|-------|--|
| Chemical                          |    |    | Min.(%) |    |    |    | Max.(%) |    |       |  |
| C                                 |    |    |         |    |    |    | 0.025   |    |       |  |
| Mn                                |    |    |         |    |    |    | 0.50    |    |       |  |
| Si                                |    |    |         |    |    |    | 1.00    |    |       |  |
| P                                 |    |    |         |    |    |    | 0.03    |    |       |  |
| S                                 |    |    | 0.15    |    |    |    | 0.35    |    |       |  |
| Cr                                |    |    | 17.50   |    |    |    | 18.50   |    |       |  |
| Ni                                |    |    |         |    |    |    | 1.00    |    |       |  |
| Mo                                |    |    | 2.00    |    |    |    | 2.50    |    |       |  |
| Ti                                |    |    | 0.30    |    |    |    | 1.00    |    |       |  |
| N                                 |    |    |         |    |    |    | 0.025   |    |       |  |
| C                                 | Si | Mn | P       | S  | Cr | Ni | Mo      | V  | Ta    |  |
|                                   |    |    |         |    |    |    |         |    |       |  |
| W                                 | N  | Cu | Co      | Pb | B  | Nb | Al      | Ti | Other |  |
|                                   |    |    |         |    |    |    |         |    |       |  |

Standard Guide for Specifying Harmonized Standard Grade Compositions for Wrought Stainless Steels

## A 959 S18235 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 959 S18235 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 959 S18235 Heat Treatment Regime

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

## A 959 S18235 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                |

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