

**This page is mainly introduced the X2CrNiMo17-13-2 Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of X2CrNiMo17-13-2, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.**

## **Datasheet for Steel Grades Specialsteel X2CrNiMo17-13-2**

| X2CrNiMo17-13-2 Standard Number: |                       |                                                                                                                                                                                        |
|----------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ITEM                             | Standard Number       | Descriptions                                                                                                                                                                           |
| 1                                | DIN EN 10088-1        | Stainless steels - Part 1: List of stainless steels                                                                                                                                    |
| 2                                | DIN EN 10088-2        | Stainless steels - Part 2: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes                                                  |
| 3                                | DIN EN 10088-3        | Stainless steels - Part 3: Technical delivery conditions for semi-finished products, bars, rods, wire, sections and bright products of corrosion resisting steels for general purposes |
| 4                                | DIN EN 10088-4        | Stainless steels - Part 4: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for construction purposes                                             |
| 5                                | DIN EN 10028-7        | Flat products made of steels for pressure purposes - Part 7: Stainless steels                                                                                                          |
| 6                                | DIN EN 10088-5        | Stainless steels - Part 5: Technical delivery conditions for bars, rods, wire, sections and bright products of corrosion resisting steels for construction purposes                    |
| 7                                | DIN EN 10216-5 (2004) | Seamless steel tubes for pressure purposes - Technical delivery conditions - Part 5: Stainless steel tubes                                                                             |
| 8                                | DIN EN 10217-7        | Welded steel tubes for pressure purposes - Technical delivery conditions - Part 7: Stainless steel tubes                                                                               |
| 9                                | DIN EN 10250-4        | Open die steel forgings for general engineering purposes - Part 4: Stainless steels                                                                                                    |
| 10                               | DIN EN 10253-3        | Butt-welding pipe fittings - Part 3: Wrought austenitic and austenitic-ferritic (duplex) stainless steels without specific inspection requirements                                     |
| 11                               | DIN EN 10253-4        | Butt-welding pipe fittings - Part 4: Wrought austenitic and austenitic-ferritic (duplex) stainless steels with specific inspection requirements                                        |
| 12                               | DIN EN 10272          | Stainless steel bars for pressure purposes                                                                                                                                             |
| 13                               | DIN EN 10296-2 (2005) | Welded circular steel tubes for mechanical and general engineering purposes - Technical delivery conditions - Part 2: Stainless steel                                                  |
| 14                               | DIN EN 10297-2 (2005) | Seamless circular steel tubes for mechanical and general engineering purposes - Technical delivery conditions - Part 2: Stainless steel                                                |
| 15                               | DIN EN 10222-5        | Steel forgings for pressure purposes - Part 5: Martensitic, austenitic and austenitic-ferritic stainless steels                                                                        |
| 16                               | DIN EN 10263-5        | Steel rod, bars and steel wire for cold heading and cold extrusion - Part 5: Technical delivery conditions for stainless steels                                                        |
| 17                               | DIN EN 10264-4 (2002) | Steel wire and wire products - Steel wire for ropes - Part 4: Stainless steel wire                                                                                                     |
| 18                               | DIN EN 10269          | Steels and nickel alloys for fasteners with specified elevated and/or low                                                                                                              |

|    |                   | temperature properties                                                                                                                             |
|----|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| 19 | DIN EN 10270-3    | Steel wire for mechanical springs - Part 3: Stainless spring steel wire                                                                            |
| 20 | DIN 1654-5 (1989) | Cold heading and cold extruding steels; technical delivery conditions for stainless steels                                                         |
| 21 | DIN 17224 (1982)  | Stainless steel wire and strip for springs; technical delivery conditions                                                                          |
| 22 | DIN 17440 (2001)  | Stainless steels - Technical delivery conditions for drawn wire                                                                                    |
| 23 | DIN 17440 (1975)  | Stainless steels - Technical delivery conditions for drawn wire                                                                                    |
| 24 | DIN 17441 (1997)  | Stainless steels - Technical delivery conditions for cold rolled strips and slit coils strip and sheets cut from such strips for pressure purposes |
| 25 | DIN 17455 (1985)  | Welded circular tubes of stainless steels for general requirements; technical delivery conditions                                                  |
| 26 | DIN 17456 (1985)  | Seamless circular tubes of stainless steels for general requirements; technical delivery conditions                                                |
| 27 | DIN 17457 (1985)  | Welded circular tubes of austenitic stainless steels for special requirements; technical delivery conditions                                       |
| 28 | DIN 17458 (1985)  | Seamless circular tubes of austenitic stainless steels for special requirements; technical delivery conditions                                     |
| 29 | DIN 5512-3        | Materials for rail vehicles - Steels - Part 3: Stainless steel flat products; Selected standard                                                    |

### X2CrNiMo17-13-2 Chemical composition(mass fraction)(wt.%)

| Chemical |    |    | Min.(%) |    |    | Max.(%) |    |    |       |
|----------|----|----|---------|----|----|---------|----|----|-------|
| C        |    |    |         |    |    | 0.07    |    |    |       |
| Si       |    |    |         |    |    | 1.00    |    |    |       |
| Mn       |    |    |         |    |    | 2.00    |    |    |       |
| P        |    |    |         |    |    | 0.045   |    |    |       |
| S        |    |    |         |    |    | 0.015   |    |    |       |
| Cr       |    |    | 16.5    |    |    | 18.5    |    |    |       |
| Mo       |    |    | 2.00    |    |    | 2.50    |    |    |       |
| Ni       |    |    | 10.0    |    |    | 13.0    |    |    |       |
| N        |    |    |         |    |    | 0.11    |    |    |       |
| C        | Si | Mn | P       | S  | Cr | Ni      | Mo | V  | Ta    |
|          |    |    |         |    |    |         |    |    |       |
| W        | N  | Cu | Co      | Pb | B  | Nb      | Al | Ti | Other |
|          |    |    |         |    |    |         |    |    |       |

DIN 1654-5 (1989) Cold heading and cold extruding steels; technical delivery conditions for stainless steels; Replaced by DIN EN 10263-5:2002

### X2CrNiMo17-13-2 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      | -                        |

### X2CrNiMo17-13-2 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      | -                        |

### X2CrNiMo17-13-2 Heat Treatment Regime

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

### X2CrNiMo17-13-2 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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