

**This page is mainly introduced the 690 Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of 690, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.**

## Datasheet for Steel Grades High Alloy 690

| 690 Standard Number: |          |               |               |              |
|----------------------|----------|---------------|---------------|--------------|
| Area                 | Standard | Standard Code | Standard Year | Descriptions |
|                      |          |               |               |              |

| 690 Chemical composition (mass fraction) (wt.%) |          |          |             |
|---|----------|----------|-------------|
| Chemical  | Min. (%) | Max. (%) | Similar (%) |
|   |          |          |             |

| 690 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      | -                        |

| 690 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      | -                        |

### 690 Heat Treatment Regime

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

### 690 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 High Alloy the specifications follows:**