

ASTM B564 Inconel 601 Flange Specification

INCONEL® nickel-chromium-iron alloy 601 (UNS N06601/W.Nr. 2.4851) is a general-purpose engineering material for applications that require resistance to heat and corrosion. An outstanding characteristic of INCONEL alloy 601 is its resistance to high-temperature oxidation.

Standard: ASTM B564 / ASME SB564

Material: Inconel® 601 (UNS N06601)

Product: Forged Flanges (Weld Neck, Slip-On, Blind, Socket Weld, Lap Joint, Threaded, Reducing, etc.)

1. Material and Grade

- **Alloy Name:** Inconel 601
 - **UNS Number:** N06601
 - **Form:** Forged flanges, forged fittings, forged rings and discs.
 - **Standard Equivalent:** ASTM B564 / ASME SB564
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2. Chemical Composition (%)

Element	Content (%)
Nickel (Ni)	58.0 - 63.0
Chromium (Cr)	21.0 - 25.0
Aluminum (Al)	1.0 - 1.7
Iron (Fe)	Balance
Carbon (C)	≤ 0.10
Manganese (Mn)	≤ 1.0
Silicon (Si)	≤ 0.50
Sulfur (S)	≤ 0.015
Copper (Cu)	≤ 1.0

3. ASTM B564 Inconel 601 Flange

Mechanical Properties (at Room Temperature)

Property	Value
Tensile Strength	\geq 550 MPa (80 ksi)
Yield Strength (0.2% offset)	\geq 205 MPa (30 ksi)
Elongation	\geq 30 %
Hardness	\leq 90 HRB

4. ASTM B564 Inconel 601 Flange

Pressure-Temperature Ratings

- Flanges are manufactured in compliance with ASME B16.5, ASME B16.47, or MSS standards.
 - Pressure Classes: Class 150, 300, 600, 900, 1500, 2500.
 - Temperature Range: Up to 1200° C (2200° F), excellent resistance to oxidation and carburization.
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5. ASTM B564 Inconel 601 Flange

Heat Treatment

- **Solution Annealed** condition, usually at 1140 - 1200° C (2085 - 2190° F), followed by rapid cooling.
 - Ensures high corrosion resistance and mechanical strength.
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6. Available Flange Types

- **ASTM B564 Inconel 601** Weld Neck Flange (WN)
- Slip-On Flange (SO)
- Blind Flange (BLRF)
- Socket Weld Flange (SW)
- Lap Joint Flange (LJ)

- Threaded Flange (THRF)

