

# S143

Smiths Advanced Metals

Rev: SAM/datasheets/stainless-steel-bar/s143/feb-2022

Page: 1 of 1

## High Strength Stainless Steel Bar

Precipitation hardened stainless steel.

S143 is a precipitation hardening stainless steel and a BS aerospace-grade that combines moderate to good corrosion resistance and high mechanical strength in various applications.

The alloy offers moderate to good corrosion resistance in various atmospheres, which is similar to 300 series stainless steels. Welding and machinability of the alloy are not problematic. All S143 billets (where practical) are subjected to ultrasonic inspection in compliance with British Standards. As the material shares common chemical composition traits with S144 and S145, the alloy may be precipitation hardened using different temperature ranges to achieve the same mechanical properties of these materials. This material also offers similar property combinations when compared to 17/4PH.

S143 finds typical use in aerospace and defence engineering and high technology mechanical applications. We stock [S143 stainless steel bars](#) in the finally heat-treated condition as S143B (black bar), S143C (forgings) and S143D (bright bar).



### Grades / Specifications

- 1.4594
- FV520B
- UNS S45000
- X5CrNiMoCuNb14-5
- BS S100
- BS S143

### Benefits

- Good corrosion resistance
- Good toughness
- High strength

#### \* Chemical Composition (weight %)

	C	Mn	Si	S	P	Cr	Ni	Mo	Cu	Nb
min.						13.20	5.00	1.20	1.20	0.10
max.	0.07	1.00	0.60	0.025	0.035	14.70	5.80	2.00	2.00	0.40

\* As per BS S143

#### \* Mechanical Properties

Ultimate Tensile Strength	930 - 1,080 MPa
0.2% Proof Strength	780 MPa
Elongation	15%
Hardness	277 - 341 HB
Izod Impact	40 ft lbf

\* Properties as per BS S143 (Longitudinal)

### Billeting Services

We provide an [ISO 9001:2015](#) approved in-house rod blanking service to process your bars to your engineering requirements. Our facility process more than 2 million billets every year, and due to this volume, we can offer our customers cutting cost efficiencies, which makes us highly competitive.

[www.smithsadvanced.com](http://www.smithsadvanced.com)

[info@smithsadvanced.com](mailto:info@smithsadvanced.com)



Stratton Business Park,  
London Road, Biggleswade,  
Bedfordshire SG18 8QB  
Tel: **+44 (0) 1767 604710**

