Advance Materials Supplies
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Data Sheet

Alloy 303

Quick Facts

Alloy 303 is an austenitic stainless steel developed for applications requiring extensive machining operations. The alloy has a sulfur addition which assists in breaking up turnings while reducing drag on the cutting tool when compared to the machining characteristics of the conventional stainless steels.
The alloy is nonmagnetic in the annealed condition, but may become slightly magnetic as a result of cold working. The addition of sulfur negatively impacts the corrosion resistance of 303 making it less resistant than 304 to mildly corrosive environments

Typical Applications

- Aerospace parts,
- Fittings,
- Valve and pump parts,
- Screws and other machine parts,

Supply Range

We stock a comprehensive range of round bars (various condition), we would be able to supply sizes between 14mm and 280mmmm in diameter
Flat Bars with a thickness between 8mm – 118mm and a width with max. 250mm.
We are offering as well:
General forgings
Rings
Blocks
Primarily manufactured in: Europe, US
Primarily manufactured in: Europe, US

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Industry Specifications

- EN/DIN 1.4305
- UNS S30300
- ASTM A895
- Material may also be supplied against Customer specifications, subject to enquiry.

Chemical Analysis %

	Cr	Ni	C	Mn	P	S	Si	Cu	Ni	Fe
Min	17.00	8.00	-	-	-	0.15	-	-	-	Bal.
Max	19.00	10.00	0.10	2.00	0.20	0.35	1.00	1.00	0.11	Bal.

Mechanical Properties

Condition	0.2% Offset, Yield Strength (MPa)	Tensile Strength (MPa)	Elongation in 2 in. (%)	Reduction of Area (%)	Hardness (HBN)	Charpy V-Notch Impact Strength (ft-lb)
Min.	310	586	50	-	202	-
Max.	-	-	-	-	-	-

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Machinability

Alloy 303 was developed specifically for ease of machining. The sulfur addition assists in breaking up turnings which reduces drag on the cutting tool. It produces small brittle chips and may be machined at high speeds with deep cuts and heavy feeds.

Heat Treatment

Annealing

- Heat to a minimum temperature of 1900°F (1038°C) and water quench or rapid cool by other means.

Hardening

- Alloy 303 cannot be hardened by thermal treatment, it can only be hardened by cold working.

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