AMS 5629 (13/8 PH VAR)

Technical Datasheet

Precipitation Hardening Stainless Steel Bar Service. Quality. Value.

Typical Applications

AMS 5629 is ideal for applications where very high strength and toughness are required. This alloy is also used when good general / stress corrosion cracking resistance and minimal property directionality are needed. Applications include aircraft structural parts, landing gear components, shafts, valves, fittings and fasteners. Also used for components in the petrochemical industry.

Product Description

13/8 PH VAR is in a family of martensitic precipitation hardening stainless steel along with 17/4 PH and 15/5 PH. It is produced as a consumable electrode, vacuum arc re-melted product offering excellent transverse toughness and ductility even in large section. High strength is developed by a simple low-temperature heat treatment. The various 'H' conditions in the table below indicate the property combination achieved by heat treatment at the temperature shown in degrees F. Due to the chemical composition and controlled melting practice, 13/8 VAR has an essentially ferrite-free microstructure. This material has a typical density of 7.8kg/dm³.

Machinability

Average cutting speed 80ft/min. 35-40% average (based on 100% for AISI 1212 steel). Alloy is similar to 17/4 PH.

Corrosion Resistance

Superior to straight chromium grades like 410, approaching corrosion resistance of the chromium nickel grades. In many corrosive media it is equal to such grades as 302. Corrosion resisting properties will be affected by surface finish and aging heat treatment.

Weldability

Excellent and is readily weldable by all commercial processes.

Production Tolerances

Manufacturing limits are as stated in the Table AMS 2241. For further assistance please contact our Sales Dept. / Laboratory.

Related Specifications

• ASTM SA-564 • UNS S13800

Chemical Composition (weight %)

Weight (%)	C	Mn	P	S	Si	Cr	Ni	Mo	Al	N
Min						12.25	7.5	2.00	0.90	
Max	0.05	0.10	0.010	0.008	0.10	13.25	8.5	2.50	1.35	0.01

Minimum Mechanical Properties

Condition	Tensile Strength (MPa)	0.2% Proof Stress(MPa)	Elongation on 4D G.L. (%)	Hardness (HB)
H950	1,517	1,413	10	45
H1000	1,413	1,310	10	43
H1025	1,276	1,207	11	41
H1050	1,207	1,138	12	40
H1100	1,034	931	14	34
H1150	931	621	14	30

Technical Assistance

Our knowledgeable staff backed up by our resident team of qualified metallurgists and engineers, will be pleased to assist further on any technical topic.

UK Service Centres:

Smiths Belfast	02895 908 897	Smiths Leeds	0113 307 5167
Smiths Biggleswade	01767 604 704	Smiths Manchester	0161 794 8650
Smiths Birmingham	0121 728 4940	Smiths Norwich	01603 789 878
Smiths Bristol	0117 971 2800	Smiths Nottingham	0115 925 4801
Smiths Chelmsford	01245 466 664	Smiths Redruth	01209 315 512
Smiths Gateshead	0191 469 5428	Smiths Verwood	01202 824 347
Smiths Horsham	01403 261 981	Main Office	0845 527 3331

Quality & Testing:

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