



钢铁之家

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全球钢号百科!

Global Steel Grade Encyclopedia



涵盖的行业或国家与地区类别



国际材料与试验协会

GJB

国家军用标准



动力机械工程师协会

EU

前欧洲标准化

AISI

美国钢铁学会



德国工业标准

AMS

航空航天材料规范



国际标准

JASO

日本汽车标准组织

EN

欧洲标准

JB

中国机械行业标准

UNS

统一编号系统

UNI

意大利标准



美国机械工程师协会

SS

瑞典标准



国家标准



日本工业标准

13-8 PH / 1.4534

13-8 PH is a martensitic precipitation-hardening stainless steel. This alloy is double melted in a Vacuum Induction Furnace followed by Consumable Electrode Vacuum Melt (VIM-VAR); or in some instances the 2nd melt is by Electro slag Re-melting (ESR) as specified by the consumer. This Alloy exhibits excellent strength, high hardness, superior toughness, combined with good corrosion resistance. Good transverse toughness properties are achieved by tight chemical composition control, low carbon content, and vacuum melting. 13-8 PH steel provides a wide range of properties through a single precipitation hardening heat treatment.

This Alloy can be welded providing the use of an inert gas shielding ,Helium is preferred. Corrosion resistance is similar to 304 Stainless, with the greatest resistance in the fully hardened conditions.

Gehe zu



Main fields of application of 1.4534

Applications include aircraft structural parts, landing gear components, shafts, valves, fittings and fasteners. Also used for components in the petrochemical industry.

Chemical composition of 1.4534

Cr	12,25 - 13,25	Si	≤ 0,10
Ni	7,5-8,5	Mn	0,10
Al	0,8-1,35	P	0,01
C	≤ 0,05	S	0,008
Mo	2,00-2,50	N	0,010
Ti	0,10		

Heat treatment

The key properties of Precipitation Hardened steels comes from the heat treatments , below is a short table showing the types of mechanical results obtainable through heat treatment.

Mechanical Properties

Condition	Tensile	0.2% Yield	Elongation	Reduction of area	Hardness Brinell	Hardness Rockwell
H950	175.000	205.000	10	45	363	C45 min
H1000	220.000	190.000	10	50		C45 min
H1025	205.000	175.000	11	50		
H1050	185.000	165.000	12	50		C40 min
H1100	150.000	135.000	14	50		C34 min
H1150	135.000	90.000	14	50		C30 min

Alloy 13-8PH Precipitation Hardening Alloy is produced in the annealed condition. This is also referred to the solution heat treated condition, or Condition A. Solution treat from 1675 to 1725°F (910 to 940°C) for 15 to 30 minutes at temperature. Air cool or oil quench to below 60°F (15°C) to effect complete transformation to martensitic. Aging is normally carried out from 950 to 1150°F(510 to 620°C), depending upon the desired final properties. Heat treatment is usually performed in air. Reducing atmospheres should not be used because of the potential for hydrogen contamination.

Delivery program

Hempel Special Metals are able to supply this grade in many of the conditions in the following forms :

Bars, Tubes, Sheet and Plate

Material Outlet by Hempel

ECONOXX.com offers buyers a new and uncomplicated procurement channel, which also includes small quantities and materials in special alloys at favourable conditions.