部分牌号化学成份
Chemical Composition of Some Steels

序号 No.	牌号 Grade	化学成份（%） Chemical Composition C	Si	Mn	S	P	Cr	Ni	Mo	Nb	W	Ti	Co	其它 Other	相当国外牌号 Equivalent Foreign Grade
1	YDA24-7N(Re	0.30 0.40	1.30 2.00	0.80 1.50	≤ 0.03	≤ 0.03	23.0 26.0	7.0 9.0						N.Re 0.3	
2	YDA18-8	0.06 0.12	0.60 1.50	0.80 2.00	≤ 0.03	≤ 0.030	17.0 20.0	8.0 11.0				0.5 0.7			304H、1.4308
3	YDA18-12-Mo2	0.06 0.10	0.60 1.50	0.80 1.50	≤ 0.03	≤ 0.03	17.0 20.0	10.0 13.0	2.00 3.00						TP316H,1.4437
4	YDA-20-10	0.25 0.35	0.80 2.00	0.60 1.50	≤ 0.03	≤ 0.03	19.0 23.0	9.0 12.0	≤ 0.50						HF、SCH12,1.4826
5	YDA22-14-Mo	0.30 0.50	0.80 1.40	0.80 1.40	≤ 0.03	≤ 0.03	21.0 23.0	13.0 15.0	1.0 2.0						1.4832、SCH13
6	YDA2520	0.30 0.50	0.60 1.75	0.60 1.50	≤ 0.03	≤ 0.03	23.0 27.0	19.0 22.0	≤ 0.50						HK40.1.4848. SCH22
7	YDA2032NbM	0.10 0.20	0.60 1.25	0.60 1.50	≤ 0.03	≤ 0.03	19.0 23.0	30.0 35.0	≤ 0.50	1.0 1.8				微量 Micro	Incoloy800H,1.4859
8	YDA2535NbM	0.30 0.60	0.60 2.00	0.60 2.00	≤ 0.03	≤ 0.03	24.0 27.0	33.0 37.0	≤ 0.50	0.6 1.50				微量 Micro	HP-Nb.XM.1.4852
9	YDA26-36-W5Co15M	0.30 0.60	0.70 1.60	0.10 0.70	≤ 0.03	≤ 0.03	24.0 27.0	34.0 37.0	≤ 0.50		4.0 6.0		13.0 17.0	微量 Micro	KHR35W、TAH33
10	YDA35-45NbM	0.30 0.60	≤ 2.00	≤ 2.00	≤ 0.02	≤ 0.02	35.0 37.0	43.0 48.0	≤ 0.50	0.8 1.5				微量 Micro	XTM.KHR45A
11	YDA28-48-W5M	0.30 0.60	0.80 2.00	0.60 1.50	≤ 0.03	≤ 0.03	27.0 30.0	47.0 50.0			4.0 6.0			微量 Micro	KHR48N、NA22H
12	YDA27-37-W	0.30 0.60	≤ 1.50	≤ 1.30	≤ 0.03	≤ 0.03	25.0 28.0	35.0 38.0	≤ 0.50		1.00 2.00				SCH24、MoRE-1
13	YDA34-50-W15	≤ 0.50	≤ 0.50	≤ 0.50	≤ 0.03	≤ 0.03	32.0 36.0	48.0 52.0	≤ 0.50		14.0 17.0				MoRE-2、TAH39
14	YDA20-60-Mo2	0.25 0.35	≤ 1.40	≤ 1.40	≤ 0.03	≤ 0.03	19.0 22.0	59.0 61.0	2.00 3.00						
15	YDA25-58-M	0.30 0.50	≤ 1.50	≤ 1.50	≤ 0.03	≤ 0.03	28.0 30.0	58.0 60.0						微量 Micro	Incoloy690
		0.30	≤	≤	≤	≤	27.0	18.0		1.0	3.0		18.0		

部分牌号物理性能
Physical Property of Some Steels

序号 No.	牌号 Grade	常温机械性能 Normal Temperature Mechanical Property σ_b (Mpa)	σ_s (Mpa)	δ_5 (%)	高温短时性能 High Temperature Short Time Property T (℃)	σ_b (Mpa)	δ_5 (%)	高温持久性能 High Temperature Long Lasting Property TC (℃)	σ_b (Mpa)	破断时间 Breaking Time ≥(h)	备注 Note
1	YDA24-7N(Re)	≥450	≥250	10 8	871	114	≥6	871	60	25	
2	YDA18-8	≥450	≥200	25 15							
3	YDA18-12-Mo2	≥500	≥220	30 20							
4	YDA-20-10	≥490	≥235	25 10	871	99-9	9	871	69	6	
5	YDA22-14-Mo	≥490	≥235	8 5	871	138	10	871	55	13	
6	YDA2520	≥450	≥245	10 8	982	61	15	982	48	11	
7	YDA2032NbM	≥450	≥185	30 25	900	86	25	900	40	100	
8	YDA2535NbM	≥450	≥250	8 6	900 1100	175 83	28 45	982 1050	42 25	25 100	
9	DY26-36W5Co15M	≥490	≥315	≥5	982 1050	118 64	25 28	982 1100	41 22	100 31	
10	YDA35-45NbM	≥450	≥245	5 3	1050	61	36	1050	25	100	
11	YDA28-48-W5M	≥450	≥240	5 3	900 1050	108 61	30 30	1000	25	100	
12	YDA27-37-W	≥450	≥216	8 5	1000	130	25	1050	24	100	
13	YDA34-50-W15	≥590	≥300	10 6	982 1090	118 63	30 45	1050	17	100	
14	YDA20-60-Mo2	≥450	≥250	≥6							
15	YDA25-58-M	≥450	≥250	12 8	900	150	25	900	46	100	

中国耐热钢钢号

钢号	化学成分（%） C	Mn	Si	Cr	Ni	Mo	Cu	Al	N	P	S
ZG40Cr9Si2	0.35~0.5	≤0.7	2.0~3.0	8.0~10.0	—	—	—	—	—	≤0.035	≤0.03
ZG30Cr18Mn12Si2N	0.26~0.36	11.0~13.0	1.6~2.4	17.0~20.0	—	—	—	—	0.22~0.28	≤0.06	≤0.04
ZG35Cr24Ni7SiN	0.3~0.4	0.8~1.5	1.3~2.0	23.0~25.5	7.0~8.5	—	—	—	0.2~0.28	≤0.04	≤0.03
ZG30Cr26Ni5	0.2~0.4	≤1.0	≤2.0	24.0~28.0	4.0~6.0	≤0.5	—	—	—	≤0.04	≤0.04
ZG30Cr20Ni10	0.2~0.4	≤2.0	≤2.0	18.0~23.0	8.0~12.0	≤0.5	—	—	—	≤0.04	≤0.04
ZG35Cr26Ni12	0.2~0.5	≤2.0	≤2.0	24.0~28.0	11.0~14.0	—	—	—	—	≤0.04	≤0.04
ZG40Cr28Ni16	0.2~0.5	≤2.0	≤2.0	26.0~30.0	14.0~18.0	≤0.5	—	—	—	≤0.04	≤0.04
ZG40Cr25Ni20	0.35~0.45	≤1.5	≤1.75	23.0~27.0	19.0~22.0	≤0.5	—	—	—	≤0.04	≤0.04
ZG40Cr30Ni20	0.2~0.6	≤2.0	≤2.0	28.0~32.0	18.0~22.0	≤0.5	—	—	—	≤0.04	≤0.04
ZG35Ni24Cr18Si2	0.3~0.4	≤1.5	1.5~2.5	17.0~20.0	23.0~26.0	—	—	—	—	≤0.035	≤0.03
ZG30Ni35Cr15	0.2~0.35	≤2.0	≤2.5	13.0~17.0	33.0~37.0	—	—	—	—	≤0.04	≤0.04
ZG45Ni35Cr26	0.35~0.75	≤2.0	≤2.0	24.0~28.0	33.0~37.0	≤0.5	—	—	—	≤0.04	≤0.04
ZG10Cr18Mn13Mo2CuN	≤0.12	12.0~14.0	≤1.5	17.0~19.0	—	1.5~2.0	1.0~1.5	—	0.2~0.3	≤0.06	≤0.035
ZG10Cr17Mn9Ni3Mo3Cu2N	≤0.12	0.8~11.0	≤1.5	16.0~18.0	3.0~4.0	3.0~3.5	2.0~2.5	—	0.18~0.26	≤0.06	≤0.035
ZG50Mn16Al13	0.55~0.65	15.5~16.5	2.0~2.5	—	—	—	—	2.7~3.0	—	≤0.05	≤0.035

德国耐热钢钢号

钢号	材料号	化学成分（%）								
		C	Si	Mn	P≤	S≤	Cr	Ni	Mo	其他
GX30CrSi7	1.4710	0.2~0.35	1.0~2.5	0.5~1.5	0.035	0.03	6.0~8.0	≤0.5	≤0.15	—
GX40CrSi13	1.4729	0.3~0.5	1.0~2.5	≤1.0	0.04	0.03	12.0~14.0	≤1.0	≤0.5	—
GX40CrSi17	1.4740	0.3~0.5	1.0~2.5	≤1.0	0.04	0.03	16.0~19.0	≤1.0	≤0.5	—
GX40CrSi24	1.4745	0.3~0.5	1.0~2.5	≤1.0	0.04	0.03	23.0~26.0	≤1.0	≤0.5	—
GX40CrSi28	1.4776	0.3~0.5	1.0~2.5	≤1.0	0.04	0.03	27.0~30.0	≤1.0	≤0.5	—
GX130CrSi29	1.4777	1.2~1.4	1.0~2.5	0.5~1.0	0.035	0.03	27.0~30.0	≤1.0	≤0.5	—
GX160CrSi18	1.4743	1.4~1.8	1.0~2.5	≤1.0	0.04	0.03	17.0~19.0	≤1.0	≤0.5	—
GX25CrNiSi18-9	1.4825	0.15~0.35	0.5~2.5	≤2.0	0.04	0.03	17.0~19.0	8.0~10.0	≤0.5	—
GX25CrNiSi20-14	1.4832	0.15~0.35	0.5~2.5	≤2.0	0.04	0.03	19.0~21.0	13.0~15.0	≤0.5	—
GX40CrNiSi22-10	1.4826	0.3~0.5	1.0~2.5	≤2.0	0.04	0.03	21.0~23.0	9.0~11.0	≤0.5	—
GX40CrNiSi25-12	1.4837	0.3~0.5	1.0~2.5	≤2.0	0.04	0.03	24.0~27.0	11.0~14.0	≤0.5	—
GX40CrNiSi25-20	1.4848	0.3~0.5	1.0~2.5	≤2.0	0.04	0.03	24.0~27.0	19.0~22.0	≤0.5	—
GX40CrNiSi27-4	1.4823	0.3~0.5	1.0~2.5	≤1.5	0.04	0.03	25.0~28.0	3.0~6.0	≤0.5	—
GX40NiCrNb45-35	1.4889	0.35~0.45	1.5~2.0	1.0~1.5	0.04	0.03	32.5~37.5	42.0~46.0	—	Nb1.5~2.0
GX35NiCrSi25-21	1.4805	0.2~2.5	1.0~2.5	≤2.0	0.04	0.03	19.0~23.0	23.0~27.0	≤0.5	—
GX40NiCrSi35-17	1.4806	0.3~0.5	1.0~2.5	≤2.0	0.04	0.03	16.0~18.0	34.0~36.0	≤0.5	—
GX40NiCrSi35-26	1.4857	0.3~0.5	1.0~2.5	≤2.0	0.04	0.03	24.0~27.0	33.0~36.0	≤0.5	—
GX40NiCrSi38-19	1.4865	0.3~0.5	1.0~2.5	≤2.0	0.04	0.03	18.0~21.0	36.0~39.0	≤0.5	—
GX10NiCrSiNb32-20	1.4859	0.05~0.15	1.0~2.5	≤2.0	0.04	0.03	19.0~21.0	31.0~33.0	≤0.5	Nb0.5~1.5
GX40CrNiSiNb24-24	1.4855	0.3~0.5	1.0~2.5	≤2.0	0.04	0.03	23.0~25.0	23.0~25.0	≤0.5	Nb0.8~1.8
GX40NiCrSiNb35-18	1.4807	0.3~0.5	1.0~2.5	≤2.0	0.04	0.03	17.0~20.0	34.0~36.0	≤0.5	Nb1.0~1.8
GX40NiCrSiNb35-26	1.4852	0.3~0.5	1.0~2.5	≤2.0	0.04	0.03	24.0~27.0	33.0~36.0	≤0.5	Nb0.8~1.8
GX40NiCrSiNb38-19	1.4849	0.3~0.5	1.0~2.5	≤2.0	0.04	0.03	18.0~21.0	36.0~39.0	≤0.5	Nb1.2~1.8
GX50NiCrCo20-20-20	1.4874	0.35~0.65	≤1.0	≤2.0	0.04	0.03	19.0~22.0	18.0~22.0	2.5~3.0	Nb1.5~2.0
GX50NiCrCoW35-25-15-5	1.4869	0.45~0.55	1.0~2.0	≤1.0	0.04	0.03	24.0~26.0	32.0~37.0	—	Co14.0~16.0 W4.0~6.0
G-NiCr15	2.4815	0.35~0.65	1.0~2.5	≤2.0	0.04	0.03	12.0~18.0	58.0~66.0	≤1.0	Fe余量
G-NiCr28W	2.4879	0.35~0.55	1.0~2.0	≤1.5	0.04	0.03	27.0~30.0	47.0~50.0	≤0.5	W4.0~6.0 Fe余量
G-NiCr50Nb	2.4680	≤0.1	≤1.0	≤0.05	0.02	0.02	48.0~52.0	余量	≤0.5	Nb1.0~1.8 Fe≤1.0；N≤0.16
G-CoCr28	2.4778	0.05~0.25	0.5~1.5	≤1.5	0.04	0.03	27.0~30.0	≤4.0	≤0.5	Co48.0~52.0 Nb≤0.5；Fe余量

美国耐热钢钢号

牌号		类型	化学成分（%）							
ASTM	UNS		C	Si	Mn	P≤	S≤	Cr	Ni	Mo
HF	J92603	19Cr-9Ni	0.2~0.4	≤2.0	≤2.0	≤0.04	≤0.04	18.0~23.0	8.0~12.0	≤0.5
HH	J93503	25Cr-12Ni	0.2~0.5	≤2.0	≤2.0	≤0.04	≤0.04	24.0~28.0	11.0~14.0	≤0.5
HI	J94003	28Cr-15Ni	0.2~0.5	≤2.0	≤2.0	≤0.04	≤0.04	26.0~30.0	14.0~18.0	≤0.5
HK	J94224	25Cr-20Ni	0.2~0.6	≤2.0	≤2.0	≤0.04	≤0.04	24.0~28.0	18.0~22.0	≤0.5
HE	J93403	29Cr-9Ni	0.2~0.5	≤2.0	≤2.0	≤0.04	≤0.04	26.0~30.0	8.0~11.0	≤0.5
HT	J94605	17Cr-35Ni	0.35~0.75	≤2.5	≤2.0	≤0.04	≤0.04	15.0~19.0	33.0~37.0	≤0.5
HU	J95405	19Cr-39Ni	0.35~0.75	≤2.5	≤2.0	≤0.04	≤0.04	17.0~21.0	37.0~41.0	≤0.5
HW	—	12Cr-60Ni	0.35~0.75	≤2.5	≤2.0	≤0.04	≤0.04	10.0~14.0	58.0~62.0	≤0.5
HX	—	17Cr-60Ni	0.35~0.75	≤2.5	≤2.0	≤0.04	≤0.04	15.0~19.0	64.0~68.0	≤0.5
HC	J92605	28Cr	≤0.5	≤2.0	≤1.0	≤0.04	≤0.04	26.0~30.0	≤4.0	≤0.5
HD	J93005	28Cr-5Ni	≤0.5	≤2.0	≤1.5	≤0.04	≤0.04	26.0~30.0	4.0~7.0	≤0.5
HL	J94604	29Cr-20Ni	0.2~0.6	≤2.0	≤2.0	≤0.04	≤0.04	28.0~32.0	18.0~22.0	≤0.5
HN	J94213	20Cr-25Ni	0.2~0.5	≤2.0	≤2.0	≤0.04	≤0.04	19.0~23.0	23.0~27.0	≤0.5
HP	J95705	26Cr-35Ni	0.35~0.75	≤2.0	≤2.0	≤0.04	≤0.04	24.0~28.0	33.0~37.0	≤0.5

日本耐热钢钢号

钢号	化学成分（%）								
	C	Si	Mn	P≤	S≤	Cr	Ni	Mo	其他
SCH1	0.2~0.4	1.5~3.0	≤1.0	0.04	0.04	12.0~15.0	≤1.0	(≤0.5)	—
SCH1X	0.3~0.5	1.0~2.5	0.5~1.0	0.04	0.03	12.0~14.0	≤1.0	(≤0.5)	—
SCH2	≤0.4	≤2.0	≤1.0	0.04	0.04	15.0~28.0	≤1.0	(≤0.5)	—
SCH2X1	0.3~0.5	1.0~2.5	0.5~1.0	0.04	0.03	23.0~26.0	≤1.0	(≤0.5)	—
SCH2X2	0.3~0.5	1.0~2.5	0.5~1.0	0.04	0.03	27.0~30.0	≤1.0	(≤0.5)	—
SCH3	≤0.4	≤2.0	≤1.0	0.04	0.04	12.0~15.0	≤1.0	(≤0.5)	—
SCH4	0.2~0.35	1.0~2.5	0.5~1.0	0.04	0.04	6.8~8.0	≤0.5	(≤0.5)	—
SCH5	0.3~0.5	1.0~2.5	0.5~1.0	0.04	0.03	16.0~19.0	≤1.0	(≤0.5)	—
SCH6	1.2~1.4	1.0~2.5	0.5~1.0	0.04	0.03	27.0~30.0	≤1.0	(≤0.5)	—
SCH11	≤0.4	≤2.0	≤1.0	0.04	0.04	24.0~28.0	4.0~6.0	(≤0.5)	
SCH11X	0.3~0.5	1.0~2.5	≤1.5	0.04	0.03	25.0~28.0	3.0~6.0	(≤0.5)	—
SCH12	0.2~0.4	≤2.0	≤2.0	0.04	0.04	18.0~23.0	8.0~12.0	(≤0.5)	—
SCH13	0.2~0.5	≤2.0	≤2.0	0.04	0.04	24.0~28.0	11.0~14.0	(≤0.5)	(N≤0.2)
SCH13A	0.25~0.5	≤1.75	≤2.5	0.04	0.04	23.0~26.0	12.0~14.0	(≤0.5)	(N≤0.2)
SCH13X	0.3~0.5	1.0~2.5	≤2.0	0.04	0.03	24.0~27.0	11.0~14.0	(≤0.5)	—
SCH15	0.35~0.7	≤2.5	≤2.0	0.04	0.04	15.0~19.0	33.0~37.0	(≤0.5)	—
SCH15X	0.3~0.5	1.0~2.5	≤2.0	0.04	0.03	16.0~18.0	34.0~36.0	(≤0.5)	—
SCH16	0.2~0.35	≤2.5	≤2.0	0.04	0.04	13.0~17.0	33.0~37.0	(≤0.5)	—
SCH17	0.2~0.5	≤2.0	≤2.0	0.04	0.04	26.0~30.0	8.0~11.0	(≤0.5)	—
SCH18	0.2~0.5	≤2.0	≤2.0	0.04	0.04	26.0~30.0	14.0~18.0	(≤0.5)	—
SCH19	0.2~0.5	≤2.0	≤2.0	0.04	0.04	19.0~23.0	23.0~27.0	(≤0.5)	—
SCH20	0.35~0.75	≤2.5	≤2.0	0.04	0.04	17.0~21.0	37.0~41.0	(≤0.5)	—
SCH20X	0.3~0.5	1.0~2.5	≤2.0	0.04	0.03	18.0~21.0	36.0~39.0	(≤0.5)	—
SCH20XNb	0.3~0.5	1.0~2.5	≤2.0	0.04	0.03	18.0~21.0	36.0~39.0	(≤0.5)	Nb1.2~1.8
SCH21	0.25~0.35	≤1.75	≤1.5	0.04	0.04	23.0~27.0	19.0~22.0	(≤0.5)	(N≤0.2)
SCH22	0.35~0.45	≤1.75	≤1.5	0.04	0.04	23.0~27.0	19.0~22.0	(≤0.5)	(N≤0.2)
SCH22X	0.3~0.5	1.0~2.5	≤2.0	0.04	0.03	24.0~27.0	19.0~22.0	(≤0.5)	—
SCH23	0.2~0.6	≤2.0	≤2.0	0.04	0.04	28.0~32.0	18.0~22.0	(≤0.5)	—
SCH24	0.35~0.75	≤2.0	≤2.0	0.04	0.04	24.0~28.0	33.0~37.0	(≤0.5)	—
SCH24X	0.3~0.5	1.0~2.5	≤2.0	0.04	0.03	24.0~27.0	33.0~36.0	(≤0.5)	—
SCH24XNb	0.3~0.5	1.0~2.5	≤2.0	0.04	0.03	24.0~27.0	33.0~36.0	(≤0.5)	Nb0.8~1.8
SCH31	0.15~0.35	1.0~2.5	≤2.0	0.04	0.03	17.0~19.0	8.0~10.0	(≤0.5)	—
SCH32	0.15~0.35	1.0~2.5	≤2.0	0.04	0.03	19.0~21.0	13.0~15.0	(≤0.5)	—
SCH33	0.25~0.5	1.0~2.5	≤2.0	0.04	0.03	23.0~25.0	23.0~25.0	(≤0.5)	Nb1.2~1.8
SCH34	0.05~0.12	≤1.2	≤1.2	0.04	0.03	19.0~23.0	30.0~34.0	(≤0.5)	Nb0.8~1.5
SCH41	0.35~0.6	≤1.0	≤2.0	0.04	0.03	19.0~22.0	18.0~22.0	2.5~3.0	W2.0~3.0 Co18.0~20.0
SCH42	0.35~0.45	1.0~2.5	≤1.5	0.04	0.03	27.0~30.0	47.0~50.0	(≤0.5)	W4.0~6.0
SCH43	≤0.1	≤0.5	≤0.5	0.02	0.02	47.0~52.0	余量	(≤0.5)	Nb1.4~1.7 N≤0.16 (N+C) ≤0.2
SCH44	0.4~0.6	0.5~2.0	≤1.5	0.04	0.03	16.0~21.0	50.0~55.0	(≤0.5)	—
SCH45	0.35~0.45	≤2.0	≤1.3	0.04	0.03	13.0~19.0	64.0~69.0	(≤0.5)	—
SCH46	0.44~0.48	1.0~2.0	≤2.0	0.04	0.03	24.0~26.0	33.0~37.0	(≤0.5)	W4.0~6.0 Co14.0~16.0
SCH47	≤0.5	≤1.0	≤1.0	0.04	0.03	25.0~30.0	≤1.0	(≤0.5)	Co48.0~52.0 Fe≤20.0