

COBALT BASE FORGINGS



Cobalt-base forgings

Brand ID	Metal Grade	Chemical Composition (Weight%)									Hardness HRC	Application	Reference Standard
		C	Si	Cr	Mo	Mn	Fe	Ni	W	Co			
HCS 21MB2	Co121MB2	0.35	1	28	6	1	0.75	1	/	ball		Medicine using,casting bar,etc	
HCS 25B	Co125B	0.1	1	20	1	2	2	10	15	ball		used where fatigue,intermetal wear-resistance	AMS 5796
HCS 35B	Co135B	0.025	0.15	20	10	0.15	1	35	/	ball		used making part for high-temperature and sulphidization-resistance service	AMS 5844

NICKEL BASE FORGINGS



Nickel-base forgings

Brand ID	Metal Grade	Chemical Composition (Weight%)											Application	Reference Standard
		C	Si	Cr	Mo	Mn	Fe	Co	Cu	Ti	Al	Ni		
HCS 200B	Ni200	≤0.15	≤0.35	-	-	≤0.35	≤0.4	-	≤0.25	-	-	Bal	used to make pump valve in chemical industry e.g.caustic soda.compound fber,etc	ASTM B564 UNS N02200
HCS CB	Ni 205	≤0.08	≤1	15.5	16	≤1	6	≤2.5	V:0.35	W:0	-	Bal	used to make in chemical industry and the petroleum craft equipment,heat exchanger,etc	AMS 5750C
HCS BB	Ni206	0.05	1	1	28	1	5	2.5	V:0.3	-	-	Bal	used to make heat-resistinghydrochloric acidand the installment and equipment of hydrogenechloride	ASTM B619 UNS N10001
HCS M400B	Ni240	0.3	0.5	-	-	2	2.5	-	31	-	-	Bal	used to make equipment for chemical industry	ASTM B564 UNS N04400
HCS K500B	Ni250	0.18	0.5	-	-	1.5	2.00	-	30	0.6	2.7	Bal	Applie sin high-strength, high-corrosion-resisting, specially in parts of non-magnetic,e.g.shipping popller:spiral push rod,impeller,spring, shipping heat exchanger,etc.main product:bar,wire,high strength corrosion-resisting bll,etc	ASTM B865 UNS N05500
HCS 600B	Ni260	0.15	0.5	16	-	1	8	-	0.5	-	-	Bal	used in heat-treatment and chemistry process-ing equipment.	ASTM B564 UNS N06600
HCS 625B	Ni262	0.1	0.5	22	9	0.5	0.5	-	Nb3.6 5	0.4	0.4	Bal	used in making chemical industry environment-al.protection equipment and astronavigationstructure	ASTM B446 UNS N06625
HCS C -4B	Ni274	0.015	0.08	16	16	1	3	2	-	0.70	-	Bal	used in chlorine, hypochlorous aid,hydrochloric acid, mixed acid,the installment of chloride and applies directly after welding	ASTM B619 UNS N06455
HCS 750B	Ni275	0.08	0.5	16	Nb:1	1	7	1	0.5	2.5	0.7	Bal	used in resistance against corrosion and oxidation, high change-breaking strength under 816℃ simultaneously as one of good elastic-materials,products including spring.torsional spring.etc.	ASTM B637 UNS N07750
HCS 276B	Ni276	0.02	0.08	16	16	1	5.5	2.5	W3.50	V0.35	-	Bal	advanced version of Shield CB alloy,excellent resistance against corrosion,spot corrosion and stress corrosion main products:bar,wire	ASTM B619 UNS N10276
HCS 718B	Ni278	0.08	0.35	19	3	0.35	-	1	0.3	0.9 Nb:5	0.5	55	high resistance against corrosion,and oxidization,high yield strength below 650℃.extremely broad use for heat-resisting alloy,products:die forged item,bar,wire and spring.etc	ASTM B637 UNS N07718
HCS 80A	Ni280	0.07	1	19	-	1	3	2	0.2	2.3	1.4	Bal	used in turbine blade,overall air valve,etc	DIN EN10090 2.4952
HCS 90B	Ni290	0.13	1	20	-	1	1.5	16.5	0.2	-	-	Bal	Be used to make gas turbine blade and spring	AMS 5829E UNS N07090
HCS 92B	Ni292	0.06	1	5.5	-	0.8	Bal	1	-	W :4	0.6	42	Be used to make precision springs, mechanical resonators and other precision spring parts.	AMS 5225E UNS N09902
HCS 95B	Ni295	0.03	0.5	21	3	1	22	Nb:0.5	2.2	2.2	0.3	44	Be used to make Valve, hanging rod,flowline and cylinder that applied to the corrosive mine with H2O, CO2 and brine etc.	ASTM B637 UNS N09925
HCS G3B	Ni2G3	0.03	0.08	30	5	1.5	15	5	2	W3.5	Nb1.2	Bal	Be used to phosphoric acid, wet-process phosphoric acid, nuclear fuel reprocessing, nuclear waste treatment etc.petrochemical industry and other industrial sectors that are in contact with strong corrosive environment, such as pipeline, pumps and valve components	ASTM B462 UNS N06030
HCS X2B	Ni2X2	0.07	1	22	9	1	18.5	1.5	-	W0.6	-	Bal	Be used to make the tail pipe of aircraft engine, combustor and afterburner components etc.	ASTM B472 UNS N06002

IRON BASE FORGINGS



Iron-base forgings

Brand ID	Metal Grade	Chemical composition (Weight%)											Application	Reference Standard
		C	Si	Cr	Mo	Mn	Ni	N	Cu	Ti	Al	Fe		
HCS 310MB	Fe310M	0.03	0.4	25	2.5	2	22	0.13	-	-	-	Bal	mainly used in the structural material of urea production, e.g.heat exchanger etc.	ASTM A182 F310MoLN
HCS 319B	Fe319	0.06	1	22	2	5	12	0.3	Nb: 0.2	-	V:0.2	Bal	mainly used in the equipment and component of good corrosion-resisting and strong load-or attrition withstanding, e.g.shaft for ship, heat exchanger etc.	ASTM A182 FXM-19
HCS 320B	Fe320	0.07	1.00	20	2.5	2	35	-	3.5	Nb: 8* C/1.00	-	Bal	Used in sulfuric acid heat exchanger,vessel and the fuel-refining equipment	ASTM A182 F20
HCS 825B	Fe325	0.05	0.5	22	3	1	44	-	2	0.9	0.2	Bal	Used in heat exchanger condenser	ASTM B564 UNS NO8825
HCS2132	Fe332	0.08	1	14	1	2	25	.	V:0.3	2	0.4	Bal	used to make strength part under high temperature,e.g.fastener、 blade etc, main product:bar,wire and ring.etc	ASTM A638 UNS S66286
HCS 344	Fe344	0.02	0.8	20	6	1	18	0.2	0.8		-	Bal	mainly used in valve, marine equipment	ASTM A276 F44
HCS 351	Fe351	0.03	1	22	3	2	5	0.1	-		-	Bal	used to make parts of pump and valve	ASTM A182 F51
HCS 353	Fe353	0.03	0.8	25	4	1.2	7	0.28	0.5		-	Bal	used to make pump. valve and heat exchanger	ASTM A182 F53
HCS 355	Fe355	0.03	1	25	4	1	7	0.25	0.8		W: 0.8	Bal	Used in petroleum and fertilizer industry	ASTM A182 F55
HCS256Mo	Fe356	0.02	0.5	20	6.5	2	25	0.2	1		-	Bal	used to make heat exchanger,pipe,etc.the product including forging, bar	ASTM A625 UNS NO8926
HCS 360	Fe360	0.03	1	22.5	3.5	2	5.5	0.15	-		-	Bal	used to make heat exchanger,synthetic ammonia chiller,etc	ASTM A182 F60
HCS174	Fe374	0.07	1	16.5	-	1	4	-	4		-	Bal	used to make valve parts under corrosive condition	ASTM A705 17-4PH
HCS177	Fe377	0.09	1	17	-	1	7	-	-	-	1	Bal	used to make kinds of vessel,spring with good corrosion resistance and comparatively high strength.	ASTM A705 17-7PH
HCS 800H	Fe380	0.08	1	21	-	1.5	33	-	0.75	0.4	0.35	Bal	used in the synthetic fiber project of heat pipe, furnace tube and heat-resisting component and so on	ASTM B564 UNS NO8811
HCS 904L	Fe390	0.02	1	21	4.5	2	26	0.10	1.5		-	Bal	Used to make equipment of heat exchanger and pipe,the products including bar and wire	ASTM A182 F904L
HCS 3C4B	Fe3C4	0.08	4	18	-	2	13	-	-	-	-	Bal	used in the production. the storage and transport installment and equipment of nitric acid, like dissolves of nuclear reactor system.	GB1220-92 0Cr18Ni13Si4
HCS 58B	Fe358	0.03	1	24	5.7	3	22.5	0.45	2	W:2	-	Bal	Applied to the reactors ,pipeline,pump and valve which are used to process the Halogens Compound in the petrochemical and other chemical industries	ASTM A182 UNS S31266
HCS 62B	Fe362	0.03	1	21	6.5	2	24.5	0.22	0.75	-	-	Bal	Used to pump and valves applied in sea water and Halogen compund medium	ASTM A182 UNS NO8367
HCS 28B	Fe328	0.03	1	27	3.5	2.5	31	-	1	-	-	Bal	Used to pump and valves applied in redox mediators	ASTM B668 UNS NO8028

COPPER BASE FORGINGS



Copper-base forgings

Brand ID	Metal	Chemical composition (Weight%)									Application	Reference standard
	Grade	Al	Fe	Mn	Si	Ni	Pb	Sn	Zn	Cu		
HCS Cu407	Cu 407	/	1.2	1	/	10	0.05	/	1	Ball	used to make heat exchanger, pump valve of maritime industry .	ASTM B151 UNS C70600
HCS Cu412	Cu 412	8.7-9.5	3.5-4.3	1.2-2	0.1	4-4.8	0.02	/	1	Ball	used in chemical industry ,propeller blade,hub and valve etc.	ASTM B150 UNS C63200
HCS Cu414	Cu 414	8.5-11	3-5	1	0.2	4-6	0.05	0.1	0.4	Ball	used in maritime industry .Gear axes,valve	GB/T20078 CuAl10Ni5Fe4