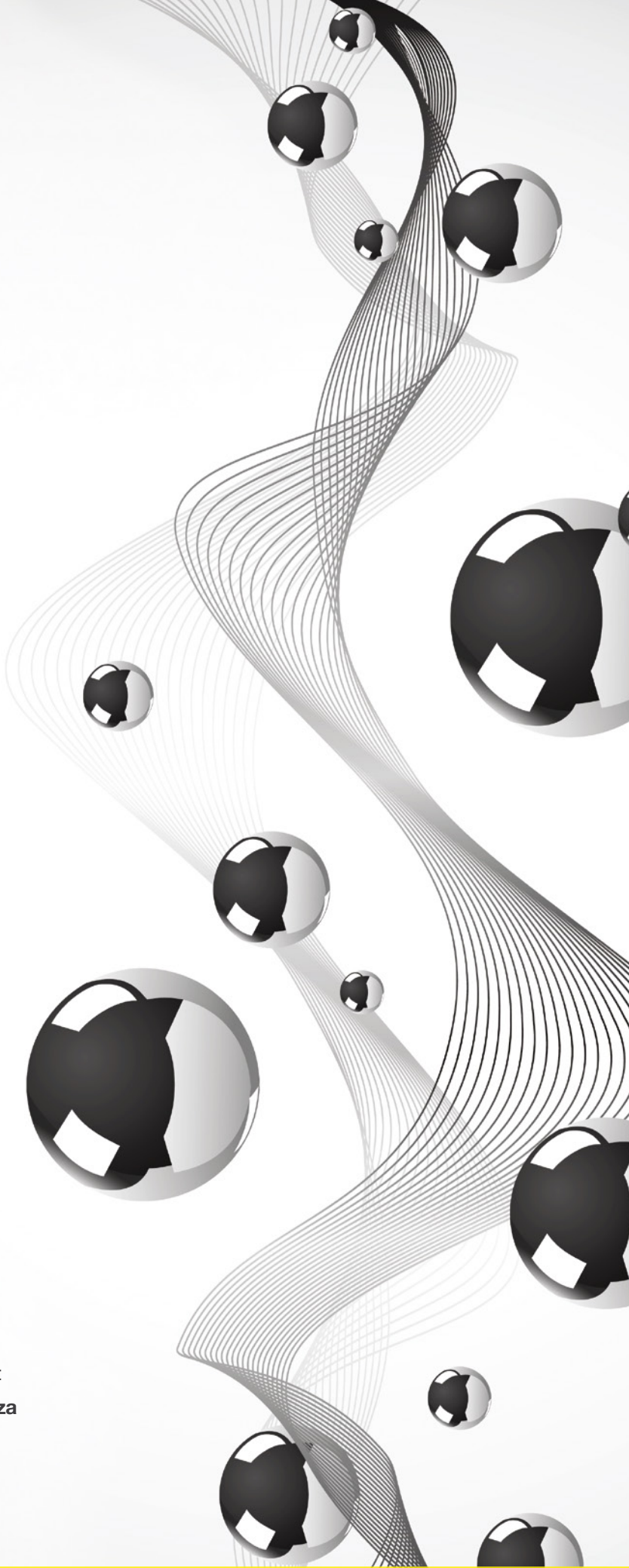


MULTIAlloys

A division of EMVAfrica



Multi Alloys offers a wide range of alloys and this product folder lists some available grades as well as basic data. For more comprehensive information, please contact **0860 ALLOYS** or visit www.multialloys.co.za



S P E C I A L I S T M E T A L S U P P L I E R

















■ HEAT AND/OR CREEP RESISTANT
 ■ CORROSION RESISTANT
 ■ OTHER

NICKEL ALLOYS

GRADE	MAJOR APPLICATIONS	AVAILABILITY	COMPOSITION
■ ALLOY 400 UNS N04400 W Nr. 2.4360	Resistant to sea water and steam at elevated temperatures and to salt and caustic solutions. Feedwater heaters, heat exchangers, marine fixtures, valves and pumps. ALLOY K-500 is a high strength variant.	Selected items from local stock; Balance imported; ex-stock or mill availability	64Ni-32Cu
■ *HASTELLOY B3 UNS N10675 W Nr. 2.4600	Excellent resistance to hydrochloric acid at all concentrations and temperatures and other nonoxidising media. Its modified composition results in thermal stability superior to that of its predecessors viz HASTELLOY B2.	Imported; ex-stock or mill availability	66Ni-29Mo-(controlled W,Si,Fe,Cr,C,Co)
■ ALLOY C276 UNS N10276 W Nr. 2.4819	Versatile alloy with good resistance in a wide range of both oxidising and reducing acids even with chloride contamination. Also chlorine contaminated hydrocarbons.	Selected items from local stock; Balance imported; ex-stock or mill availability	57Ni-16Cr-16Mo-6Fe-4W
■ *HASTELLOY C22 UNS N06022 W Nr. 2.4611	Better overall resistance to corrosion, including pitting and crevice corrosion, than alloys C276, C4 and 625. Best alloy to use as universal weld filler to resist corrosion of weldments.	Imported; ex-stock or mill availability	56Ni-22Cr-13Mo-3Fe-3W
■ *HASTELLOY C2000 UNS N06200 W Nr. 2.4675	HASTELLOY C2000 brings a new dimension to the well known versatility of Ni-Cr-Mo alloys in resisting corrosion under widely varying conditions. Combines outstanding resistance to oxidising media with superior resistance to reducing environments. It has pitting and crevice corrosion resistance superior to C276 and resistance to H2SO4 up to 65% concentration also improved.	Imported; ex-stock or mill availability	59Ni-23Cr-16Mo-1.6Cu (Controlled Si,C)
■ *HASTELLOY G30 UNS N06030 W Nr. 2.4603	Has many advantages over other metals and materials in handling phosphoric, sulphuric and nitric acids and in fluoride environments and oxidising acid mixtures.	Imported; ex-stock or mill availability	43Ni-30Cr-6Mo-2.5W-15Fe-Cu-Cb
■ *HAYNES ALLOY 625 UNS N06625 W Nr. 2.4856	Used for chemical and pollution control equipment, organic and mineral acids. Good mechanical properties at high temperatures, useful for a wide range of aerospace and high temperature applications.	Imported; ex-stock or mill availability	62Ni-21,5Cr-9Mo-(Cb+Ti)
■ ALLOY 600 UNS N06600 W Nr. 2.4816	Very good oxidation resistance up to 1175°C. Applications include heat treatment equipment where it is used in both carburising and nitriding furnaces. Also used for chemical reactors.	Selected items from local stock. Balance imported; ex-stock or mill availability	76Ni-15.5Cr-8Fe-Ti
■ *HAYNES HR160 UNS N12160	Excellent high temperature corrosion resistance including sulphidation. Useful in aggressive environments associated with applications such as waste incinerators, boilers, and high temperature reaction vessels.	Imported; ex-stock or mill availability	37Ni-27Co-28Cr-4Fe-2.75Si
■ *HASTELLOY X UNS N06002 W Nr. 2.4665	Very good balance of strength, oxidation resistance and fabricability. Excellent creep properties. Widely used in gas turbine engine applications.	Imported; ex-stock or mill availability	47Ni-22Cr-19Fe-9Mo-Al-Ti
■ ALLOY 601 UNS N06601 W Nr. 2.4851	Excellent oxidation resistance to 1200°C. Used for heat treatment equipment including radiation tubes, baskets, muffles etc.	Imported; ex-stock or mill availability	63Ni-23Cr-14Fe-Al-Ti
■ *HAYNES HR 120 UNS N08120	Excellent strength up to 1200°C. Very good oxidation and carburisation resistance. Used extensively in general heat treatment applications, especially carburising, for baskets, grids, fixtures, retorts and muffles.	Imported; ex-stock or mill availability	37Ni-31Fe-25Cr-2.5Mo-N-Cb-B
■ ALLOY 718 UNS N07718 W Nr. 2.4668	Precipitation strengthened nickel alloy designed to display exceptionally high yield, tensile and creep rupture properties up to 700 deg C.	Imported; ex-stock or mill availability	52.5Ni-19Cr-3Mo-5.1Nb-Al-Ti-B
■ ALLOY 602CA UNS N06025 W Nr. 2.4633	Highly resistant to cyclic oxidation, carburizing environments and metal dusting. Excellent creep rupture strength.	Imported; ex-stock or mill availability	64Ni-25Cr-9.5Fe-2.1Al-Ti-Y-Zr






*Registered names of Haynes International

STAINLESS STEELS

GRADE	MAJOR APPLICATIONS	AVAILABILITY	COMPOSITION
 ALLOY 20 UNS N08020 W Nr. 2.4660	Often used in sulphuric and phosphoric acids.	Imported; ex-stock or mill availability	40Fe-20Cr-33Ni-2.5Mo-4Cu-Cb
 ALLOY 904L UNS N08904 W Nr. 1.4539	An austenitic stainless steel having good resistance to general corrosion, pitting and crevice corrosion in acidic environments. Used in seawater, pulp and paper industry, and pollution control systems.	Comprehensive range of plate, bar & pipe from local stock; also imports from stock & mill production	49Fe-20Cr-25Ni-4.5Mo-1.5Cu
 ALLOY 904-6% Mo UNS N08926 W Nr. 1.4529	The higher molybdenum content than ALLOY 904L gives increased resistance to pitting and crevice corrosion in acidic environments. Used in seawater, pulp and paper industry, and pollution control systems.	Imported; ex-stock or mill availability	47.5Fe-20Cr-25Ni-6Mo-1.5Cu
 *254SMO UNS S31254 W Nr. 1.4547	A high alloy austenitic stainless steel having greater resistance to pitting and crevice corrosion than ALLOY 904L. Thus a useful alloy for more demanding seawater, desalination, bleach plant and chemical plant applications. Also flue gas cleaning.	Imported; ex-stock or mill availability	55Fe-20Cr-18Ni-6.1Mo-0.5Cu-N
  321 UNS S32100 W Nr. 1.4541	A stabilized grade of stainless steel having similar corrosion properties to 304/304L but with enhanced resistance to intergranular corrosion and elevated temperature mechanical properties.	Selected items from local stock; Balance imported; ex-stock or mill availability	72Fe-18Cr-10Ni-Ti
  316Ti UNS S31635 W Nr. 1.4571	A stabilized grade of stainless steel having similar corrosion properties to 316/316L but with enhanced resistance to intergranular corrosion and elevated temperature mechanical properties.	Imported; ex-stock or mill availability	69Fe-17Cr-12Ni-2Mo-Ti
 *253MA UNS S30815	A grade very similar to 309 stainless steel but with alloying element additions that enhance the metals creep strength and resistance to oxidation particularly in cyclical conditions.	Small bore pipe from stock; Balance imported; ex-stock or mill availability	67Fe-21Cr-11Ni-N-Si-Ce
 GRADE 310 UNS S31008 W Nr. 1.4845	A high temperature stainless steel having useful strength and oxidation resistance. GRADE 310S is a controlled carbon variant while GRADE 314 has a higher silicon content and hence slightly better oxidation resistance.	Comprehensive range of plate, bar & pipe from local stock	55Fe-25Cr-20Ni
 ALLOY 330 UNS N08330 W Nr. 1.4864	Good scaling resistance in air and combustion gases. Useful for a wide range of furnace parts at temperatures up to 1100°C.	Imported; ex-stock or mill availability	43Fe-19Cr-35Ni-1.25Si
 GRADE 446 UNS S44600	A ferritic stainless steel used as a general purpose heat resisting grade in a wide range of applications. 1.4762 is a similar grade but contains a small amount of Aluminium. Small bore pipe stock is Sandvik 4C54.	Small bore pipe from stock; Balance imported; ex-stock or mill availability	25Cr-75Fe-N
  17-4PH UNS S17400 W Nr. 1.4542	A precipitation (age hardenable) stainless steel offering high strength and hardness, good corrosion resistance and fabricating characteristics.	Selected items from local stock; Balance imported; ex-stock or mill availability	78Fe-17Cr-4Ni-4Cu-Cb
  GRADE 431 UNS S43100 W Nr. 1.4057	A heat treatable stainless steel with useful corrosion resistance and mechanical properties (strength and toughness). Used for pump and valve components and fasteners.	Selected items from local stock; Balance imported; ex-stock or mill availability	80Fe-16Cr-2Ni-C

*Registered name of Outokumpu Stainless A.B

DUPLEX ALLOYS

GRADE	MAJOR APPLICATIONS	AVAILABILITY	COMPOSITION
 *LDX2101 UNS S32101 W Nr. 1.4162	A low-alloyed general purpose duplex grade displaying high strength and corrosion resistance on a par with most standard grades of stainless steel.	Selected items from local stock. Balance imported; ex-stock or mill availability	72Fe-21.5Cr-5Mn-1.5Ni-0.3Mo-N
 ALLOY 2205 UNS S31803 UNS S32205 W Nr. 1.4462	A duplex stainless steel with excellent resistance to stress corrosion cracking. It displays a high yield strength as well as a useful resistance to pitting.	Comprehensive range of plate, bar, pipe, welding consumables, fasteners and fittings from local stock. Also imports from stock or mill production	69Fe-22Cr-5.7Ni-3Mo-N
 ALLOY 255 UNS S32550 W Nr. 1.4507	Copper containing austenitic-ferritic stainless steel. ALLOY 255 has the added benefit over ALLOY 2205 of being resistant to sulphuric and phosphoric acids over a range of conditions.	Imported; ex-stock or mill availability	64Fe-25Cr-5.7Ni-3.3Mo-2Cu-N
 ALLOY 2507 UNS S 32750 W Nr 1.4410	As duplex stainless steel this alloy displays similar properties to ALLOY 2205. Strength is however greater as is resistance to pitting and crevice corrosion and resistance to stress corrosion and cracking.	Comprehensive range of plate, bar, pipe, welding consumables from local stock. Also imports from stock or mill production	66Fe-24Cr-6Ni-3Mo-N
 ALLOY S32760 UNS S32760 W Nr 1.4501	A highly alloyed duplex stainless steel for use in seawater, brine and similar chloride containing environments. Corrosion and strength properties superior to those of ALLOY 2205.	Imported; ex-stock or mill availability	64Fe-25Cr-7Ni-3.5Mo-0.75Cu-0.75W-N

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■ HEAT AND/OR CREEP RESISTANT
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TITANIUM ALLOYS

GRADE	MAJOR APPLICATIONS	AVAILABILITY	COMPOSITION
■ Ti Grade 2 UNS R50400	Moderate strength unalloyed grade of titanium with excellent weldability, cold formability and fabricability; 'workhorse' grade for industrial service. It displays excellent resistance to a wide range of conditions ranging from mildly reducing to highly oxidising.	Selected items from local stock; or imports from stock or mill availability	99.5 Ti 0.03 N (max) 0.30 Fe (max) 0.25 O (max)
■ Ti Grade 4 UNS R50700	Much stronger version of Grade 2 as a result of the higher level of interstitial elements. It has reasonable weldability but reduced ductility and formability. Widely used for plating and anodising jigs and fixtures.	Imported; ex-stock (limited) or mill availability	99.3 Ti 0.05 N (max) 0.50 Fe (max) 0.40 O (max)
■ Ti Grade 5 UNS R56400 ■	Heat treatable, high strength, most commercially available titanium grade for use up to 400 deg c. - 'workhorse' grade for the aerospace industry. Offers an excellent combination of strength, toughness and ductility along with good weldability and fabricability.	Selected items from local stock; or imports from stock or mill availability	89.3 Ti 6 Al - 4 V 0.05N (max) 0.40 Fe (max) 0.20 O (max)
■ Ti Grade 7 UNS R52400	The titanium alloy most resistant to corrosion in reducing acids and to localised attack in hot halide media. It has physical and mechanical properties equivalent to Grade 2 and excellent weldability / fabricability.	Imported; ex-stock or mill availability	99.3 Ti -0.2 Pd 0.03 N (max) 0.30 Fe (max) 0.25 O (max)
■ Ti Grade 12 UNS R53400	Grade 12 is a highly weldable and fabricable alloy offering improved strength and pressure vessel code allowances compared to Grade 2. It also has corrosion resistance advantage.	Imported; ex-stock (limited) or mill availability	98.5 Ti - 0.3 Mo - 0.8 Ni Controlled interstitials
■ Ti Grade 16 UNS R52402	A lower cost, leaner Pd version of Grade 7 with equivalent mechanical and physical properties and corrosion resistance between that of Grades 7 and 2.	Imported; ex-stock (limited) or mill availability	99.5 Ti - 0.05 Pd Controlled interstitials

COPPER ALLOYS

GRADE	MAJOR APPLICATIONS	AVAILABILITY	COMPOSITION
■ BRUSH ALLOY 25 UNS C17200	Most commonly specified copper beryllium alloy. When aged displays exceptional strength and resistance to stress relaxation at elevated temperatures. Used in electronics, tooling (eg plastics), bearing and general industrial applications. ALLOY M25 is a free machining variant.	Selected items in bar and strip from local stock; also imports ex-stock or mill availability	Cu-1.9Be
■ BRUSH ALLOY 3 UNS C17510	A lower Be grade than Alloy 25; Combines moderate yield strength with good electrical and thermal conductivity. Used for resistance welding applications - RWMA CLASS 3 alloy. Suitable for age hardening.	Imported; ex-stock (limited) or mill availability	Cu-0.4Be-1.8Ni
■ MoldMAX HH® ■	This grade is a High Hardness variant in a family of alloys designed for the plastic processing industry. They provide a unique combination of thermal conductivity and strength thereby enabling shorter cycle times, improved plastic part dimensional accuracy, better parting line maintenance and corrosion resistance.	Imported; ex-stock or mill availability	Cu-1.9Be
■ ToughMet® 3 UNS C96900 ■ UNS C72900	A bearing alloy designed to meet a variety of performance demands. Used in harsh environments, against a wide range of mating materials and in conditions where lubrication may be poor. The alloy has excellent machinability, high strength and good corrosion resistance especially in seawater. ToughMet®2 is a variant.	Selected round bar and hollow bar items from local stock; balance imported ex-stock or mill availability	Cu-15Ni-8Sn
■ Copper - Chrome - Zirconium UNS C18200	A precipitation hardening copper based alloy. High electrical conductivity and high mechanical properties are attributes of this alloy. Applications - resistance welding wheels and electrodes. Also moulds for continuous casting. A RWMA CLASS 2 alloy.	Imported; ex-stock (limited) or mill availability	Cu-1Cr-0.1Zr
■ 70/30 Cupro-Nickel UNS C71500	Excellent corrosion resistance in flowing seawater even if contaminated. Good resistance to erosion and cavitation. Used for seawater piping systems on ships and offshore platforms. Also for condensers, heat exchangers and desalination plants. Cupro-nickel 90/10 (UNS C70600) is a similar grade.	Imported; ex-stock (limited) or mill availability	Cu-30Ni-0.7Fe-1Mn