

Aalco, founded in 1964, is today the UK's largest independent multi-metals stockholder, with a £25 million inventory spanning aluminium, stainless steel, copper, brass, bronze and nickel alloys in all semi-finished forms.

Aalco provides customers with a cost-effective single source for all their metals requirements, together with a comprehensive processing service offering all stock in standard sizes or cut to customer's instructions as well as finishing and coating. No order is too large or too small and Aalco offers a responsive and competitive service for supplying anything from single item orders to major JIT contracts, tailoring this service to the individual needs of every customer.

The unique combination of unrivalled product range, extensive processing facilities and flexible service makes Aalco a clear market leader. What's more Aalco's exceptional customer service means that 30,000 customers from every sector of UK manufacturing and engineering industry rely on Aalco for their metals supplies.

With 20 companies across England, Scotland, Wales & Ireland, Aalco delivers to every corner of the UK. Every Aalco branch holds stocks to meet the immediate needs of customers in their local area. This is backed up by bulk stocks held at a central warehouse.

For a quotation, for further information, more extensive technical information, advice on product selection or to place an order, please contact your local Aalco branch as shown on the back cover.

Standard Stock and 'Specials'

This catalogue is intended to provide an overview of the product range together with the essential basic technical information. Please note that the sizes shown for each product are those most widely used and that many more options are available from Aalco's 10,000 item standard stock range.

Aalco also hold a significant range of non-standard products as well as special items for particular industries and individual customers. In fact around 40% of the stock at individual branches falls into this category.



Processing Services

Processed metals save time and money so many customers have a need for cutting services. Understanding this, Aalco is committed to providing an effective response and has thus made major investments in a wide range of advanced processing equipment at both local branches and central facilities. Most branches have on-site bar sawing, protective PVC coating of sheet and a guillotine. Central facilities include plate saws, polishing of sheet & coil and plasma profiling as well as coil processing



spanning decoiling, levelling, slitting and blanking. In addition, Aalco regularly arranges other services for customers on a sub-contract basis. Aalco has developed particular specialities in four key areas:

Bar, tube and pipe cutting

For bar, capacity is available to accurately cut anything from a single 16"/406mm diameter billet to high

volume repetition blanking. For tubular products there is an equally flexible range of facilities. This means reliable deliveries of cut pieces across the whole product range.

Plate processing

Aalco's plate processing facilities provide a unique range of possibilities for cutting stainless steel, aluminium, copper, brass, bronze and nickel alloy plate that is unmatched in the UK. Plate saws handle 4000mm lengths in thicknesses up to 155mm. Plasma cutting on air or submerged beds provides blanks up to 130mm thick, 2000mm wide, 4000mm long. Band saws cut circles 100mm thick up to 1000mm diameter. Laser cutting provides a clean, accurate edge for thicknesses up to 50mm in 2000mm widths and 4000mm lengths.

Water Jet cutting provides intricate detail to close tolerances for thicknesses up to 100mm in 2000mm width plates up to 4000mm long.

Guillotining provides cut plates up to 14 metres long, 12mm thick and 2000mm wide. **Abrasive Disc** cutting provides a clean, smooth, square-cut edge on plates up to 75mm thick, 2000mm wide, 4000mm long. In addition Aalco offer **Plate Decoiling** up to 12mm thick and 2000mm wide to provide plate blanks up to 4000mm long.

Coil processing

Our coil processing services cover decoiling, levelling, slitting, spool winding, blanking, piercing, notching and circling as well as polishing and protective coating. Aluminium and stainless steel in thicknesses from 0.1mm to 3.0mm with widths up to 2000mm are processed to close tolerances on a 22 specialist lines within a dedicated group facility that is unequalled in Europe.

Surface finishing

A significant percentage of the stainless steel sheet used today is supplied with a polished finish. Aalco has extensive polishing facilities providing a range of finishes to meet every application. This includes a full range of ground finishes as well as the premium OPTISHEEN™ finish. The unique wet-cut OPTISHEEN™ process produces a very consistent high quality surface meeting the highest food-industry standards.

Aalco supplies many other surface-finished products including polished stainless steel plate, coil and tube, anodised aluminium sheet and extrusions as well as various coloured and/or textured coatings.



Quality

Aalco takes great care when selecting manufacturing sources for its products. Every mill is subjected to careful scrutiny and must meet a schedule of quality control requirements. Therefore, all products supplied by Aalco conform to the relevant BS or international standard. A certificate of conformity or analysis can be supplied on request.

Aalco branches operate a quality manual designed to ISO9000/2000 requirements. Many vendor approvals and bespoke quality control systems are operated through individual Aalco branches.

People

Exceptional customer service starts with people. Flexible people, whom customers can trust and rely upon to provide quality advice and informed product knowledge in a friendly manner.

Aalco attracts, develops and retains high quality people. Continuous development of their skills includes an in-house product-training programme giving them a complete understanding of the full range.

This enables customers to benefit from assistance in materials selection and choice of the most cost effective processing options.

Whatever your requirement, in whatever quantity, it will pay you to discuss your needs with your local Aalco branch.



Nickel Alloys

Aalco provides its customers with access to the UK's most comprehensive nickel alloy stock range. The range, outlined in this section, also includes duplex and super duplex stainless steels and titanium. In addition, as described below, Aalco offer a comprehensive range of in-house processing facilities, supported by a network of carefully selected and approved sub-contractors. As with all products, Aalco provides a fast, flexible and reliable service with an unrivalled level of technical service and support.



NICKEL ALLOYS

Corrosion Resistant Alloys

MONEL ALLOY	400
MONEL ALLOY	K500
INCOLOY ALLOY	825
INCOLOY ALLOY	925
INCONEL ALLOY	625
INCONEL ALLOY	725
INCONEL ALLOY	718
INCONEL ALLOY	X750
ALLOY	660/A286

Heat Resistant Alloys

INCOLOY ALLOY	DS
INCOLOY ALLOY	800
INCOLOY ALLOY	800HT
INCOLOY ALLOY	803
INCONEL ALLOY	600
INCONEL ALLOY	601
NIMONIC ALLOY	75

Compatible welding consumables for MIG, TIG and MMA processes are also available.

Product Forms

- Strip
- Sheet
- Plate
- Tubing
- Pipe
- Wire
- Rounds
- Billet
- Square
- Hexagon
- Rings
- Forgings
- Flanges/Fittings

Customised products and services

In addition to the many standard stock sizes, Aalco also offers a service for specials and/or non-standard items that may arise. Using proven out-workers and numerous international producers, Aalco can source and then customise to provide exactly the product, alloy and form you require, no matter how large or small. Service facilities include:

- Bar sawing
- Shearing
- Plasma cutting
- Forging
- Machining
- Heat treatment
- Testing
- Plate Saw

STOCK SIZE RANGES

Sheet/Strip

0.002 to 0.25in (0.05 to 6.4mm) thick.
Up to 60in (1500mm) wide.
Coil or cut flat lengths.

Plate

0.1875 to 0.4in (4.8 to 102mm) thick.
Up to 96in (2440mm) wide.
Up to 360in (9140mm) long.

Rod and Bar Products

Hot Rolled Rod in Coil

0.217 to 1.03in (5.5 to 25mm) dia.

Cold Drawn Rounds

0.375 to 4.0in (9.5 to 102m) dia.

Cold Drawn Hexagon

0.50 to 3.875in (12.7 to 98mm) across flats.

Rounds

0.375 to 10in (9.5 to 254mm) dia.

Billet (RCS)

4in to 12in (101.6 to 305mm).

Tube & Pipe

Seamless Tube

0.125 to 4.0in (3.28 to 101.2mm) outside dia.

Seamless Pipe

0.5in to 10.0in (12.7 to 254mm).

Welded Pipe

0.5in to 24in (12.7 to 610mm).

Fittings and Flanges

Fittings

Elbows, Tees and reducers – 180° return bends and forged outlets.

Manufactured in accordance with ASTM B366.

Tolerances & Dimensions (as applicable) to: ANSI B 16.9.
ANSI B 16.11, ANSI B 16.28, ASNI 16.25, MSS SP43.

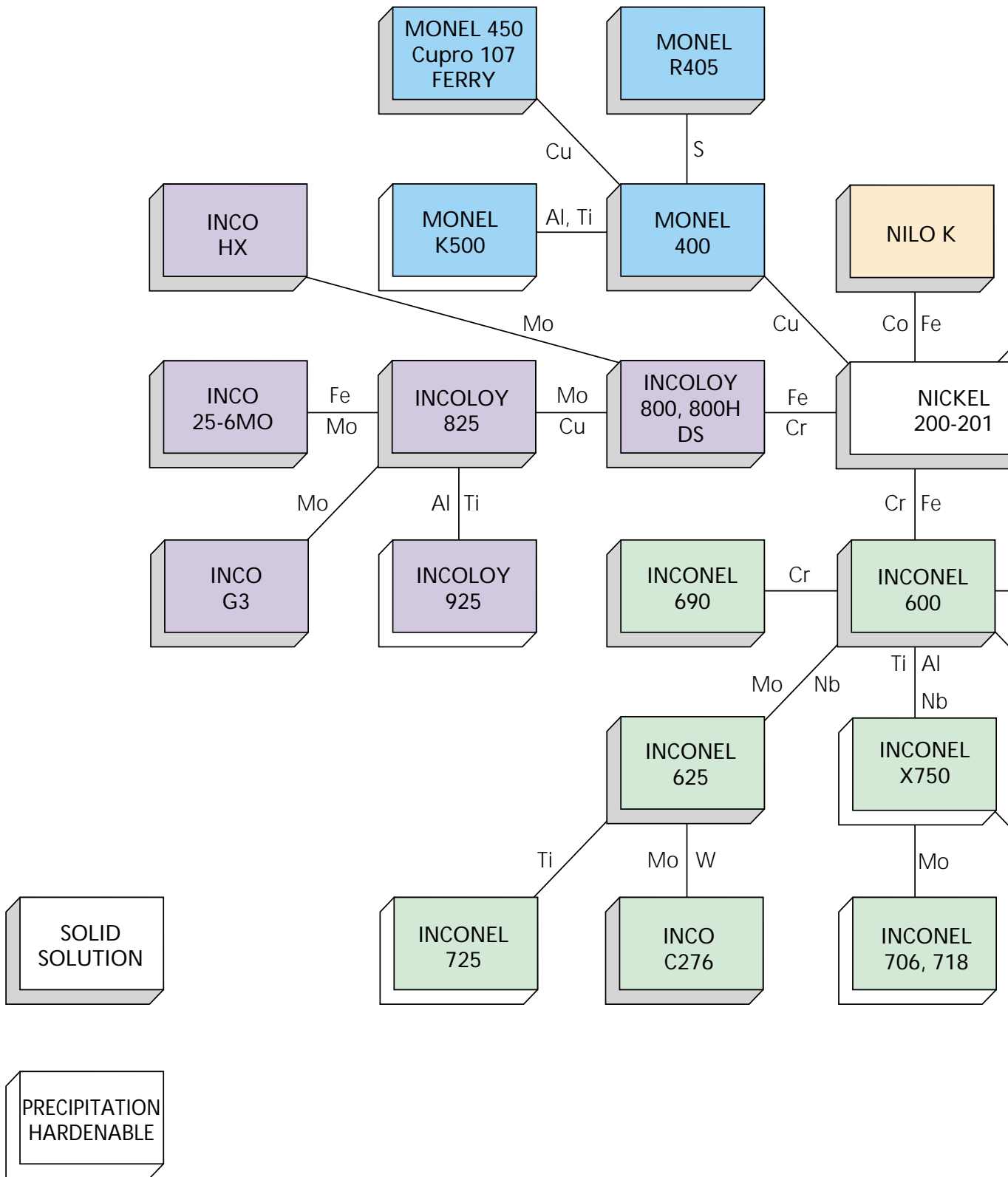
Flanges

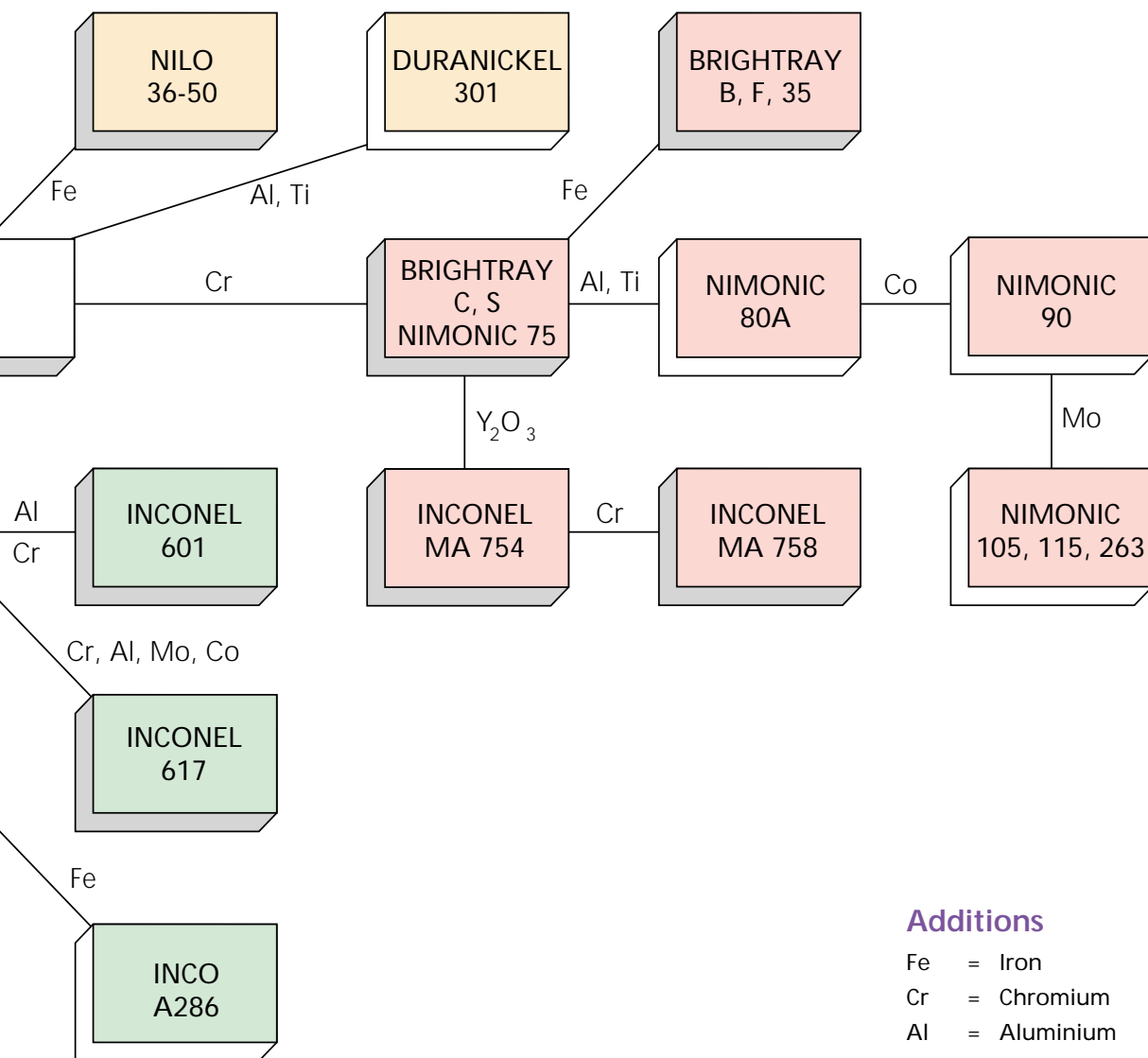
Manufactured in accordance with ANSI B 16.5, BS 1560.

The stock range is further enhanced by modern, highly productive processing equipment ensuring customers of a cost effective service.

ALLOY	Plate	Sheet	Sheet in Coil	Bar	Billett	Hexagon	Pipe	Tube	Fittings	Flanges
NICKEL 200	*	*		*	*		*		*	*
MONEL Alloy 400	*	*	*	*	*	*	*	*	*	*
MONEL Alloy K500				*	*					
INCONEL Alloy 600	*	*	*	*	*		*	*	*	*
INCONEL Alloy 601	*	*	*	*			*			
INCONEL Alloy 625	*	*	*	*	*	*	*		*	*
INCONEL Alloy 718				*	*					
INCONEL Alloy X750				*	*					
INCOLOY Alloy 925				*	*					
INCOLOY Alloy 800/800HT	*	*	*	*	*		*		*	*
INCOLOY Alloy 825	*	*	*	*	*		*		*	*
INCOLOY Alloy DS	*	*		*						
C-276 Alloy	*	*	*	*	*		*		*	*
A286 GRADE 660				*						
6 MOLY	*	*		*	*		*		*	*
UNS 31803 (DUPLEX)	*	*		*	*		*		*	*
UNS 32760 (SUPER DUPLEX)	*	*		*	*		*		*	*
TITANIUM 1,2	*	*	*	*	*	*	*	*	*	*
T309	*									
T310	*	*		*			*			
T321	*	*		*		*	*	*	*	*
17-4 PH SS				*	*	*				

NICKEL ALLOYS FAMILY TREE





Additions

- Fe = Iron
- Cr = Chromium
- Al = Aluminium
- Ti = Titanium
- Mo = Molybdenum
- Co = Cobalt
- W = Tungsten
- Cu = Copper
- Y₂O₃ = Yttrium Oxide
- Nb = Niobium
- S = Sulphur

NICKEL ALLOYS SELECTION GUIDE

ALLOY	BASIC COMPOSITION %	SPECIFICATIONS & DESIGNATIONS	ROOM TEMPERATURE	
			Temper	Tensile Strength 1000 psi (MPa)
Nickel 200/201	Ni 99.6 C 0.08	UNS NO2200 (Nickel 200)/UNS NO2201 (Nickel 201/BS 3072-3076/ASTM B (ASME SB-) 160-163/ASME Code Sec. III, VIII, IX/AMS 5553 (201)/DIN 17740, 17750-17754/W. Nr. 2.4060 (200), 2.4066 (200), 2.4061 (201)	Annealed	55-80 (380-550)
MONEL alloy 400	Ni 66.5 Cu 31.5	UNS NO4400/BS 3072-3076 (NA13)/ASTM B (ASME SB-) 127, 163-165, 564/ASME Code Sec. III, IV, VIII, IX/AMS 4544, 4574, 4575, 4675, 4730, 4731, 7233/DIN 17743, 17750-17754/W. Nr. 2.4360, 2.4361/QQ-N-281/AFNOR NU30	Annealed	70-90 (480-620)
MONEL alloy K-500	Ni 65.5 Cu 29.5 Al 2.7; Ti 0.6	UNS NO5500/BS 3072-3076 (NA18)/ASME Code Sec. VIII/AMS 4676/DIN 17743, 17752, 17754/W. Nr. 2.4375/QQ-N-281.	Aged	140-190 (970-1310)
INCONEL alloy 600	Ni 76.0; Cr 15.5; Fe 8.0	UNS NO6600/BS 3072-3076 (NA14)/ASTM B (ASME SB-) 163, 166-168, 564/ASME Code Sec. I, III, VIII, IX/AMS 5540, 5580, 5665, 5687, 7232/DIN 17742, 17750-17754/W. Nr. 2.4816/AFNOR NC 15 Fe	Annealed	80-100 (550-690)
INCONEL alloy 601	Ni 60.5; Cr 23.0, Fe 14.0, Al 1.4	UNS NO6601/ASME Code Sec. VIII/AMS 5715, 5870/DIN 17742, 17750-17752/W. Nr. 2.4851	Annealed	80-115 (550-790)
INCONEL alloy 617	Ni 52.0; Cr 22.0, Co 12.5, Mo 9.0, Al 1.2	UNS NO6617/ASME Code Sec. I, VIII	Annealed	110 (760)
INCONEL alloy 625	Ni 61.0; Cr 21.5; Mo 9.0, Nb + Ta 3.6	UNS NO6625/BS 3072, 3074, 3076 (NA21)/ASTM B (ASME SB-) 443, 444, 446, 564/ASME Code Sec. I, III, VIII, IX/AMS 5581, 5599, 5666, 5837/DIN 17744, 17750-17752, 17754/W. Nr. 2.4856/AFNOR 22 D Nb	Annealed	135 (930)
INCONEL alloy 718	Ni 52.5, Cr 19.0, Fe 18.5, Mo 3.0, Nb + Ta 5.1	UNS NO7718/ASTM B 637, B 670/ASME Code Sec. I, III/AMS 5589, 5590, 5596, 5597, 5662-5664, 5832/W. Nr. 2.4668/LW Nr. 2.4668/AECMA Pr EN 2404, 2407, 2408	Aged	196 (1350)
INCONEL alloy X-750	Ni 73.0, Cr 15.5, Fe 7.0, Ti 2.5, Al 0.7, Nb + Ta 1.0	UNS NO7750/BS HR505/ASTM B 637/ASME SB-637, Code Sec. III/AMS 5542, 5582, 5583, 5598, 5667-5671, 5698, 5699, 5747, 5749, 7246/AFNOR NC 15 Fe T	Aged	162-193 (1120-1330)
INCOLOY alloy 800	Ni 32.5, Fe 46.0, Cr 21.0	UNS NO8800/BS 3072-3076 (NA15)/ASTM B (ASME SB-) 163, 407-409, 564/ASME Code Sec. I, III, VIII, IX/AMS 5766, 5871/S. E. W. 470/W. Nr. 1.4876	Annealed	75-100 (520-690)
INCOLOY alloy 800 HT	Ni 32.5, Fe 46.0, Cr 21.0, C 0.08, Al + Ti 1.0	UNS NO8811/ASTM B (ASME SB-) 163, 407-409, 564/ASME Code Sec. I, VIII/W. Nr. 1.4876/BS 3072, 3074, 3076 (NA15H)/S. E. W. 470	Annealed	65-95 (450-660)
INCOLOY alloy DS	Ni 38, Fe 40, Cr 18, Si 2.2	BS 3072-3076 (NA17)	Annealed	87 (600)
INCOLOY alloy 825	Ni 42, Fe 30, Cr 21.5, Mo 3, Cu 2.2	UNS NO8825/BS 3072-3074, 3076 (NA14)/ASTM B (ASME SB-) 163, 423-425/ASME Code Sec. I, III, VIII, IX/DIN 17744, 17750-17752, 17754/W. Nr. 2.4858	Annealed	85-105 (590-720)
INCOLOY alloy 925	Ni 42, Fe 32, Cr 21, Mo 3, Cu 2.2, Ti 2.1	UNS NO9925	Aged	176 (1210)
INCO alloy C-276	Ni 57.0, Mo 16.0, Cr 15.5, Fe 5.5, W 3.8	UNS N10276/ASTM B (ASME SB-) 574, 575, 619, 622, 626/ASME Code Sec. I, III, VIII, IX/DIN 17744, 17750-17752/W. Nr. 2.4819	Annealed	115 (790)
INCO alloy A286	Ni 25.5, Fe 56, Cr 15, Ti 2.1, Mo 1.5	UNS S66286, ASTM A453, A638, ASME SA 638, BS HR51, HR52, HR650, SAE AMS 5525, 5726, 5731, 5732, 5734, 5737, 5858, 5895, AFNOR Z3 NCT 25, W. Nr. 1.4980	Aged	150 (1050)
NIMONIC alloy 75	Ni 80, Cr 19.5	UNS NO6075/BS HR5, HR203, HR403, HR504/DIN 17742, 17750-17752/W. Nr. 2.4951, 2.4630/LW. Nr. 2.4630/AFNOR, NC 20T/AECMA Pr EN 2293, 2294, 2302, 2306-2308, 2402, 2411	Annealed	110 (750)
NIMONIC alloy 80A	Ni 76, Cr 19.5 Ti 2.4, Al 1.4	UNS NO7080/BS 3076 (NA20), HR 1, HR 201, HR 401, HR 601/ASTM B 637/DIN 17742, 17754/W. Nr. 2.4952, 2.4631/LW. Nr. 2.4631/AFNOR NC 20TA/AECMA Pr EN 2188-2191, 2396, 2397	Aged	180 (1220)
NIMONIC alloy 90	Ni 60, Cr. 19.5, Co 16.5, Ti 2.5, Al 1.5	UNS NO7090/BS 3075 (NA19), HR 2, HR 202, HR 402, HR 501-HR 503/AMS 5829/LW. Nr. 2.4632/AFNOR NCK 20TA/AECMA Pr EN 2295-2299, 2400, 2401, 2412, 2669, 2670.	Aged	170 (1175)

MECHANICAL PROPERTIES			DESCRIPTION • MAJOR APPLICATIONS
Yield Strength 0.2% Offset 1000 psi (MPa)	Elongation %	Hardness Brinell	
15-30 (100-210)	55-40	90-120	Commercially pure wrought nickel, good mechanical properties, excellent resistance to many corrosives. Nickel 201 has low carbon (0.02% max.) for applications over 600°F (315°C). • Food processing equipment, chemical shipping drums, caustic handling equipment and piping, electronic parts, aerospace and missile components, rocket motor cases, magnetostrictive devices.
25-50 (170-340)	60-35	110-149	High strength, good weldability, excellent corrosion resistance over wide range of temperatures and conditions. • Valves, pumps, shafts, marine fixtures, fasteners, electrical and electronic components, processing equipment, petroleum refining and production equipment, feedwater heaters and other heat exchangers.
110-150 (760-1030)	30-20	265-346	Age-hardenable version of MONEL alloy 400 for increased strength and hardness. • Pump shafts, doctor blades and scrapers, oil-well drill collars and instruments, electronic components, springs, valve trims, fasteners.
30-50 (210-340)	55-35	120-170	High nickel, high chromium content for resistance to oxidizing and reducing environments; for severely corrosive environments at elevated temperatures. • Furnace muffles, electronic components, chemical and food processing equipment, heat treating equipment, nuclear steam generator tubing.
30-60 (210-340)	70-40	110-150	Excellent high-temperature properties, resistance to oxidizing, carburizing, and sulphur-containing atmospheres. • Heat exchangers, heat-treating baskets and fixtures, radiant tubes, thermocouple tubes, furnace muffles and retorts, combustion cans, aircraft engine parts.
51 (350)	58	173	Excellent cyclic oxidation and carburization resistance and good stress-rupture properties. • Aerospace and engine components, after-burners, flame holders, spray bars, combustion can liners, turbine seals, heat-treating equipment, nitric acid catalyst supports, reformer tubing.
75 (520)	45	180	High strength and toughness from cryogenic temperatures to 1800°F (980°C), good oxidation resistance, exceptional fatigue strength, and good corrosion resistance. • Chemical and pollution control equipment, ash pit seals, nuclear reactors, marine equipment, ducting, thrust reverser assemblies, fuel nozzles, afterburners, spray bars.
171 (1180)	17	382	Excellent strength from -423°F to 1300°F (-253°C to 705°C). Age hardenable and may be welded in fully aged condition. Excellent oxidation resistance up to 1800°F (980°C). • Jet engines, pump bodies and parts, rocket motors and thrust reversers, nuclear fuel element spacers, hot extrusion tooling.
115-142 (790-980)	30-15	300-390	Age hardenable alloy with good corrosion and oxidation resistance. Excellent relaxation resistance. • Gas turbine parts, steam service and nuclear reactor springs, bolts, vacuum envelopes, extrusion dies, bellows, forming tools.
30-60 (210-410)	60-30	120-184	Strong and resistant to oxidation and carburization at elevated temperatures. Resists sulphur attack, internal oxidation, scaling and corrosion. • Heat exchangers, process piping, carburizing fixtures and retorts, heating element sheathing, nuclear steam generator tubing.
20-50 (140-340)	50-30	100-184	Similar to alloys 800 and 800H with better high-temperature strength. Higher design strength values for use above 1150°F (620°C). • Chemical and power plant super-heater and reheater tubing; steam-methane reformer pigtails, headers, and furnace tubing; process piping.
32 (220)	61	-	Good high-temperature strength and resistance to oxidation and carburization. • Heat-treating furnaces and equipment.
35-65 (240-450)	50-30	120-180	Excellent resistance to wide variety of corrosives. Resists pitting and intergranular corrosion. • Pickling tank heaters, pickling hooks, spent nuclear fuel recovery, chemical tank trailers, processing equipment, sour well tubing, hydrofluoric acid production, pollution control and radwaste systems.
118 (810)	24	-	Age-hardenable alloy provides high strength up to 1000°F (540°C). Comparable to alloy 825 in corrosion resistance. • Oil country tubular products, tool joints, surface and downhole hardware, fasteners, shafting.
60 (415)	50	184	Outstanding corrosion resistance in reducing and oxidizing environments. Maintains corrosion resistance in welded joints. Excellent resistance to pitting and stress-corrosion cracking. • Widely used in severest environments in chemical processing, pollution control, pulp and paper.
100 (700)	25	-	An age-hardenable alloy for high mechanical properties. The alloy maintains good strength and oxidation resistance up to 700°C. • An alloy that is extensively used as stud bolts and fasteners in the aerospace, oil-field and petrochemical industries.
35 (240)	40	170	An 80-20 nickel-chromium alloy with controlled additions of titanium and carbon. • Aircraft gas-turbine components needing resistance to oxidation and scaling combined with medium strength at high temperature.
115 (780)	30	-	Wrought Ni-Cr alloy strengthened by age-hardening. Creep-resistant alloy for service at temperatures to 1550°F (845°C). • Gas-turbine blades, rings and discs; die casting inserts and cores; bolts, nuclear boiler tube supports; piston-engine exhaust valves.
110 (750)	30	346	Wrought Ni-Cr alloy strengthened by addition of Ti and Al. Age-hardened and creep-resistant alloy for service at temperatures to 1690°F (920°C). • Turbine blades and discs, hot-working tools, and high-temperature springs.