

*Manufacturers of Chemical  
Process Equipments made out of...*

- **Titanium**
- **Tantalum**
- **Nickel**
- **Hastelloy®**
- **Monel®**
- **Inconel**
- **Duplex SS**
- **Super Duplex SS**
- **Alloy 904L**
- **Alloy 20**
- **Zirconium**
- **Niobium**
- **Stainless Steel**



**EXOTIC FABTECH**  
— PRIVATE LIMITED —



www.exoticfabtech.com

www.exoticfabtech.com



**EXOTIC FABTECH**  
— PRIVATE LIMITED —

**OFFICE :**

Bldg. No. C/6-102,  
Saket Complex, K. K. Marg,  
Thane (W) 400 601, Maharashtra.

**WORKS:**

Survey No. 183, Village - Dhamangao,  
Talati - Vadpe, Bhiwandi Bypass Road,  
Bhiwandi, Dist: Thane 421 302, Maharashtra.

T : +91 22 6566 3100 (5 Lines)  
F : +91 22 2544 6556  
E : exotic@exoticfabtech.com

The Ultimate Destination  
for Exotic Material Fabrication



EXOTIC **FABTECH** designs and fabricates highly corrosion Resistance Equipments for the Chemical, Process Industries. Our expertise lies in our reputation to Design and Fabricate cost effective process Equipments using the Exotic Metals such as :

- Titanium
- Zirconium
- Duplex SS
- Hastelloy®
- Nickel
- SS 904L etc.
- Tantalum
- High Nickel Alloys
- Super Duplex SS
- Monel®
- Nickel Alloys

Process Equipments made from these Metals can be used with extremely corrosive fluids and last for decades if designed and fabricated correctly. EXOTIC **FABTECH** have the experience to make sure everything comes together Budget, Design, Fabrication and Schedule to yield the most trouble free installation possible. Our range of equipments are mostly used in the following process industries :

- Chemical
- Chlor Alkali
- Oil & Gas
- Biomass
- Steel Pickling
- Food Processing
- Aerospace
- Petrochemical
- Pharmaceutical
- Water Desalination
- Pulp & Paper
- Electro Chemical
- Shipping
- Defense

EXOTIC **FABTECH**'s dedication to only the Exotic Metals has led us to become experts in Process Equipment application for the following chemicals and pharmaceutical processes :

- Acetic Acid
- Agricultural Chemicals
- Ammonium Nitrate
- Bromine
- Chlorine
- Formic Acid
- Hydrochloric Acid
- Nitric Acid
- Sulphuric Acid Concentration
- Purified Terephthalic Acid
- Vinyl Chloride Monomer etc.
- Polysilicon
- Plastics

## Our Range of Products

EXOTIC **FABTECH** with its governance over Exotic metals like **Titanium, Tantalum, Nickel, Hastelloy 'B' & 'C', Monel, Inconel, Zirconium, Niobium, Alloy 20, Alloy 904L, Stainless Steel** & other special alloys offers a wide range of products for various process Industries.

Our Product Range include...

- |   |  |
|---|--|
| • Reactors                              | • Tantalum Repair Kits For Glass Lined Vessels |
| • Columns & Towers                      | • Tantalum Evaporation Boards                  |
| • Heat Exchangers                       | • Tantalum Thermo Tips                         |
| • Tanks & Vessels                       | • Activated Titanium Metal Anodes              |
| • Filters                               | • Platinised Titanium Metal Anodes             |
| • Heating & Cooling Coils               | • Falling Film Evaporators                     |
| • Pipes & Pipe Fittings                 | • Spargers                                     |
| • Chemical Mixers                       | • Immersion Heaters                            |
| • Bayonet Heater                        | • Plug Screw Conveyors                         |
| • Anode Baskets                         | • Pumps & Blowers                              |
| • Jigs & Fixtures For Electro Plantings | • Shaft Sleeves                                |
| • Exotic Metal Fasteners                | • Tantalum Crucible For Diamond Polishing      |
| • Nickel Concentrators                  | • Thermowells and Thermowell Sleeves           |

## On-Site Services

EXOTIC **FABTECH** have fully qualified Titanium welders and fabricators to send anywhere in the world for site jobs. Whether you need a single weld made or need an entire piping system welded together, or an entire vessel repaired, we are ready to help. We also specializes in weld repair inside vessel seeing corrosion issues that need addressing. EXOTIC **FABTECH** has performed Titanium Field welding in process industries and can be called on for both emergency and planned shutdowns.



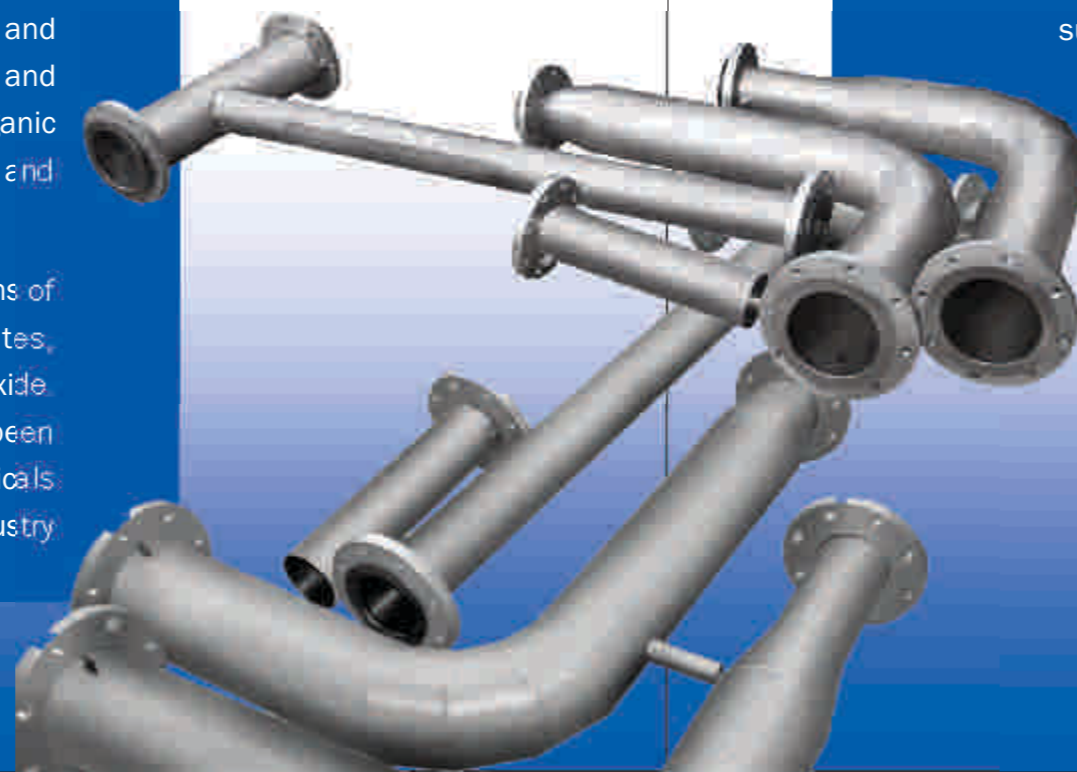


Since Titanium metal first became a commercial reality in 1950, corrosion resistance has been an important consideration in its selection as an engineering structural material. Combination of high strength and low density results in making Titanium superior to almost all other metals and become a standard metal for diverse applications.

Titanium and its alloys provide excellent resistance to general localized attack under most oxidizing, neutral and inhibited reducing conditions. They also remain passive under mildly reducing conditions.

The corrosion resistance of Titanium to moist chlorine gas and chloride containing solutions is the basis for the largest number of titanium applications. Titanium is widely used in chlor-alkali cells, dimensionally stable anodes, bleaching equipment for pulp and paper, heat exchangers, pumps, piping and vessels used in the production of organic intermediates, pollution control devices, and even for human body prosthetic devices.

Titanium is fully resistant to solutions of chlorites, hypochlorites, chlorates, perchlorates and chlorine dioxide. Titanium equipment has been used to handle these chemicals in the pulp and paper industry



for many years with no evidence of corrosion. Titanium is used today in nearly every piece of equipment handling wet chlorine or chlorine chemicals in a modern bleach plant, such as chlorine dioxide mixers, piping, and washers.

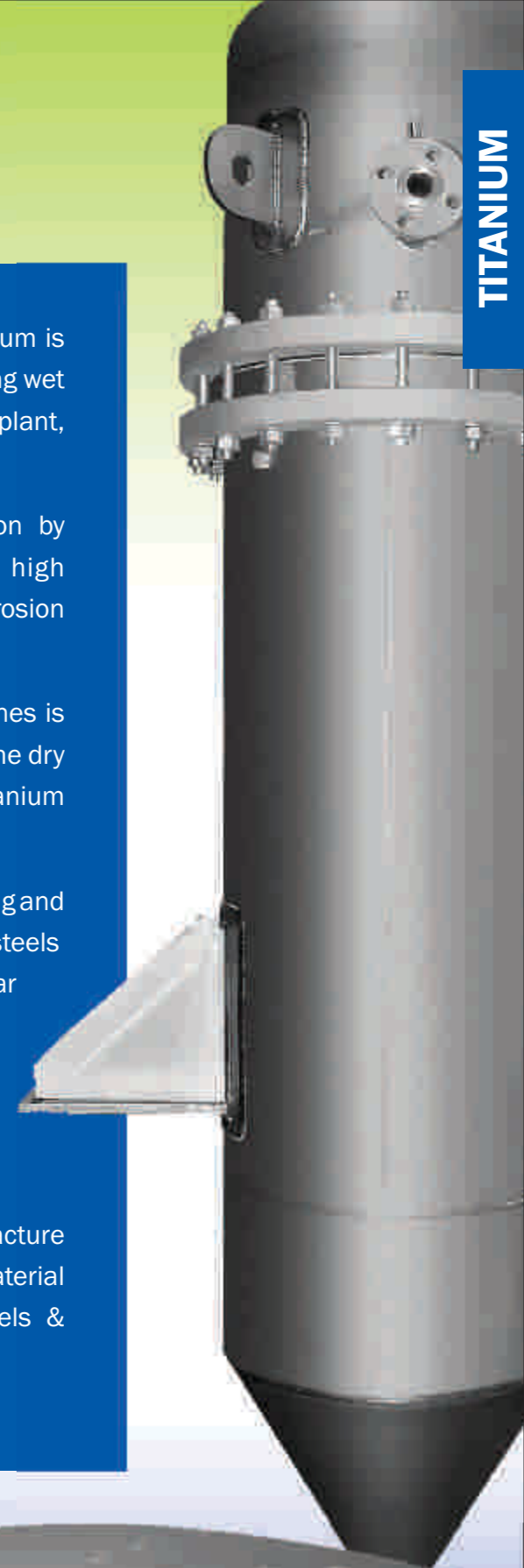
Titanium has excellent resistance to corrosion by neutral chloride solutions even at relatively high temperatures. Titanium generally exhibits very low corrosion rates in chloride environments.

The resistance of titanium to bromine and iodines is similar to its resistance to chlorine. It is attacked by the dry gas but is passivated by the presence of moisture. Titanium is reported to be resistant to bromine water.

Titanium has been extensively utilized for handling and producing nitric acid in applications where stainless steels have exhibited significant uniform or intergranular attack.

Titanium is highly resistant to corrosion by inorganic salt solutions. Corrosion rates are generally very low at all temperatures to the boiling point.

We at EXOTIC **FABTECH** design and manufacture varieties of equipments and components in Titanium material such as Heat Exchangers, Reactors, Vessels & Tanks, Pipes & Fittings etc.





# TANTALUM

Tantalum is a refractory metal with a melting point of 5425 °F (2996 °C). It is a tough, ductile metal which can be formed into almost any shape. It is used in corrosion resistant applications for environments no other metal can withstand.

Tantalum is the most corrosion resistant metal in common use today. The presence of a naturally occurring oxide film on the surface of Tantalum is the reason for its extreme corrosion resistant properties. It is inert to practically all organic and inorganic compounds. Its corrosion resistance is very similar to glass as both are unsuitable for use in hydrofluoric acid and strong hot alkali applications. For this reason Tantalum is often used with glass lined steel reactors as patches, dip tubes, piping and overhead condensers. Tantalum is inert to sulfuric and hydrochloric acid in all concentrations below 300 °F. Attack up to 400 °F is not significant and is in common use up to 500 °F. Tantalum is not attacked by nitric acid in concentrations up to 98% and temperatures up to at least 212 °F. Tantalum has proven itself to be totally inert in many applications.

The corrosion resistance, Heat transfer properties and workability of Tantalum make it a perfect construction material for a wide range of equipment and applications. Tantalum is used in heat exchangers, condensers, columns, reactors, helical coils, pipe spools, valve linings and a variety of other components exposed to extremely corrosive fluids. It can be fabricated into most TEMA design shell and tube heat exchangers and bayonet heaters for chemical, petrochemicals and pharmaceutical applications. Tantalum can be clad to carbon steel to form a bimetallic material of construction. The Tantalum is used as a corrosion barrier while the substrate is used to contain pressure and stress. The corrosion resistance of Tantalum together with the low cost and high strength of carbon steel can often be the most economical choice for high pressure equipment.

Tantalum is the material to consider in any application where corrosion is a factor and the long-term benefits of reduced downtime, increased life expectancy and profitability is important.

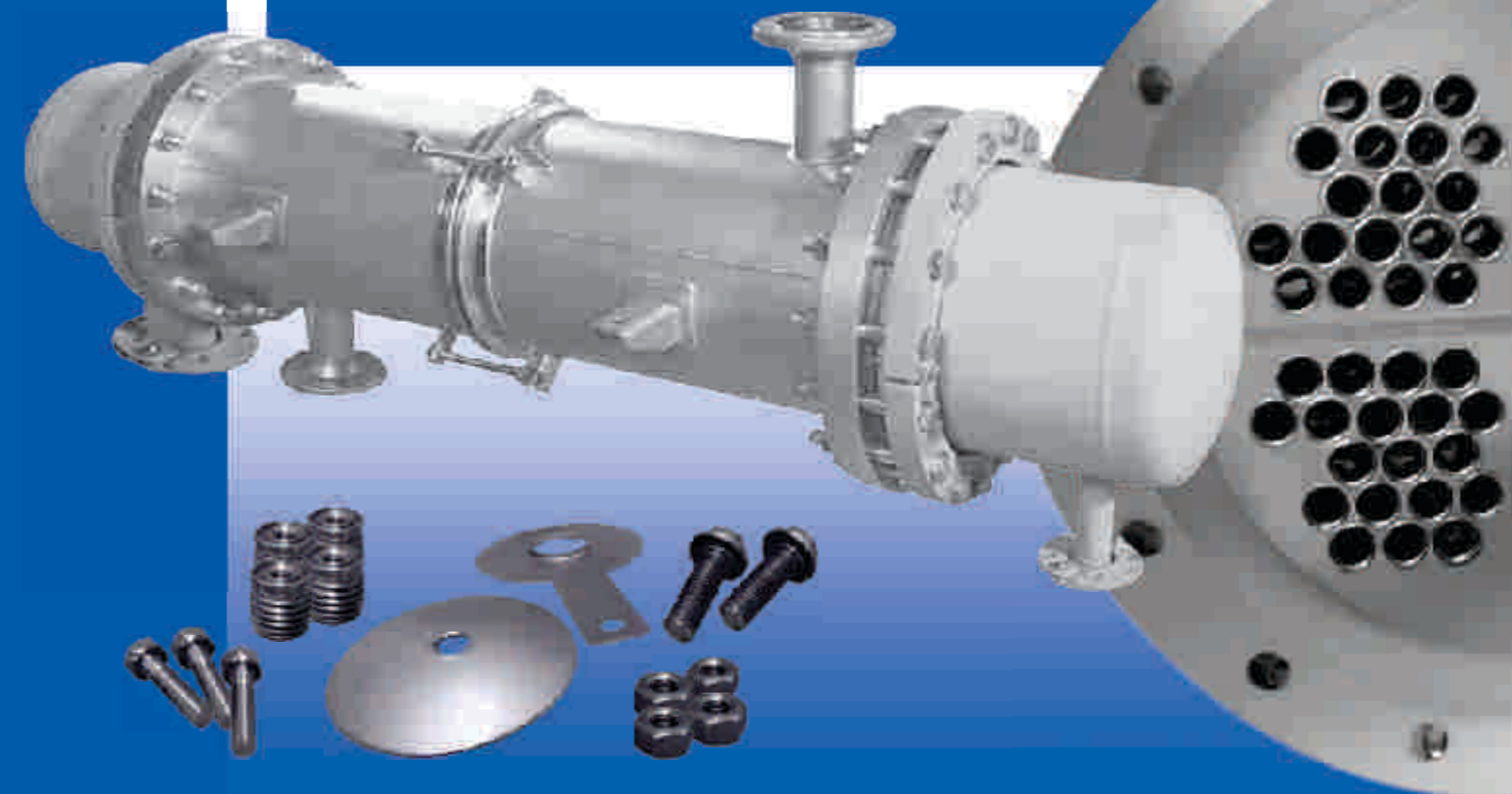


# NICKEL

Commercially pure or low alloy nickel finds its main application in chemical processing and electronics. Because of pure nickel's corrosion resistance, particularly to various reducing chemicals and especially to caustic alkalis, nickel is used to maintain product quality in many chemical reactions, particularly in the processing of foods and synthetic fibre manufacture.

Nickel is highly resistance to many corrosive media from acid to alkaline. It is extremely high resistance to caustic alkalis including the molten state. It has resistance to mineral acids varies according to temperature and concentration and whether or not the solution is aerated. Corrosion resistance is better in non-aerated acids. In acid, alkaline and neutral salt solutions, Nickel (Alloy 200) shows good resistance.

Equipment made out of Nickel Alloy 200/201 is used in food production, such as the handling of cool brines, fatty acids and fruit juices vessels in which fluorine is generated and reacted with hydrocarbons. It is used in manufacture and handling of sodium hydroxide, particularly at temperatures above 570 deg.F. It is also used in production of viscose rayon and manufacture of soap.

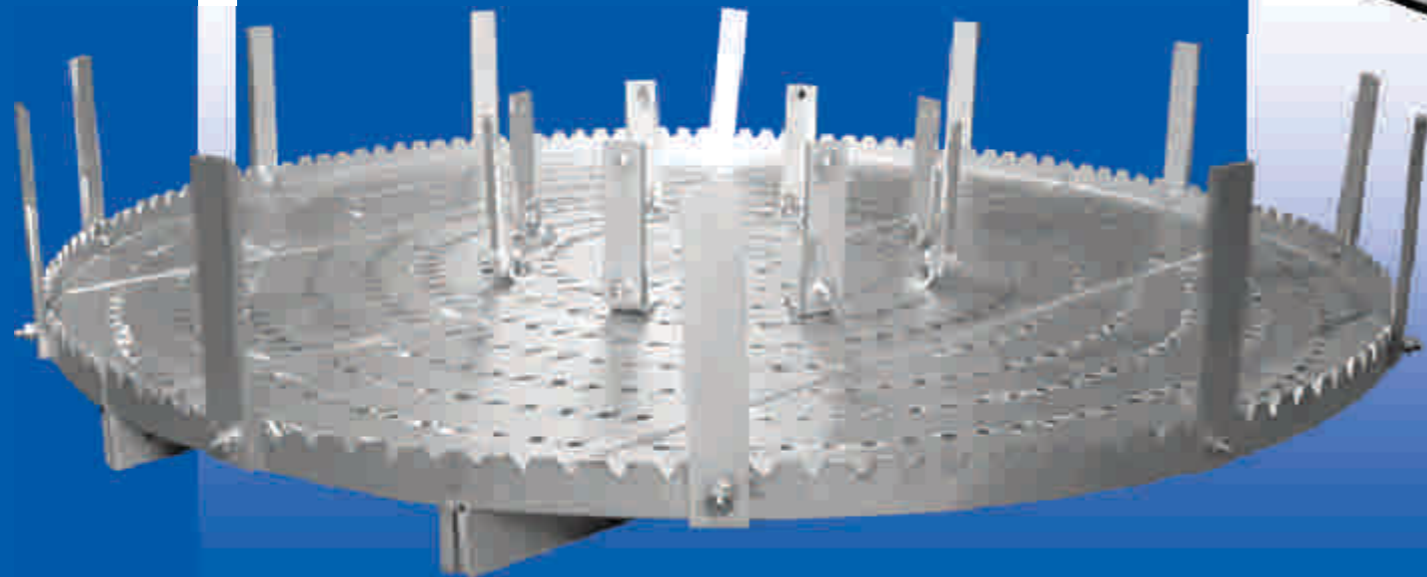


## HASTELLOY C 276

HASTELLOY C 276 alloy is a nickel-molybdenum-chromium wrought alloy that is generally considered a versatile corrosion resistant alloy. C-276 alloy need to be solution heat-treated after welding and has vastly improved fabricability. This alloy resists the formation of grain boundary precipitates in the weld heat-affected zone, thus making it suitable for most chemical process applications in the as welded condition.

C-276 alloy has excellent resistance to localized corrosion and to both oxidizing and reducing media. Because of its versatility, C-276 alloy can be used where “upset” conditions are likely to occur or in multipurpose plants. Hastelloy C-276 alloy has excellent resistance to a wide variety of chemical process environments, including strong oxidizers such as ferric and cupric chlorides, hot contaminated media (organic and inorganic), chlorine, formic and acetic acids, acetic anhydride and seawater and brine solutions. It is used in flue gas desulfurization systems because of its excellent resistance to sulfur compounds and chloride ions encountered in most scrubbers.

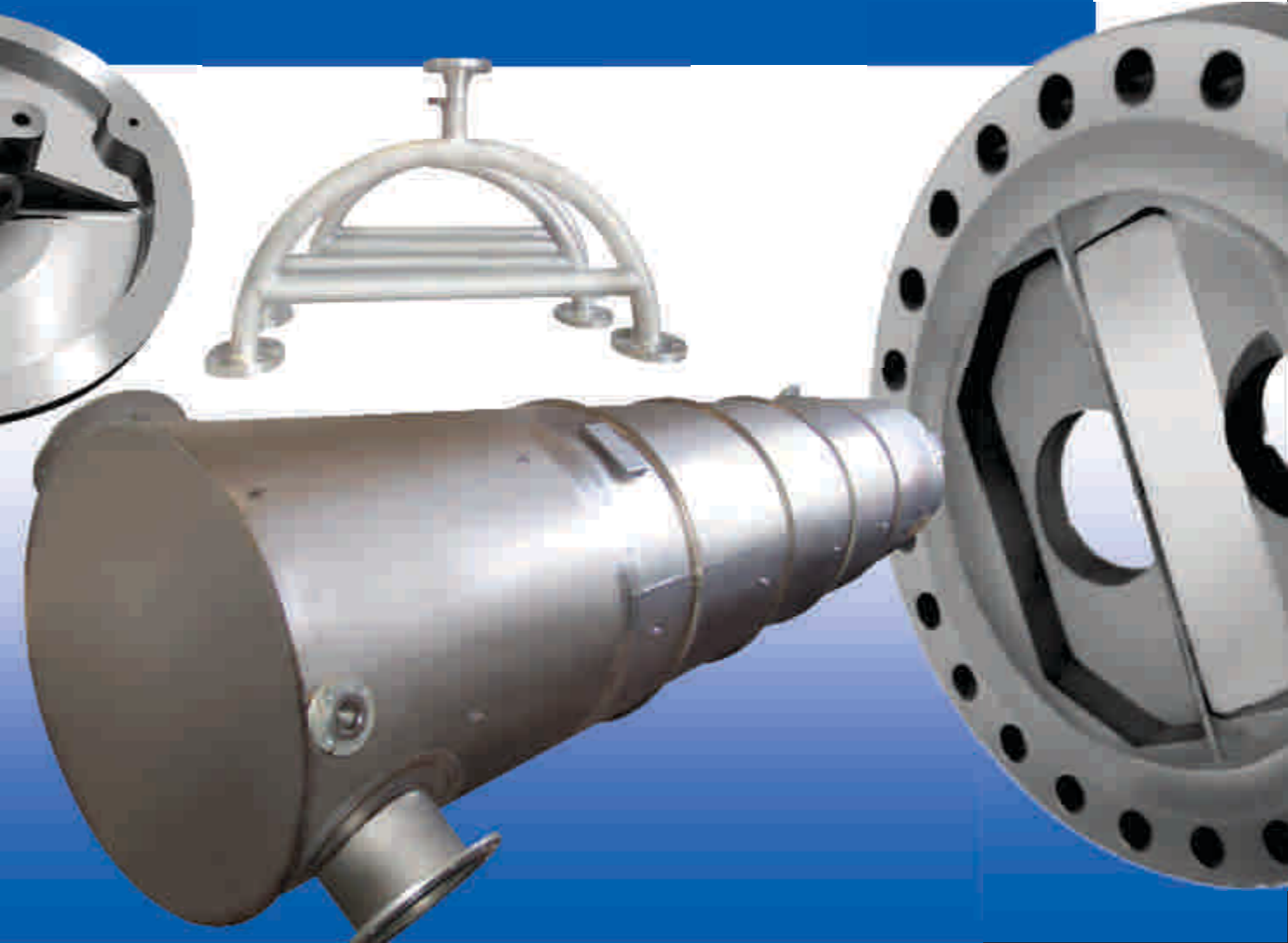
It is also one of the few materials that withstands the corrosive effects of wet chlorine gas, hypochlorite and chlorine dioxide.



## HASTELLOY C 22

HASTELLOY C 22 alloy is a versatile nickel-chromium-molybdenum-tungsten alloy with better overall corrosion resistance. C-22 alloy has outstanding resistance to pitting, crevice corrosion, and stress corrosion cracking. It has excellent resistance to oxidizing aqueous media including wet chlorine and mixtures containing nitric acid or oxidizing acids with chloride ions. Also, C-22 alloy offers optimum resistance to environments where reducing and oxidizing conditions are encountered in process streams. Because of such versatility it can be used where “upset” conditions are likely to occur or in multi-purpose plants.

C-22 alloy has exceptional resistance to a wide variety of chemical process environments, including strong oxidizers such as ferric and cupric chlorides, chlorine, hot contaminated solutions (organic and inorganic), formic and acetic acids, acetic anhydride, and seawater and brine solutions.





# DUPLEx STEEL

Austenitic-ferritic stainless steel also referred to as Duplex Stainless Steel, combine many of the beneficial properties of ferritic and austenitic steels. Due to high content of chromium and nitrogen, and often also molybdenum, these steels offer good resistance to localized and uniform corrosion. The duplex microstructure contributes to the high strength and high resistance to stress corrosion cracking.

Duplex Stainless Steels higher thermal conductivity gives them a distinct advantage over the austenitic stainless steel in heat transfer application. The downside is in their difficulty in welding and Quality Control. Heat input, cooling rates and interpass temperatures must be controlled or the corrosion resistance, strength, toughness, ductility and resistance to stress corrosion cracking will be compromised. Exotic Fabtech's expertise in welding reactive metals makes us more qualified to handle the Duplex Stainless Steel alloys compared to fabricators who have a history in only Austenitic Stainless Steel

We at Exotic Fabtech handles Duplex SS such as S32101, S32304, S32205, S31803, S32750 etc. Duplex steel equipment are mostly used in Pulp and Paper Industries, Desalination Plants, Seawater, Flue-gas cleaning etc.



# SS 904L

SS 904L is a high-alloy austenitic stainless steel with low carbon content. The grade is intended for use under severe corrosive conditions. It has been application proved over many years and was originally developed to resist corrosion in dilute sulphuric acid. It is standardized and approved for pressure vessel use in several countries. Structurally, 904L is fully austenitic and is less sensitive to precipitation ferrite and sigma phases than conventional austenitic grades with high molybdenum content.

Characteristically, due to the combination of relatively high contents of chromium, nickel, molybdenum and copper 904L has good resistance to general corrosion, particularly in sulphuric and phosphoric conditions.

SS904L has good resistance to pitting and crevice corrosion and very good resistance to stress corrosion cracking. This can be used for a maximum service temperatures of 450 deg.C.

SS904L fabricated equipment are mostly used in production and transport of sulphuric acid, metal pickling in sulphuric acid, production and concentration of phosphoric acid. This can also be used in seawater, brackish water, condensers, heat exchangers and pipe work in paper and allied industries.



# ALLOY 20

Alloy 20 is one of the "Super" stainless steels that was designed for maximum resistance to acid attack. It's nickel, chromium, molybdenum and copper content contribute to its overall resistance to chloride stress corrosion cracking and general pitting attack. The alloy is stabilized with columbium to minimize carbide precipitation during welding. It has good mechanical properties and can be fabricated with comparative ease.

Although the alloy was designed for use in sulphuric acid related industries, it finds wide usage throughout the chemical processing industry. It also is used for processing pharmaceuticals, food, gasoline, solvents, plastics, explosives, synthetic fibers and many other products.

It has superior resistance to stress-corrosion cracking in boiling 20 to 40% sulphuric acid. It has excellent general corrosion resistance to sulphuric acid. Also it has excellent resistance to chloride stress corrosion cracking. Alloy 20 equipment are mainly used in food and dye production, sulphuric acid application etc.

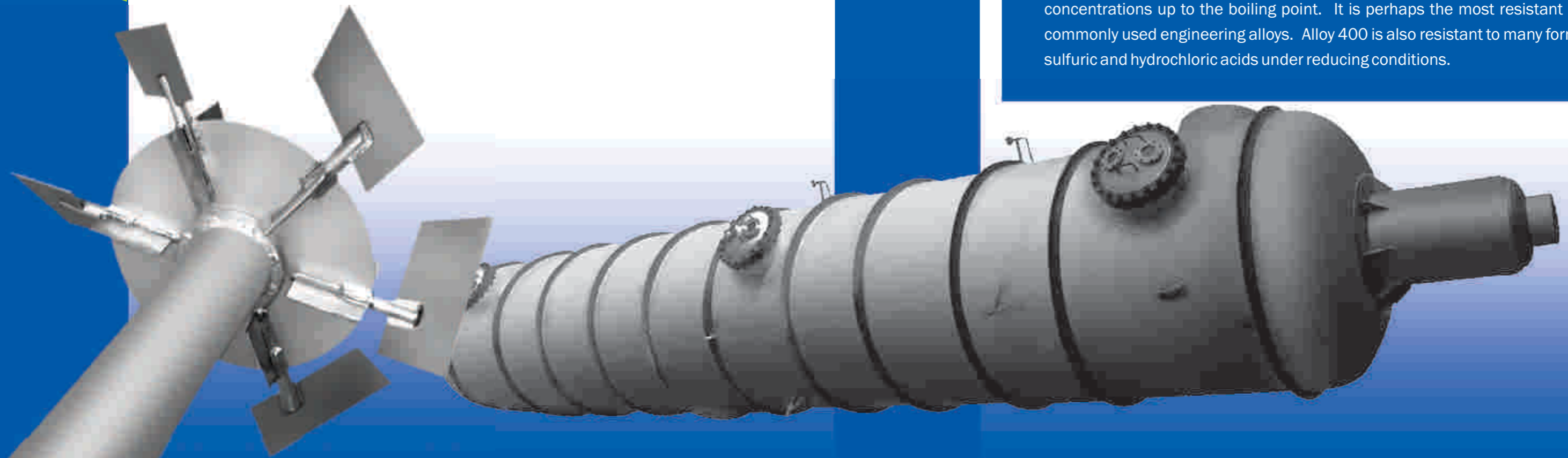
# MONEL

MONEL 400 is a solid-solution alloy. Alloy 400 is widely used in many fields, especially marine and chemical processing. Typical applications are valves and pumps; pump and propeller shafts, marine fixtures and fasteners; electrical and electronic components; springs; chemical processing equipment; gasoline and fresh water tanks; crude petroleum stills; process vessels and piping; boiler feedwater heaters and other heat exchangers; and deaerating heaters.

MONEL alloy 400 exhibits resistance to corrosion by many reducing media. It is also generally more resistant to attack by oxidizing media than higher copper alloys. This versatility makes alloy 400 suitable for service in a variety of environments.

Alloy 400 is widely used in marine applications. While alloy 400 products exhibit very low corrosion rates in flowing seawater, stagnant conditions have been shown to induce crevice and pitting corrosion. Alloy 400 is also resistant to stress corrosion cracking and pitting in most fresh and industrial waters.

Monel alloy 400 offers exceptional resistance to hydrofluoric acid in all concentrations up to the boiling point. It is perhaps the most resistant of all commonly used engineering alloys. Alloy 400 is also resistant to many forms of sulfuric and hydrochloric acids under reducing conditions.





# Certificates

