

The Weights and Means of Scrap

Volume II

**Applications & Uses of Stainless & Alloys
A Reference Guide**

Larry M. Clark

THE WEIGHS & MEANS OF SCRAP
Applications & Uses of Stainless & Alloys
A Reference Guide

Volume II

Published By

Nimo Publishing, LLC
Attn Larry M. Clark
P. O. Box 836911
Richardson, TX 75083

First Edition

ISBN-978-0-9848827-4-8

Copyright © 2012 LARRY M. CLARK All rights reserved, including the right to reproduce this work in any format by any means to any length, including electronic or mechanical, including photocopying, recording, or by any information storage and retrieval system without the written consent of the author.

Graphic Production & Printing By
Lone Star Productions
13820 Methuen Green, Dallas, Texas 75240
972-671-0002

Printed in Canada

Table of Contents

Chapter I.....	1
<i>Applications & Uses of Stainless & Alloys</i>	
Chapter II.....	195
<i>Applications of Aircraft and Land Based Engines</i>	

Chapter I

Applications & Uses of Stainless & Alloys

Abrasive Screens, Racks and Wear plates

200 Series Stainless, Nitronic Stainless

Abrasive and Corrosion Resistant Screens, Racks and Wear Plates

18Cr-2-Mn (same as Nitronic 32)

18Cr-13-Mn (same as Nitronic 33)

409/409HP Stainless

409 Ni

NITRONIC 32 (same as 18Cr-2-Mn)

NITRONIC 33 (same as 18Cr-13-Mn)

NITRONIC 60

ABS Valve Springs - exposed to extreme cycles

DURATHERM 600

Acetic Acid Distillation - components in chemical plants

AL 2205 (same as DP-8 Duplex -Avesta 2205)

2205 Duplex

Acetic Acid Fittings

AL 2205 (same as DP-8 Duplex -Avesta 2205)

2205 Duplex

Hastelloy B-3

Hastelloy B-4

Acetic Acid Flanges

Hastelloy B-3

Hastelloy B-4

Acetic Acid Heat Exchangers

AL 2205 (same as DP-8 Duplex -Avesta 2205)

2205 Duplex

Acetic Acid Hot Processing

309/310 Stainless

Acetic Acid Piping Systems

Hastelloy B-2
Hastelloy B-3
Hastelloy B-4

Acetic Acid Production

Hastelloy® C-4 alloy
CW-2M (equiv to C-4 Casting Alloy)
Hastelloy C-22

Acetic Acid Pumps

AL 2205 (same as DP-8 Duplex -Avesta 2205)
2205 Duplex
Hastelloy B-2

Acetic Acid Shafts

AL 2205 (same as DP-8 Duplex -Avesta 2205)
2205 Duplex

Acetic Acid Valves

AL 2205 (same as DP-8 Duplex -Avesta 2205)
2205 Duplex
Hastelloy B-2

Acetic Acid Vessels

Hastelloy B-2

Acetic Anhydride

Hastelloy® C-4 alloy
Hastelloy C-22
CW-2M (equiv to Hastelloy C-4 Casting Alloy)

Acid Etching/Complex Acid Mixture

Hastelloy C-22
CX2MW (ACI) (equiv to Hastelloy C-22)

Acid Evaporators - in the fertilizer industry

Hastelloy G-30

Acid Production

HR-11N

Actuators

Maraging 200 Steel
Maraging 250
VascoMax® C Maraging Steel
AerMet® 100 Alloy
AerMet® 310 Alloy
Hyperco® 15 Alloy

Actuator Bearings - in sanitary applications

CY5SnBiM (ACI) (equiv to Waukesha 88)

Aeronautical Industry

IN 100

Aggressive Environmental Conditions - where high strength is required

20Mo-6HS Alloy

Agitators - in corrosive applications

ULTIMET

Agrichemicals

Hastelloy® C-22 HS

20CB3® Alloy

Agrichemical Bolts, Nuts and Washers

20CB3® Alloy (same as Alloy 20CB3®)

Agricultural Feeding Equipment

Nirosta 4003

Air Bag Containers

200 Series Stainless, Nitronic Stainless

Air Pollution Control Systems

Incoloy 25-6Mo (same as Alloy 904-6Mo)

Air Pre-Heaters - diesel engines

Haynes 556

Air pre-heaters - designed to heat air for thermal power stations producing electric power from fossil fuels or waste

E-BRITE® (same as E-BRITE 26-1)

Air Pre-Heaters - paper and pulp industries

E-BRITE® (same as E-BRITE 26-1)

Air Pre-Heaters - petrochemical industries

E-BRITE® (same as E-BRITE 26-1)

Alkalis Processing Equipment

Nickel 200 Alloys

Aluminum Extrusion Dies

H-13

Pyromet 538 (same as Nitronic 40, 21-6-9 or 21Cr-6Ni-9Mn)

Ammonia Furnace Coils

HP 35Ni-25Cr (HP)

Ammonia Processing Equipment

HK (equiv 310 25/20)

309/310 Stainless

Anchoring Systems

304LN Stainless

316LN Stainless

2205 Duplex Stainless

AL 2205 (same as DP-8 Duplex and Avesta 2205)

NITRONIC 30 (same as 204 Stainless)

NITRONIC 32 (equiv to 18Cr-2-Mn)

CF-3MN (ACI) (equiv 316N)

Monel Alloy R-405

Ti 15-3-3-3

Anhydrous Caustic Manufacturing – handling and processing at elevated temperature

CZ-100 (same as Cast Nickel)

Annealing Furnace Inner Covers - coil annealing furnaces

Haynes 556

Anodes and Grids - electronic valves

Nickel 205 Alloy

Antennas

200 Series Stainless, Nitronic Stainless

Antennas (Home) Applications

201/201HP Stainless

201 Modified

NITRONIC 30 (same as 204 Stainless)

Antenna Wire

409 Cb Stainless

Custom 631 (same as 17Cr-7Ni Stainless)

Appliances - household

302B

304 Stainless

304 H

430M Heat Resisting

Chromalloy® O

CF-10 (equiv to 304H)

Chlorimet 3 (equiv to Casting Alloy CW6M)

Hastelloy X

Incoloy 800-H

Nimonic 75

RA 330

Applications - where notch tensile strength and fracture toughness are needed

Custom 465® Stainless

Aqueous Fluoride Handling Systems - nuclear waste disposal

NITRONIC 50 (same as Aquamet 2 or 22-13-5)

Arc Furnace Door Guide

UNCo 50

Architectural Applications

E-BRITE® (same as E-BRITE 26-1)

AL-2003 Duplex

Architectural Finished Hardware and Moldings - building trades

430 Stainless

Armor Fasteners

AerMet® 100 Alloy

AerMet® 310 Alloy

Armoring Wire - oil and gas wells, springs, yacht rigging and non-magnetic cables

20Mo-6HS Alloy

Asphalt Industry

Ni Hard

Ni Hard Type 4

Automotive Air Bag Containers

201/201HP Stainless

201L

Automotive Antennas

302B

Custom 631 (same as 17Cr-7Ni Stainless)

Automotive Catalytic Converter Shells

409 Cb

Automotive Catalytic Support Systems

Nicofer 6025 HT

Automotive Connector Rods & Cylinders

Copper Nickel

Automotive Eddie-Current Producing Mechanical Energy (holding, lifting, attracting, repelling, conveying, driving & separating)

Alnico III

Automotive Engine Bolts/Fasteners

216 Stainless

Automotive Exhaust Components

409 Cb

410 S Stainless

441 Stainless (Ti Stabilized)

444 Stainless

468 Stainless

INCOLOY 864

AL 332Mo™

Automotive Exhaust Components - automotive applications replacing 410 where Type 410 had insufficient corrosion resistance

Custom 450® Stainless

Automotive Exhaust Flanges

409/409HP Stainless

409 Ni

410 Cb

Automotive Exhaust Gas Re-Circulation Tubes

INCOLOY 864 (same as AL 332Mo™)

Inconel 600

Automotive Exhaust Manifolds

334 Stainless

Automotive Exhaust Systems

334 Stainless

Automotive Engine Exhaust Fittings

CF-8C (ACI) (equiv to 347 Stainless)

Automotive Engine Fittings, Mountings, and Fan Parts

CF8 (ACI) (equiv to 304 Stainless)

Automotive Exhaust Flanges

409/409HP Stainless

409 Ni

410 Cb

Automotive Fuel Cells

E-BRITE® (equiv to E-BRITE 26-1)

Automotive Hardware

203/203EZ Stainless

205 Stainless

Invar 36

Automotive Hose Clamps Strapping

201/201HP Stainless

201L

204 Stainless (equiv to Nitronic 30)

301 Stainless

403 Stainless

NITRONIC 30 (equiv to 204 Stainless)

Automotive Instrument Panel Trim

430 Stainless

Automobile Mufflers

439/439HP Stainless

Automobile Muffler Hangers and Brackets

409 Cb

Automotive Piston Rings - internal combustion engines

201/201HP Stainless

201L

Ni-Resist Type 1

Automotive Sealed Beam Automobile Headlamps

Al 42 Nickel Sealing Iron

Auto Shredders or Fragmentizer Hammers, Grates - Auto Shredders

Manganese Hadfield Steel Castings

Automotive Tie Rods Ends

20CB3[®] Alloy (equiv to Alloy 20CB3[®] and Carpenter 20CB3[®])

Automotive Trim / Moldings

301 Stainless

302B

430 Stainless

430M Heat Resisting

430Ti Stainless

431 Stainless

431 Cast Ni Bearing

436 Stainless

Automotive Turbo Superchargers - requiring intermittent heating between 800°F and 1650°F

321 Stainless

Automobile Turbocharger Wheels - automotive and power generation industries

GMR 235

Inconel 713

Automotive Two-Piece Exhaust Valves - for both diesel and gasoline engines

21-12N Valve Steel

Automobile Wheel Covers

301 Stainless

301L Stainless

301LN Stainless

Automobile Windshield Wiper Arms - where Type 304 would be considered

204-Cu Stainless

Automobile Windshield Wiper Blade Holders and Clips

301L Stainless

301LN Stainless

Auxiliary Heaters for Military Vehicles

Haynes Alloy 214

Axles - used on portable medical equipment

416 Stainless (No.5)

416BQ (No.5 BQ)

Ball Bearings - high temperature service

L-605 (same as HS 25, HR-240)

Stellite 25 (same as L-605)

Stellite[®] 31 (same as X-40)

Ball Bearing Blanks

Stellite[®] Star J

Ball Bearings & Races

420 Stainless

440A Stainless

440B Stainless

440C Stainless

440-XH® Alloy

Ball Check Valves

420 Stainless

420F Stainless

440-XH® Alloy

Ball Screws - parts with a hard corrosion resistant case and a tough

Pyrowear® 675 Stainless

Ball Studs - trailer hitches

440-XH® Alloy

Ball Valves

REXALLOY®™ GRADE 33

Ball Valve Seats

REXALLOY®™ GRADE 33

Ballistic Tolerant Components

AerMet® 100 Alloy

AerMet® 310 Alloy

Barge Liners

Inconel 600

Barrier Retaining Walls and Sidewalk Rebar

304LN Stainless

316LN Stainless

2205

Duplex Stainless

AL 2205

(equiv to DP-8 Duplex and Avesta 2205)

NITRONIC 32

(equiv to 18Cr-2-Mn)

CF-3MN

(ACI) (equiv 316N)

Bases for Semiconductor Devices - due to its low expansion characteristic

ELKON® 100M (Pure Molybdenum)

Battery Cases

Nickel 205 Alloy

Battery Components

Nickel Commercially Pure Alloy

Bearings

CBS-50 NIL Bearing Steel

Bearings - critical carburized parts

CS5-421

CS5-421

Bearings - engine

440B Stainless

440C Stainless

CBS-50 NIL Bearing Steel
VSM STEEL

Bearings - engine oil pump

Pyrowear® 675 Stainless

Bearing Parts

Refractaloy 26
Refractaloy 70

Bearings - Pivots Bearings

420 Stainless
420F Stainless

Bearings - Roller Bearings

NITRONIC 60

Bearing Type Applications - which require a hard corrosion resistant case and a tough, ductile core such as general bearings, engine bearings, rod end bearings, pump bearings, ball screws, cam followers, planetary gearboxes, well drilling equipment

Pyrowear® 675 Stainless

Beer Tank Valves and Hex Nuts

CY5SnBiM (ACI) (equiv to Waukesha 88)

Bell Ringers

Alnico, Alnico II, Alnico III, Alnico IV

Bellows and Seals - semiconductor industries

AM350 Precipitation Hardenable

Bending Rolls

440-XH® Alloy

Better Pitting and Crevice-Corrosion Resistance - *are required than 20Cb-3® stainless offers*

20Mo6 (equiv to Carpenter 20Mo6)

Beverage Homogenizer Units - *as suction and discharge valves when mated properly*

Rexalloy 35 Ball Valve

Beverage Processing Equipment

420 Stainless
444 Stainless
2304 Duplex
302B
304 Stainless (equiv to CF-3)
305 Stainless
2205 Duplex Stainless
2304 Duplex
420 Stainless
444 Stainless
CF-3 (ACI) (equiv to 304L)
CF-10 (Equiv to 304H)

Beverages Uses - in general

2205 Duplex Stainless

Bicycle Frames

Maraging steel

Ti Grade 5 (equiv to 6Al-4V)

Grade 9 (equiv to 3-2.5)

Bi-Metal Thermostat Strip

Al 42 Nickel Sealing Iron

Bi-Metal Thermostats Low Expansion Side

Invar 36 Alloy

Bi-Metallic Components - electrical and electronic industries

Invar 36

Monel Alloy 401

Black Liquor - byproduct during the production of paper pulp

CF-8M (ACI) (equiv to Wrought 316)

Blanking Dies

440-XH[®] Alloy

Blast Furnace Equipment

CF-3 (ACI) (equiv to Wrought 304L)

CF-3MN (ACI) (equiv to Wrought 316N)

Bleach in Chloride Environments

25Ni-20Cr-6Mo Stainless

Bleach Systems - *acidic chloride solutions in evaporation and crystallization of salts*

254 SMO

254 SMO Cast (equal to CK-3MCuN)

INCO Alloy MS-250

CK-3MCuN (equiv to 254 SMO)

CK-3MN (ACI) (equiv Cast SR50A)

CN-3M (ACI) (equiv to J 700)

CN-3MN (ACI) (equiv to AL-6XN)

JS 700[®]

Nicrofer 3033

Blenders - in corrosive applications

ULTIMET

Blow-Off Door Assembly on Missiles

Refractaloy 70

Boat Rails and Hardware

317 Stainless

Boat Shafting

Nitronic 50 (equiv to 22-13-5 or Aquamet 2)

Boilers - municipal and utility applications

HR-160

HS 556

Boiler Baffles

446 Stainless

Boiler Combustion Burner and Diffuser

UNCo 50

Boiler Components

URANUS B-66

HS 556

Boiler Tube Shields - *to prevent in-bed erosion of the primary super heater tubes in the combustion zone of a CFB boiler unit fired with high sulfur, high chlorine coal, prone to fouling problems*

353 MA

Boiler Welded Tubes

603 GT

Boiling Concentrated Organic Acids - *such as acetic, formic, lactic, and fatty*
CW12MW (equiv to Hastelloy C Casting Alloy)

Bolting for Ships and Submarines

Copper Nickel

Bolts - *corrosive environment under heavy loads and high speeds at elevated temperatures*

CS5-421

Bolts - general industrial

431 Stainless

Bolts - high strength

NITRONIC 32 (equiv to 18Cr-2-Mn)

Bolts and Nuts – electronics

Gall-Tough® Stainless

Gall-Tough® PLUS Stainless

Bolts and Nuts - medical components, fittings

303 Stainless

416BQ (No.5 BQ)

Bolts and Nuts - nuclear reactor applications

Gall-Tough® Stainless

Gall-Tough® PLUS Stainless

Bolts, nuts, washers - agrichemicals

Carpenter 20CB3® (same as Alloy 20CB3®)

Bone Drill Bits

L-605 (same as HS 25, HR-240)

Stellite 25 (same as L-605)

Bourdon Tubes - *included springs, diaphragms and supports in gauges*

Alloy® 43-PH Low Expansion

Brackish Water - *chloride environments*

25Ni-20Cr-6Mo Stainless

Brackish Water - coolant systems

Nicrofer 3033

Brads - pressed or stretch formed to profiles but also used as flat structural components in railcars

301L Stainless

301LN Stainless

Brass Casting Dies

Stellite 7

Brass Extrusion Dies

Stellite 7

Brazing Alloy

Copper Nickel

Brazing Furnace Components - steel industries

HD (ACI) (equiv to Wrought 327)

HF (ACI) (equiv to Wrought 302B)

HF-30 (Equiv to Wrought 302B)

Brewery Applications - for multi-effect evaporators for brines

AL6-XN

Brewery Homogenizer Units - as suction and discharge vales when mated properly beverage processing plants

Rexalloy 35 Ball Valve

Rexalloy 44

Brewery Tanks

2205 Duplex

AL 2205 (equiv to DP-8 Duplex or Avesta 2205)

Brewery Tank Valves

Waukesha 88

Brick Industry

Ni Hard

Ni Hard Type 4

Brick Molds - firing of bricks

Chromium

Bridge Decks, Bridge Parapets, and Bridge Pilings Rebar

304LN Stainless

316LN Stainless

2205 Duplex Stainless

AL 2205 (equiv to DP-8 Duplex, Avesta 2205)

NITRONIC 30 (equiv to 204 Stainless)

NITRONIC 32 (equiv to 18Cr-2-Mn)

CF-3MN (ACI) (equiv to 316N)

Bridge Diaphragm Frames

Manganese Hadfield Steel Castings

Bridge Pin and Hanger Expansion Joints

Gall-Tough® Stainless
Gall-Tough® PLUS Stainless
NITRONIC 60

Bridge Tie Wire and Dowels - *for Coastal Piers and Wharves*

2205 Duplex Stainless
Bridges
AL 412 (equiv to 410L, Duracorr)

Brine Solutions

Hastelloy® C-4 alloy (equiv to CW-2M)

Brown-Stock Washers - *pulp & paper industry*

CD3MCuN (equiv Wrought Duplex FERRALIUM 255-3SC)

Building-Up Hot Stamping

Stellite 21

Bulk Solid Handling Equipment - *including mixing tank*

200 Series Stainless, Nitronic Stainless

Burner Cups - *auxiliary heaters for military vehicles*

Haynes Alloy 214

Bus Frames

409 Stainless
409 Ni Stainless
410L (equiv to Duracorr or AL 412)
412 Stainless
200 Series Stainless, Nitronic Stainless

Bushings

409 Stainless
440C Stainless
440-XH® Alloy
Manganese Hadfield Steel Castings

Bushings - medical Components

303 Stainless

Butterfly Valves - *emission-control devices where cold forming and welding are involved*

Maniflex® II Alloy

Buttress Screws - *where Type 304 would be considered*

204-Cu Stainless

Cables (Home) Applications

201/201HP Stainless
NITRONIC 30 (equiv to 204 Stainless)

Caissons and Splash Zone

Copper Nickel

Calciners

HR 150
HS 556
HR-160
353 MA

Calcium Production

HI

Camera Trim

430 Stainless

Capacitors for Electronic Equipment - *citizen band radios, smoke detectors, heart pacemakers, and automobiles*

Tantalum
Tantalum, Unalloyed Sintered

Capacitor Slug Leads

Dumet Core Rod

Carbon Disulphide Reformer Coils – *reformer furnaces*

HC (ACI) (equiv to 446 Stainless)

Carburized Parts - *such as bearings, cams, shafts, gears, and bolts operating in a corrosive environment under heavy loads and high speeds at elevated temperatures, and subject to very rigid inspection standards, but usage is not limited to such applications*

CS5-421
Inconel 600
INCOLOY 800

Cargo Tanks - *chemical tankers*

Avesta 2205 (equiv to AL 2205 and DP-8 Duplex)

Catalyst Grid Supports - *in ammonia burners*

Haynes 230

Catalyst - *in dyeing and in the tanning of leather*

Chromium

Catalytic Converters

409 Cb Stainless

Catalytic Converter Internals - *in acid production*

Haynes Alloy 214

Catalytic Support Systems - *in automotive applications*

Nicofer 6025 HT

Cathodes and Electrodes - *for electronic*

Nickel 270

Cathodes Plates - *in electronic tubes*

Nickel 220
Nickel 230

Cathode Ray Tube Gun Parts

Invar 36 Iron Thermostat Alloy

Invar 36

Mu-Metal

Nickel 211 Alloy

Cathode-Ray Tubes - used in analog oscilloscopes

Mu-Metal

Caustic Evaporators

Nickel 201 Alloy

Caustic Neutralizing Systems

Hastelloy C-22

Hastelloy G-35

Caustic Soda Production Equipment - such as cylinder liners, fittings, flow meters, pumps, and valves

CZ-100 (same as Cast Nickel)

Cellophane Manufacturing

Hastelloy C-22 (equiv to CX2MW)

Cement Industry

Ni Hard

Ni Hard Type 4

HR-160

HD (ACI) (equiv to Wrought 327)

409/409HP Stainless

409 Ni

410L (Duracorr, AL 412)

AL 412 (410L, Duracorr)

420 Stainless

Manganese Hadfield Steel Castings

Cement Kilns

HR-160

Cement Quarry Equipment

410L (equiv to Duracorr or AL 412)

Cement Slurry Pipelines

409 Stainless

Centrifugal Pump Seal Rings - municipal water plants

CD4MCuN

Centrifugally Cast Tail Shaft Sleeves

80-20 Cupro-Nickel Cast

Centrifuge Bowls - petrochemical industries

CB7Cu-1 (equiv to Wrought 17-4)

CB7Cu-2 (equiv to Wrought 15-5 PH)

65-30 Ni Cu Casting Alloy (M-35-2)

Centrifuge Equipment

ESCALOY 45 D Duplex (equiv to CE-8MN or Wrought 2507)
Ferralium 255 Duplex

Ceramic-to-Metal Seals - with alumina ceramics

Al 42 Nickel Sealing Iron

CFB Vortex Finders

353 MA

Chemical Cables

200 Series Stainless

Chemical Chains

200 Series Stainless

Chemical Flame Holders

HS 188

Chemical Furnace Parts

INCOLOY 800

Chemical Industry Hardware - baskets, belts, and other hardware in chemical industries where acids and alkaline solutions are used

TOPHET® Alloy A

Chemical Industry High-Temperature and Corrosion Resistant Plate and Retention Springs

DURATHERM 600

Chemical Industry High-Temperature Ball Bearings

L-605 (same as HS 25 and HR-240)
Stellite 25 (same as L-605)

Chemical Industry High-Temperature Springs

L-605 (same as HS 25 and HR-240)
Stellite 25 (same as L-605)

Chemical Industry Propeller Shafts

CB7Cu-1 (equiv to Wrought 17-4)
CB7Cu-2 (equiv to Wrought 15-5 PH)

Chemical Plant Hardware

Inconel 625 (equiv to LCF – HP)

Chemical Process - to Economically Protect End Products (from danger of contamination by metallic ions through corrosion)

Carpenter 20 (equiv to Durimet 20 and Cast Alloy CN-7M)

Chemical Process Air Pollution Equipment

Hastelloy C-276

Chemical Process Applications - in the as-welded condition

Hastelloy® C-4 alloy

Chemical Process Catalyst Grid Supports in Ammonia Burners

Haynes 230

Chemical Process Catalyst Support Grid

Hastelloy X

Chemical Process Chloride and Corrosive Application

25Ni-20Cr-6Mo Stainless

Chemical Process Columns

Hastelloy C-276

Hastelloy C-2000

Chemical Process Construction Material

Alloy 31 (equiv to Nicrofer 3127hMo)

Chemical Process Dampers

Hastelloy C-276

Chemical Process Desalination Operations

AL 2205 (equiv to DP-8 Duplex or Avesta 2205)

Chemical Process Ducts

Hastelloy C-276

Chemical Process Flight Screws

CB7Cu-1 (equiv to Wrought 17-4)

CB7Cu-2 (equiv to 15-5 PH)

Chemical Process Equipment

HS 556

316 Stainless

317 Stainless

AL 29-4[®] Stainless

AL 29-4-2C[®] Stainless

AL 29-4-2[®]

254 SMO

E-BRITE[®] (equiv to E-BRITE 26-1)

Greek Ascology (418 Stainless)

Incoloy 25-6Mo (equiv to Alloy 904-6Mo)

439/439HP

AL-2003 Duplex

AL 2205 (equiv to DP-8 Duplex and Avesta 2205)

DP-3 Duplex

DP-3W Duplex

Ferralium 255 Duplex

15-5 PH Stainless (equiv to 15Cr-5Ni)

17-4 PH Stainless (equiv to Custom 630 and 17Cr-4Ni)

20 Alloy (equiv to Durimet 20 and Cast Alloy CN-7M)

ALLCORR[®]

Alloy 31 (equiv to Nicrofer 3127hMo)

Hastelloy C-22

Hastelloy C-276

Hastelloy X

HR-11N
 Incoloy 800-H
 Incoloy Alloy 800HT
 Incoloy 801
 Incoloy 825
 Inconel 601
 Inconel 625 Plus
 Nickel Cast Alloy
 Nicrofer 45 (equiv to 45 TM)
 Ni-Resist Type 3
 Sanicro 28
 Allcorr
 Illium PD
 Nitronic Stainless

Chemical Process Evaporators

Hastelloy C-276
 Incoloy 825

Chemical Process Expansion Joints

Inconel 625 (equiv to LCF – HP)

Chemical Process Fans & Fan Housings & Equipment

DP-3 Duplex
 DP-3W Duplex
 DP-6 Duplex (equiv to 329 Stainless)
 DP-8 Duplex (equiv to AL 2205 and Avesta 2205)
 DP-11 Duplex (equiv to 2304)
 Hastelloy C-276
 ULTIMET

Chemical Process Fasteners

200 Series Stainless
 Custom 630 (equiv to 17-4 PH)
 Hastelloy B-3

Chemical Process Fittings

200 Series Stainless
 Custom 630 (equiv to 17-4 PH)
 Hastelloy B-3
 Hastelloy B-4

Chemical Process Fittings - for pumps and valves in applications in which parts are in relative motion under load without lubricants

Gall-Tough® Stainless
 Gall-Tough® PLUS Stainless

Chemical Process Flanges

Hastelloy B-3
 Hastelloy B-4

Chemical Process Flare Tips

RA 333

Chemical Process Flash Drier Components

Hastelloy X

Chemical Process Flight Screws

CB7Cu-1 (equiv to Wrought 17-4)

CB7Cu-2 (equiv to Wrought 15-5PH)

Chemical Process Flow Meters

CZ-100 (equiv to Cast Nickel)

Chemical Process Flue Gas Filters

2205 Duplex

AL 2205 (equiv to DP-8 Duplex and Avesta 2205)

Chemical Process Furnace Baffles

Hastelloy X

Chemical Process Gas Stack Heaters

Hastelloy C-276

Chemical Process Gears

Custom 630 (equiv to Wrought 17-4 PH)

Chemical Process Heat Exchangers

1815LCSi (equiv to 306 Stainless or AL-610™ and Cronifer 1815 LCSi)

18-17 LC Stainless (equiv to AL 611)

200 Series Stainless

304 Stainless

306 Stainless

317 Stainless

253 MA

E-BRITE® (equiv to E-BRITE 26-1)

AL 2205 (equiv to DP-8 Duplex -Avesta 2205)

Hastelloy C-276

Hastelloy C-2000

INCOLOY 800

Inconel 686

Chemical Process Heat Exchangers - *in extreme corrosion applications*

AL6-XN

Hastelloy C-276

Chemical Process High-Temperature Ball Bearings

L-605 (same as HS 25 and HR-240)

Chemical Process High-Temperature Bellows

Haynes 230

Chemical Process High-Temperature Ducts

Haynes 230

Inconel X-750

Chemical Process High-Temperature Heat Exchangers

Haynes 230

Chemical Process High-Temperature Hydrofluoric Acid Vapor

Haynes Alloy 242

Chemical Process High-Temperature Springs

L-605 (same as HS 25, HR-240)

Chemical Process Metal Dusting

Inconel 693

Chemical Process Mixing Tanks

Carpenter 20 (same as Alloy 20 and Durimet 20 and Cast ALLOY CN-7M)

Chemical Process Piping

1815LCSi (same as 306 Stainless, AL-610™ and Cronifer 1815 LCSi)

18-17 LC Stainless (same as AL 611)

306 Stainless

Avesta 2205 (same as AL 2205 and DP-8 Duplex)

Hastelloy B-3

Hastelloy B-4

Hastelloy C-276

Hastelloy C-2000

INCOLOY 800

Chemical Process Piping - *exposed to flue gas and solutions*

Carpenter Alloy (same as Alloy 20, Durimet 20 and Cast Alloy CN-7M)

Chemical Process Plants

20Cb3 Alloy Modified

Chemical Process Pollution Control Equipment

200 Series Stainless, Nitronic Stainless

Chemical Process Press Rolls

DP-8 Duplex (equiv to AL 2205 and Avesta 2205)

DP-11 Duplex (equiv to 2304)

Chemical Process Pressure Vessels

Avesta 2205 (equiv to AL 2205 and DP-8 Duplex)

E-BRITE® (equiv to E-BRITE 26-1)

NITRONIC 50 (equiv to Aquamet 2 and 22-13-5)

URANUS B6

Alloy 33 (equiv to Nicrofer 3033)

Nicrofer 3033

Ti 15-3-3-3

Chemical Process Product Purity

CY-40 (equiv to INCONEL)

CZ-100 (same as Cast Nickel)

Chemical Process Pumps

1815LCSi (equiv to 306 Stainless, AL-610™ and Cronifer 1815 LCSi)

18-17 LC Stainless (equiv to AL 611)

200 Series Stainless

306 Stainless

Chemical Process Pump Shafts

431 Ni Stainless

Custom 630 (equiv to 17-4 PH)

Chemical Process Reaction Vessels

Hastelloy C-276

Chemical Process Reactors

Hastelloy C-2000

Chemical Process Reformers

Nicofer 6025 HT

Chemical Process Scrubbers

Incoloy 25-6Mo (equiv to Alloy 904-6Mo)

Hastelloy C-276

Inconel 686

Chemical Process Severe Corrosive Environments

Incoloy 25-6Mo (same as Alloy 904-6Mo)

Hastelloy C-276

Inconel 686

Carpenter Custom Age 625 PLUS® Alloy

Chemical Process Stack Lines

Hastelloy C-276

Chemical Process Tank Equipment

Avesta 2205 (equiv to AL 2205 and DP-8 Duplex)

DP-3W Duplex

DP-6 Duplex (equiv to Wrought 329)

DP-11 Duplex (equiv to Wrought 2304)

NITRONIC 50 (equiv to Aquamet 2 and 22-13-5)

Carpenter 20 (equiv to Alloy 20, Durimet 20 and Cast Alloy CN-7M)

Chemical Process Tanks

Avesta 2205 (equiv to AL 2205 and DP-8 Duplex)

Chemical Process Thermal Processing

Incoloy 801

Chemical Process Thin Structural Elements

Nicrofer 5020 hMo

Chemical Process Transfer Piping

Hastelloy C-276

Chemical Process Transportation

Avesta 2205 (equiv to AL 2205 and DP-8 Duplex)

DP-3W Duplex

DP-8 Duplex (equiv to AL 2205 and Avesta 2205)

Chemical Processing Tubing

304 Stainless

Chemical Process Tubing - *for pyrolysis operations*

Hastelloy X

Chemical Process Valve and Valve Parts

1815LCSi (equiv to 306 Stainless, AL-610™ and Cronifer 1815 LCSi)

18-17 LC Stainless (equiv to AL 611)

200 Series Stainless

306 Stainless

Custom 630 (equiv to 17-4 PH)

Carpenter 20 (equiv to Alloy 20, Durimet 20 and Cast Alloy CN-7M)

Chemical Process Vessels

1815LCSi (equiv to 306 Stainless, AL-610™ and Cronifer 1815 LCSi)

18-17 LC Stainless (equiv to AL 611)

304 Stainless

306 Stainless

DP-3W Duplex

DP-6 Duplex (equiv to Wrought 329 Stainless)

DP-8 Duplex (equiv to AL 2205 and Avesta 2205)

DP-11 Duplex (equiv to Wrought 2304)

Mat-21

Chemical Process Welded Pipe and Tubing

AL 2205 (equiv to DP-8 Duplex and Avesta 2205)

Chemical Process Wire

304 Stainless

Chemical Tank Trailers

Incoloy 825

Chemical Tankers Piping and Tubing

Avesta 2205 (equiv to AL 2205 and DP-8 Duplex)

Chemical Wire Cloths

200 Series Stainless

Chimney Liners and Flexible Ducting

316 Ti Stainless

Chlorination Systems

Hastelloy C-22

Chloride Applications - *where high corrosion fatigue strength can be utilized*

DP-3W Duplex

DP-8 Duplex (equiv to AL 2205 and Avesta 2205)

DP-6 Duplex (equiv to Wrought 329 Stainless)

DP-11 Duplex (equiv to 2304 Duplex)

Chloride Environments

25Ni-20Cr-6Mo Stainless

Chloride Uses

Hastelloy G-35
18-18 Plus
44LN Duplex

Chlorine and Chlorine - *contaminated media (organic and inorganic)*

Hastelloy® C-4 alloy (equiv to Casting Alloy CW-2M)

Chlorine Dioxide Pulp Bleaching Wet Scrubbers

S 700®

Chlorine ions - encountered in scrubbers

Hastelloy C-276

Citric Acid Hot Applications

309/310 Stainless

Cladding for Nuclear Fuels in Nuclear Plants

Zirconium 702

Cladding of High Expansion Alloys - *due to its low expansion capabilities*

Invar 36

Clock Pendulums

Manganese Hadfield Steel Castings
Invar 36

Clutches and Brakes

Alnico, Alnico II, Alnico III, Alnico IV

Coal Burner Nozzles

RA85H

Coal-Fired Power Plants

INCOLOY® Alloy 27-7 Mo

Coal-Fired Power Plant Expansion Bellows

CX2MW (equiv to Hastelloy C-22)

Coal-Fired Power Plant - *fluidized bed coal combustion systems*

RA85H
HR-160

Coal-Fired Power Plant Fluidized Bed Retorts

Incoloy alloy MA 956

Coal-Fired Power Plant - flue gas scrubbers

CX2MW (equiv to Hastelloy C-22)

Coal-Fired Power Plant - *high-temperature gas-phase reactors*

Inconel 690

Coal-Fired Power Plant - *general service feed-water tubes*

2304 Duplex

Coal-Fired Power Plant - *general service heat exchangers*

2304 Duplex

Coal-Fired Power Plant Heat Exchangers – *fossil-fueled power generation stations*

317L Stainless

AL6-XN

R-Monel (400)

Coal-Fired Power Plant - *general service piping and instrumentation tubing*

2304 Duplex

Coal-Fired Power Plant - *oil burner oars, rabble arms and blades, recuperators, rotating shafts, soot blower elements*

HE

Coal-Fired Power Plant - *superheating tubing*

Inconel 671

Coal-Fired Power Plant - *tar still fittings*

CK-20 (ACI) (equiv to Wrought 310)

Coal Gasifier

RA-330-TX

Coal Handling/Bulk Transportation

201 LNLC

204 Stainless (equiv to Nitronic 30)

409/409HP Stainless

409 Ni

2304 Duplex (equiv to DP-11)

Coal Hopper Cars

410L (equiv to Duracorr and AL 412)

412 Stainless

NITRONIC 30 (equiv to 204 Stainless)

Coal-Fired Power Generating System Condensers

317 Stainless

Coal-Fired Gasification Systems

HR-160

Nicrofer 45 (equiv to 45 TM)

Pyromet® 31

Pyromet® Alloy 31V

RA-330-TX

Coal Handling - *chutes, chute liners, hoppers, bunkers, flooring, perforated plate for sizing, slight conveyor liners, vibrating screen pans, blending bin feeders, paddle mixers, screw feeders, fuel bins and dryer components*

200 Series Stainless, Nitronic

409 Stainless

409 Ni Stainless

Coal Handling Equipment

410L (equal to Duracorr, 412 Stainless and AL 412)

Coal Handling Feed Water Tubes, Piping and Instrumentation Tubing

2304 Duplex

Coal Handling Heat Exchangers

2304 Duplex

Coal Handling Truck Trailers

200 Series Stainless, Nitronic

Coal Hopper Cars

200 Series Stainless, Nitronic

410L (equiv to Duracorr, AL 412)

Coal Hopper Car Discharge Chutes and Bodies

409 Stainless

Coastal Rebar in Piers and Wharves, Bridge Tie Wires and Dowels

304LN Stainless

316LN Stainless

2205 Duplex Stainless

AL 2205 (equiv to DP-8 Duplex and Avesta 2205)

NITRONIC 30 (equiv to 204 Stainless)

NITRONIC 32 (equiv to 18Cr-2-Mn)

CF-3MN (ACI) (equiv to Wrought 316N)

Coil Acceptors

Alnico, Alnico II, Alnico III, Alnico IV

Coil Annealing Furnace Inner Covers

Haynes 556

Coin Acceptors

Alnico, Alnico II, Alnico III, Alnico IV

Coker Components - petrochemical industries

E-BRITE® (equiv to E-BRITE 26-1)

Coke Ovens

Nicrofer 45 (equiv to 45 TM)

Cold-Drawn Rod and Wire Applications - *including single strand wireline (slickline)*

20Mo-6HS Alloy

Cold-Forming Operations - *such as deep drawing, spinning, coining, etc.*

Nickel 201 Alloy

Cold-Forming - *with severe deep drawing*

305 Stainless

Cold Headed and Machined Fasteners and Shafts

PH 13-8 Mo Stainless

Cold-Headed Parts - *that need to be drilled, slotted, and broached*

302 Cu Stainless

Cold Heading Nuts - *including all standard head configurations of recessed head fasteners*

304 Cu Stainless

Cold-Headed Punched Nuts

384 Stainless

304HQ (equiv to 18-9LW and 304Cu Stainless)

Cold-Headed Rivets and Screws

305 Stainless

Cold-Headed Screws and Bolts - *made with recesses heads for upset*

Carpenter 10 (equiv to 384 Stainless)

Combustion Chamber Components - *for diesel engines*

Incoloy alloy MA 956

Combustion System Components - *where high strength to 816°C and oxidation to 1093°C is required*

Stellite® 21

Commercial Appliances

304 Stainless

304 H

CF-10

Commercial Counters, Showcases and Racks, Food and Beverage, Sanitary, Cryogenic and Pressure-Containing Applications

302 Stainless

430 Stainless

Commercial Flatware

430 Stainless

Commercial Food / Beverage Racks

302 Stainless

304L Stainless

Commercial Racks and Cages - *high-strength and nonmagnetic*

NITRONIC 32 (equiv to 18Cr-2-Mn)

Commercial Restaurant Cooking Appliances - *that need dressing up to increase their marketability such as dish washers, range hoods*

Inconel 600

430 Stainless

Commercial Roofing and Siding

430 Stainless

Commercial Sanitary Applications

302 Stainless

304 Stainless

304 H

CF-10 (equiv to Wrought 304H Stainless)

Inconel 600

Commercial Vending Machines

430 Stainless

Commercial Wire / Spinning Forming - *refrigerators, dishwashers, blenders, mixers, washing machines*

302 Stainless

Components - *for electronics*

Nickel 205 Alloy

Composite Wing Molds - *production of carbon fiber reinforced plastic (CFRP) components, frames for electronic control units for satellites and space crafts*

Invar 36

Compressor Cylinders - *municipal water supply*

CD4MCuN

Computer Terminals

Invar 36 Iron Thermostat Alloy

Concrete Molds

RA 230

Conduction Leads and Terminals - *in electronic components*

Nickel 200 Alloys

Construction Service Trowels - *for plastering*

200 Series Stainless

Consumer Appliances - *such as strainers, springs, shears, wear surfaces, knives, measuring instruments and permanent magnets*

INCOLOY 800

416 Stainless

420 Stainless

440A Stainless

468 Stainless

Consumer Knives - *used in Consumer Appliances*

440A Stainless

440B Stainless

440C Stainless

Consumer Shears

420 Stainless

440A Stainless

Containers - *pulp and paper industry*

2507 Duplex

AL6-XN

Control Resistors - *for electronics*

BRIGHTWAY Alloy C (equiv to S and Nichrome V)

Control Rod Mechanisms - *nuclear reactors replacing 410 where Type 410 had insufficient corrosion resistance*

Custom 450® Stainless

Control and Sensing Bellows

Copper Nickel

Conveyor Chain and Instruments

TrimRite Hardenable

Copper Ingot-Mold Bottom Plate

UNCo 50

Copper Smelters

Alloy 31 (equiv to Nicrofer 3127hMo)

Cores and Relay Components - *for high sensitivity ground fault circuit breakers, magnetic shields, and electric transformers*

Moly Permalloy

Cores for Magnetic Amplifiers

PERMENDUR 2 V

Cores for Power Transformers

PERMENDUR 2 V

Cores for Pulsar Transformers

PERMENDUR 2 V

Corrosive Deep Well Hardware and Fasteners

A-286

Corrosive EnvironmentsAL 29-4-2C[®] StainlessAL 29-4-2[®]**Corrosive Environments - in Sour Wells** - *oils, salts, salt-water acids and alkalis*

Ni-Resist Type 1

Ni-Resist Type 2

Corrosive Environments - *to withstand attack from dilute acids and alkalis*

Ni-Resist Type 1

Corrosive Exhaust Fans and Housings

Hastelloy C-276

Corrosive Fatigue Strength Applications

DP-3W Duplex

DP-8 Duplex (equiv to AL 2205 and Avesta 2205)

Corrosion Resistant Bolts

ULTIMET

Corrosion Resistant Fan Blades

ULTIMET

Corrosion Resistant Fasteners

65-30 Nickel Copper (equiv to M30C)

Corrosion Resistant Filters

ULTIMET

Corrosive Resistant Membranes (e.g. in pressure gauges)

DURATHERM 600

Corrosion Resistant Molds for Plastics

30% - Cast Cu-Ni Beryllium Alloy

Corrosive Resistant Nozzles

ULTIMET

Corrosion Resistant Plate - *in the Chemical Industry*

DURATHERM 600

Corrosive Resistant Pumps

ULTIMET

Corrosive Resistant Rolls

ULTIMET

Corrosive Resistant Screw Conveyors

ULTIMET

Corrosive Resistant Valve Parts

ULTIMET

Corrosive Tubing - Industrial Applications

304L Stainless

Corrosive Vessels Industrial Applications

304L Stainless

Counter Tops (households)

403 Stainless

Cow Magnets

Alnico, Alnico II, Alnico III, Alnico IV

Crude Petroleum Stills

R-Monel (400)

Cryogenic Applications

302 Stainless

304 H

Nitronic 40 (equiv to Pyromet 538 and 21Cr-6Ni-9Mn)

CF-10 (equiv to Wrought 304H)

Incoloy 901

Ti Grade 23 (equiv to 6Al-4V Eli)

A-286

Cryogenic Food / Beverage Applications

304 Stainless

Cryogenic Pipes & Valves

Ti 6Al-4V ELI (equiv to Ti Grade 23)

Cryogenic Service – *tanks, valves, piping flanges and structural supports*

Nitronic 33 (equiv to 18Cr-13-Mn)

Inconel 718

Cryogenic Structural Supports - cryogenic service

NITRONIC 33 (equiv to 18Cr-13-Mn)

Cryogenic Equipment

A-286

Cryogenic Storage Tanks

Inconel 718

Curtain Walls (Household) Applications

301L Stainless

Cutlery

TrimRite Hardenable

410 Stainless

420 Stainless

440B Stainless

440C Stainless

40-XH® Alloy

Cut-Off Blades

REXALLOY®™ GRADE 33

Cutting Tool Alloy - having high resistance to severe shock and excellent "red-hardness"

STELLITE® 19

Cutting Tools and Wear-Resistant Parts

Stellite® 33

Cutters - industrial

AM 350™

AM 355

A-6

O-1

Cutting Blades - high speed

Nimonic PK-31

Cutting Blades - household appliances

430M Heat Resisting

TrimRite Hardenable

CA-40 (ACI) (equiv to Wrought 420)

CA-40F (ACI) (equiv to Wrought 420F)

Cutting Tools - *resistant to corrosion and abrasive wear as well as being completely non-magnetic*

Stellite 19

Stellite® 33

Tantung G

Cutting Tools - *medical and surgical applications*

TrimRite Hardenable

Cyanide Salt Pots

RA 330

HU (ACI)

HW (ACI)

HW-50 (ACI)

Cyclones

409 Stainless

409 Ni Stainless

Cylinder Liners - pulp & paper

CY-40 (ACI) (equiv to INCONEL)

CZ-100 (same as Cast Nickel)

65-30 Ni Cu Casting Alloy (equiv to M-35-2)

Dairy Processing Equipment

302B

Deep Drawing

Nickel 201 Alloy

Deep Drawing Sanitary Cryogenic-Pressurized Applications - *cold forming by deep drawing*

305 Stainless

Dental Applications - *because of its chemical inertness*

Tantalum

Dental Devices - *corrosive applications*

304L Stainless

420 Stainless

Ti CP – Grade 1

Ti CP – Grade 4

Dental Endodontic Instruments

Nitinol 55

Dental Fixation Devices

Bioline 1RK91

Dental Fixtures

Stellite® 21

Dental Implants

Ti Grade 5 (equiv to 6Al-4V)

Dental Instruments

420 Stainless

440A Stainless

Bioline 4C27A Precision Wire

Dental Orthodontic Braces

SR-50A

Dental Pivot Pins - in dental instruments

440A Stainless

Dental Tools

Bioline 4C27A Precision Wire

Desalination Piping

AL 4565™

Desalination Plants

2205 Duplex

2507 Duplex

DP-3W Duplex

DP-8 Duplex (equiv to AL 2205 and Avesta 2205)

DP-6 Duplex (equiv to Wrought 329 Stainless)

DP-11 Duplex (equiv to 2304 Duplex)

254 SMO Cast (equiv to CK-3MCuN)

AL6-XN

Incoloy 25-6Mo (equiv to Alloy 904-6Mo)

Desalination Plant Fans & Fan Housings

329 Duplex Stainless (equiv to DP-6)

Avesta 2205 (equiv to AL 2205 and DP-8 Duplex)

DP-3 Duplex

DP-3W Duplex

DP-6 Duplex (equiv to Wrought 329 Stainless)

DP-8 Duplex (equiv to AL 2205 and Avesta 2205)

DP-11 Duplex (equiv to Wrought 2304)

Desalination Plant Heat Exchanger Tubes

19 Duplex

Avesta 2205 (equiv to AL 2205 and DP-8 Duplex)

Desalination Plant Press Rolls

DP-3 Duplex

DP-3W Duplex

DP-6 Duplex (equiv to Wrought 329 Stainless)

DP-8 Duplex (equiv to AL 2205 and Avesta 2205)

DP-11 Duplex (equiv to Wrought 2304)

Desalination Plant Pressure Vessels

329 Duplex Stainless (equiv to DP-6 Duplex)

Ti 15-3-3-3

Desalination Plant Tanks

DP-3W Duplex

DP-6 Duplex (equiv to Wrought 329 Stainless)

DP-8 Duplex (equiv to AL 2205 and Avesta 2205)

DP-11 Duplex (equiv to Wrought 2304)

Detergent - soap manufacturing

CF-3 (ACI) (equiv to Wrought 304L)

Inconel 600

Detergent Filter Press Plates and Frames

CF-3 (ACI) (equiv to Wrought 304L)

CF-8C (ACI) (equiv to Wrought 347)

CF-8M (ACI) (equiv to Wrought 316)

CK-20 (ACI) (equiv to Wrought 310)

Dewatering Equipment Filter Press Plates and Frames

CF-3 (ACI) (equiv to Wrought 304L)

CF-8C (ACI) (equiv to Wrought 347)

CF-8M (ACI) (equiv to Wrought 316)

CK-20 (ACI) (equiv to Wrought 310)

Dewatering Systems

ESCALOY 45 D Duplex (equiv to Casting Alloy CE-8MN and Wrought 2507)

Ferralium 255 Duplex

Diaphragms - pressure diaphragms

Havar

Dies

440A Stainless

440B Stainless

440C Stainless

Die-Casting Dies

Pyromet Alloy CTX-1

Pyromet® Alloy CTX-3

Pyromet® Alloy CTX-909

Pyromet 538 (equiv to Nitronic 40, 21-6-9 NS 21Cr-6Ni-9Mn)

Die-Casting Inserts and Cores

Nimonic 80 A

Die Cast Tooling

Anviloy 1150

Die Holding Blocks

H-13

Diesel Engine Air Pre-Heaters

Haynes 556

Diesel Engine Applications

Inconel MA 758

Diesel Engine Combustion Chamber Components

Incoloy alloy MA 956

Diesel Engine Cylinder Linings

CA-40 (ACI) (equiv to Wrought 420)

CA-40F (ACI) (equiv to Wrought 420F)

CC-50 (ACI) (equiv to Wrought 446)

Diesel Engine Exhaust Valves - *for heavy-duty truck and locomotive diesel engines*

Stellite® Star J

Inconel X-751

Pyromet® Alloy 31V

Digester Blow Valves - pulp & paper industry

D3MCuN (equiv to FERRALIUM 255-3SC)

CD4MCuN

CK-20 (ACI) (equiv to Wrought 310)

Dilute Acids and Alkalis - *in corrosive environments*

Ni-Resist Type 4

Diodes

Kovar® Alloy (equiv to Rodar Alloy)

Diodes - *for electronics*

Dumet Core Rod

Kovar® Alloy (equiv to RODAR Alloy)

Dish Washer Trim

430 Stainless

Domestic Appliances

BRIGHTWAY Alloy (equiv to Alloy C and S as well as Nichrome V)

Nichrome V (equiv to Brightray Alloy C (S))

Inconel 604

Domestic Furnace Heating Units

BRIGHTRAY Alloy B (Nichrome)

Nichrome (Brightray Alloy B)

Brightway Alloy 35

Domestic Sheathed Heater Applications

Incoloy 832

Door Guide of Arc Furnace

UNCo 50

Down-Hole Components - *tubing, coupling, and subsurface safety valves*

Hastelloy C-276

Nitronic 50 (equiv to Aquamet 2 and 22-13-5)

Copper Nickel

Down-Hole Submersible Pumps

Ni Hard Type 4

Ni-Resist Type 1

Monel 500

Inconel 718

Inconel 625

Down-Hole Tubing

SF 13/2/5

Drawing Dies - *replacing D-2*

440-XH® Alloy

Drawn Housings and Tank Covers - *drawn housings, eyelets, barrels (cold forming by deep drawing)*

305 Stainless

Drawn Housings - cold forming by deep drawing

305 Stainless

Dredge Buckets

Manganese Hadfield Steel Castings

Drive Shafts - *for ocean going vessels*

19 D Duplex

2507 Duplex

Drop Hammer

Haynes R-41

Dry Chlorine

Hastelloy® C-4 alloy (equiv to Casting Alloy CW-2M)

Dry Docks

410L (equiv to Duracorr, AL 412 and 410L)

Dumet Wire - *core metal*

Al 42 Nickel Sealing Iron

Dump truck beds and bed liners

409 Stainless

409 Ni Stainless

410L (equiv to Duracorr and AL 412)

Dyeing Catalyst

Chromium

Dyeing Equipment

CG-8M (equiv to Wrought 317)

Edging Rolls

440-XH® Alloy

Electric Furnace Supports

HH 25/12

Electric Generators and Motors

Hiperco® 27 Alloy

Alnico, Alnico II, Alnico III, Alnico IV

Electric Guitar Pickups

Alnico, Alnico II, Alnico III, Alnico IV Alnico V

Electric Heating Elements and Mechanical Purpose Parts - *industrial furnaces with reducing atmospheres*

Thoria Dispersed Nickel

Electric Irons

Invar 36

Electric Linear Motors

Hyperco® 15 Alloy

Electric Loudspeakers

ALNICO 5 (Alnico V)

Alnico, Alnico II, Alnico III, Alnico IV

Electric Motors

ALNICO 5 (Alnico V)
 Hiperco® 27 Alloy

Electric Motors, Generators, Pole Pieces, Relays, and Magnetic Bearings

Hiperco
 Hiperco® 27 Alloy

Electric Motor Speed Switches - *included springs, diaphragms and supports*

Alloy® 43-PH Low Expansion

Electric Pole-Line Hardware - *where Type 304 would be considered*

204-Cu Stainless
 Nitronic 30 (equiv to 204 Stainless)

Electric Pole-Line Hardware

Ametek 948 Nickel Sealing Iron Alloy

Electric Pole-Pieces

Hiperco® 27 Alloy

Electric Power Transformers - *are built with mu-metal shells to prevent them from affecting nearby circuitry*

Mu-Metal
 Ametek 948 Sealing Iron Alloy
 Moly Permalloy

Electric Rheostats and Controls - *heavy-duty*

TOPHET® Alloy C

Electric Seam-Welded Tubing – *Cal-rods (used for the sheathing of electrical resistance heating elements used in immersion heaters*

Incoloy 840

Electric Sensors

ALNICO 5 (Alnico V)
 Hyperco® 15 Alloy

Electric Sheathed Heater Applications - *domestic and industrial*

Incoloy 832

Electric Sheathing - *electrical resistance heating elements*

INCOLOY 800

Electric “Shunt” Applications

“30” Alloy

Electric Solenoid Application

Hyperco® 15 Alloy

Electric Solenoids - *for both AC and DC magnetic circuits*

430FR

Electric Specialty Motor Stators and Rotors

Ametek 948 Nickel Sealing Iron Alloy

Electric Switched Reluctance Motors

Hyperco® 15 Alloy

Electric Toasters

Invar 36

Electric Toaster Springs (Household) Uses

301L Stainless

Electric Utility Tubing - *shielding used in the ocean to carry electric wiring*

AL 29-4® Stainless

AL 29-4-2C® Stainless

AL 29-4-2®

Electrical Amplifier Cores - *for magnetic amplifiers*

PERMENDUR 2 V

Electrical Bi-Metallic Components - *electrical and electronic industries*

Invar 36

Electrical Cast Heating Elements - *chemical industries*

HX-50 (ACI)

Electrical Circuits - *(shunt) to compensate for the effect of variations in ambient temperature such as watt-hour meters, speedometers, tachometers, voltage regulators and similar electrical instruments*

Alloy 30

Alloy 32

Electrical Components in Lamps

Nickel 211 Alloy

Electrical Components - *such as non-magnetic fasteners and springs*

MP 35 N

Electrical Conduit Shielding

NITRONIC 33 (equiv to 18Cr-13-Mn)

Electrical Connectors

Copper Nickel

Electrical Contact Springs

Permanickel 300 (equiv to Z Nickel)

Electrical Controls

Alnico, Alnico II, Alnico III, Alnico IV

Electrical Cores and Relay Components - *high sensitivity ground fault circuit breakers*

Moly Permalloy

Copper Nickel

Electrical Heating Elements - *domestic and industrial equipment*

Nichrome (equiv to Brightray Alloy B)

Nichrome V (equiv to Brightray Alloy C (S))

Brightway Alloy F

Brightway Alloy 35

Inconel 604