

| CATALOG MATERIAL CODE | MATERIAL/COMPOSITION | TYPICAL AREAS OF USE | | | | APPLICATION GUIDELINE INFORMATION |
|-----------------------------|--|----------------------|---------------------|----------------|------------------|--|
| | | TUBING | MGO SHEATHS | PROT. TUBES | DRILLED WELLS | |
| 11 | CAST IRON | | | X | | Up to 704 °C [1300 °F] in oxidizing conditions. Main area of usage is in molten non-ferrous metals, daily whitening is recommended. Can be used to 871 °C [1600 °F] under reducing conditions. |
| 22 | BRASS ^[1] | X | | | X | Up to 538 °C [1000 °F] continuous. Good thermal conductivity and mechanical strength. |
| 23 | COPPER | X | X Limited Avail. | | | Up to 260 °C [500 °F] continuous. Excellent thermal conductivity. Poor mechanical strength. |
| 24 | PLATINUM ^[1] | X | X | | | Up to 1374 °C [2500 °F] continuous oxidizing atmospheres. Good thermal conductivity. Used in applications where high temperature, but no vacuum or inert atmosphere is available. |
| 25 | TANTALUM ^[2] | X | X | | X ^[2] | Up to 2349 °C [4350 °F]. Good resistance to corrosion and quick heat conductivity. Good mechanical strength. Used in chemical processes and high temperatures in vacuum or inert atmosphere. |
| 26 | TITANIUM | X | X | | X | Up to 1260 °C [2300 °F] in inert or vacuum atmosphere. Acid and chemical resistant. Oxidation resistance to 538 °C [1000 °F]. |
| 27 | ALLOY 400 (UNS N04400) 67% Nickel 30% Copper | X | X | X | X | Up to 538 °C [1000 °F] in sulfur-free atmosphere. Excellent resistance to corrosion. Used in chemical processing and food processing equipment. (MONEL® 400) |
| 28 | ALLOY B-3 (UNS N10675) 65% Nickel 28.5% Molybdenum 1.5% Chromium 1.5% Iron | X | X Limited Avail. | X | X | Up to 600 °C [1200 °F] Exhibits extremely high resistance to pure hydrochloric, hydrobromic, and sulfuric acids. Greatly improved structural stability compared with previous B-type alloys, leading to fewer concerns during welding, fabrication, and service. Used in numerous chemical process industry applications, especially in the construction of reaction vessels for pure, reducing acid service. Poor corrosion resistance to oxidizing environments, not recommended for use in oxidizing media or in the presence of ferric or cupric salts. (HASTELLOY® B-3) |
| 29 | ALLOY C-276 (UNS N10276) 54% Nickel 16% Molybdenum, 15% Chromium | X | X Limited Avail. | X | X | Up to 1038 °C [1900 °F] in oxidizing atmospheres. Exceptional resistance to a wide variety of chemical environments. Withstands wet chlorine gas, hypochlorite and chlorine dioxide. (HASTELLOY® C-276) |
| 31 | NICKEL 200 (UNS N02200) 99% Nickel | | X Limited Avail. | | X | Up to 899 °C [1650 °F] in sulfur-free atmospheres. Good corrosion-resistance. Used in contact with reducing acids, foods, chemicals, caustics, rayon, and plastics. |
| 32 | 304 STAINLESS STEEL LOW CARBON (UNS S30403) 18% Chromium, 8% Nickel | X | X | X | X | Same characteristics as 304 except the low carbon allows for corrosion-resistant weld areas. Not recommended to be used above 427 °C [800 °F]. (0.03% max. carbon) |
| 33 | 316 STAINLESS STEEL LOW CARBON (UNS S31603) 16% Chromium 12% Nickel 2% Molybdenum | X | X | X | X | Same characteristics as 316 except the low carbon allows for corrosion-resistant weld areas. Not recommended to be used above 427 °C [800 °F]. (0.03% max. carbon) |
| 35 | 321 STAINLESS STEEL (UNS S32100) 18% Chromium 10% Nickel, Titanium | X | X | X | X | Good corrosion resistance between (482 to 871) °C [900 to 1600] °F. Used where conditions are too severe for low carbon stainless steels. |
| 36 | 347 STAINLESS STEEL (UNS S34700) 18% Chromium, 10% Nickel, Columbium | X | X Limited Avail. | | X | Good corrosion resistance between (482 to 871) °C [900 to 1600] °F. Used where conditions are too severe for low carbon stainless steels. |
| 37 | ALLOY 800 (UNS N08800) 33% Nickel 42% Iron 21% Chromium | X | X Limited Avail. | X | X | Strong resistance to oxidation and carburization at high temperatures. Resists sulfur attack, internal oxidation, and scaling in a wide variety of atmospheres. (INCOLOY® 800) |
| 38 | ALLOY 20 (UNS N08020) 35% Nickel 35% Iron 20% Chromium Columbium | | X Limited Avail. | X | X | Superior resistance to stress-corrosion cracking in boiling 20-40% sulfuric acid. Also used in high octane gas, solvents, explosives, heavy chemicals and agri-chemicals. (CARPENTER 20Cb-3®) |
| 41 | HR-160®(UNS N12160) 37% Nickel 30% Cobalt 28% Chromium | | X | X | | A premier alloy that provides excellent resistance to sulphur, vanadium, chlorines, chlorides, and other salt deposits up to 1204 °C [2200 °F]. A superior material for use in aggressive waste incineration processes. |

[1] Materials available in various alloys - consult factory

[2] Generally applied as a well jacket

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