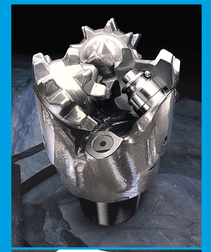
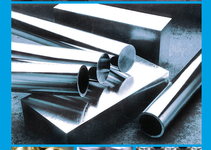
Materials for Oil & Gas Applications.

thyssenkrupp Materials NA Copper and Brass Sales is a part of the thyssenkrupp Materials Oil & Gas global network working with passion and expertise to develop solutions for business and industry in the Oil & Gas and Energy markets.

Our materials can be found in a wide variety of active energy applications including:

- Artificial Lift
- Completion Tools
- Down-Hole Drilling Tools
- Electronic & Battery Housings
- Flow Control Equipment
- MWD/LWD Wireline Tools
- Mud Motors
- Pumps
- Rotor Bars
- And many other oil field accessories





In addition to quality materials, we provide value added processing services including heat treating, cutting, kitting, drilling, boring, turning, grinding, honing, straightening, mechanical testing, and non-destructive testing to save you time and money.

Along with extensive inventories of quality materials, expert value-added processing services, knowledgeable sales and applications assistance, and fast delivery oil and gas industry professionals know they can rely on full certification of the materials they receive from thyssenkrupp Materials NA to all applicable industry specifications.

Stock Availability

- 718 AMS 5662, 718 Oilfield (NACE)
- 925
- 400
- SUPER 13CR 95,110
- 303 SS
- 304 SS
- 316 SS
- 17-4, Ann.,H1025 - DH1150
- 13-8
- 15-5
- Nitronic 50 Annealed, 50 HS, 50XHS Tbg
- Nitronic 60
- Copper 101, 102, 110
- Beryllium Copper
- ToughMet® AT & TS Tempers
- Aluminum 6061, 2024 7075, 2011
- Nickel Aluminum Bronze (630)
- Free Cutting Brass 360
- 464 Naval Brass
- Bushing Bronze (660)
- 932 Bearing Bronze
- 954 Aluminum Bronze
- 955 Nickel Aluminum Bronze
- 830 Manganese Bronze

Materials Services
Oil & Gas Materials

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Materials Services

Oil & Gas Materials.

Reference Guide.

thyssenkrupp

Stainless Steel Alloys

Grade (UNS)	Specification ASTM	Characteristic	Size Range	Typical Mechanical Properties: UTS	Y 0.2% Offset	EL	RA	Hardness	Charpy Impacts Avg	Chemistry: C	Mn	P	S	Si	Ni	Cr	Mo	Nb+ Ta or Cb+Ta	Ti	Cu	Al	Fe	B	N	H	V
316L (S31603)	ASTM A276 CBS_316L.	Higher corrosion resistance than types 302 and 304. Extra-low-carbon modification of 316. A molybdenum alloyed austenic stainless steel with excellent machinability and weldability. Mud Motors, Fishing Tools etc.	.25" - 11.00"	75,000 - 115,000	30,000 Min	40%	50%	22 HRC Max	N/A	0.03 Max	2.00 Max	0.040 Max	0.030 Max	1.00 Max	10.0 - 14.00	16.0 - 18.0	2.00 - 3.00	--	--	--	--	--	--	--	--	--
17-4PH (S17400) Cond A	ASTM A564 CBS_0G174_Ann H900 Capability	Age-hardened offers superior machinability when compared to Condition A. Used in oilfield valve, pump shfts, rotors, stators etc. Does Not meet NACE MR0175/ISO 15156.	.25" - 11.00"	--	--	--	--	--	--	0.07 Max	1.00 Max	0.040 Max	0.030 Max	1.00 Max	3.00 - 5.00	15.0 - 17.50	--	0.15 - 0.45	--	3.00 - 5.00	--	Balance	--	--	--	--
17-4PH (S17400) H1025	ASTM A564 CBS_0G174_H1025	Age-hardened offers superior machinability when compared to Condition A. Used in oilfield valve, pump shfts, rotors, stators etc. Does Not meet NACE MR0175/ISO 15156.	.25" - 6.00"	165,000 Min	160,000 Min	12%	45%	34 - 40 HRC	RT 22 Ft-lbs Avg	0.07 Max	1.00 Max	0.040 Max	0.030 Max	1.00 Max	3.00 - 5.00	15.0 - 17.50	--	0.15 - 0.45	--	3.00 - 5.00	--	Balance	--	--	--	--
17-4PH (S17400) HH1150	ASTM A564 CBS_OD174_HH1150	Age-hardened offers superior machinability when compared to Condition A. Used in oilfield valve, pump shfts, rotors, stators etc. HH1150 meets NACE MR0175/ISO 15156.	.25" - 11.00"	135,000 Min	110,000 Min	18%	55%	28 - 32 HRC	-75° F 20 Ft-lbs Avg	0.07 Max	1.00 Max	0.040 Max	0.030 Max	1.00 Max	3.00 - 5.00	15.0 - 17.50	--	0.15 - 0.45	--	3.00 - 5.00	--	Balance	--	--	--	--
15-5 PH (S15500) Cond A	ASTM A564	Age-hardened offers superior machinability when compared to Condition A. Can be heat treated to H900 through HH1150. Used in oilfield valve, pump shfts, rotors, stators etc. HH1150 meets NACE MR0175/ISO 15156.	.50" - 6.00"	--	--	--	--	--	--	0.07 Max	1.00 Max	0.040 Max	0.030 Max	1.00 Max	3.50 - 5.50	14.00 - 15.50	--	0.15 - 0.45	--	2.50 - 4.50	--	Balance	--	--	--	--
XM-19 (S20910)	ASTM A276 CBS_OGN#50.55	Austenitic stainless with good corrosion resistance and high strength. NACE MR0175/ISO 15156. Non-Magnetic mud motors, drill collars, pumps, fishing tools etc.	.50" - 6.00"	100,000 Min	55,000 Min	35%	55%	25 - 35 HRC	--	0.060 Max	4.00 - 6.00	0.04 Max	0.03 Max	1.00 Max	11.50 - 13.50	20.50 - 23.50	1.50 - 3.00	0.10 - 0.30	--	--	--	--	0.20 - 0.40	--	0.10 - 0.30
XM-19 (S20910)	ASTM A276 CBS_OGN#50.120	Austenitic stainless with good corrosion resistance and high strength. NACE MR0175/ISO 15156. Non-Magnetic mud motors, drill collars, pumps, fishing tools etc.	.50" - 6.00"	125,000 Min	105,000 Min	20%	50%	25 - 35 HRC	RT 40 Ft-lbs Avg	0.060 Max	4.00 - 6.00	0.04 Max	0.03 Max	1.00 Max	11.50 - 13.50	20.50 - 23.50	1.50 - 3.00	0.10 - 0.30	--	--	--	--	0.20 - 0.40	--	0.10 - 0.30
XM-19 (S20910)	Enablelloy 50 Precision Tube	Austenitic Stainless with good corrosion resistance and high strength for MWD/LWD, Non-Magnetic, Magnetic Permeability < 1.01μ	1.875" OD x 1.500" ID.	180,000 Min.	160,000 Min	8%	20%	43 HRC Max.	--	0.060 Max	4.00 - 6.00	0.04 Max	0.03 Max	1.00 Max	11.50 - 13.50	20.50 - 23.50	1.50 - 3.00	0.10 - 0.30	--	--	--	--	0.20 - 0.40	--	0.10 - 0.30
XM-19 (S21800)	ASTM A276	Austenitic stainless with good corrosion resistance and high strength. Does Not meet NACE MR0175/ISO 15156. Non-Magnetic mud motors, drill collars, pumps, fishing tools etc.	.50" - 3.75"	100,000 Min	50,000 Min	35%	55%	22 HRC Max	--	0.10 Max	7.00 - 9.00	0.06 Max	0.03 Max	3.50 - 4.50	8.0 - 9.0	16.0 - 18.0	--	--	--	--	--	--	0.08 - 0.18	--	--
Super 13Cr 95 (S41427)	(ASTM A276, A564, A959) API 6A CBS_OGS13Cr95	Martensitic stainless, high performance, corrosion resistance and high temperature. S13Cr 95 meets the requirements of NACE MR0175/ISO 15156. Drill collars, packers, line pipe, mandrels etc.	4.75" - 8.75"	105,000 Min	95,000 - 120,000	20%	40%	28 HRC Max	+14° F 44 Ft-lbs Avg	0.03 Max	1.00 Max	0.02 Max	0.005 Max	0.50 Max	4.5 - 6.0	11.5 - 13.5	1.5 - 2.5	--	0.01 Max	--	--	Balance	--	--	--	0.10 0.50
Super 13Cr 110 (S41427)	(ASTM A276, A564, A959) API 6A CBS_OGS13Cr110	Martensitic stainless, high performance, corrosion resistance and high temperature. S13Cr 110 does not meet the requirements of NACE MR0175/ISO 15156. Drill collars, packers, line pipe, mandrels etc.	4.75" - 8.75"	125,000 Min	110,000 - 140,000	15%	40%	32 HRC Max	+14° F 44 Ft-lbs Avg	0.03 Max	1.00 Max	0.02 Max	0.005 Max	0.50 Max	4.5 - 6.0	11.5 - 13.5	1.5 - 2.5	--	0.01 Max	--	--	Balance	--	--	--	0.10 0.50

Nickel Alloys

Grade (UNS)	Specification ASTM	Characteristic	Size Range	Typical Mechanical Properties: UTS	Y 0.2% Offset	EL	RA	Hardness	Charpy Impacts Avg	Chemistry: C	Mn	P	S	Si	Ni	Co	Cr	Mo	Nb+- Ta or Cb+Ta	Ti	Cu	Al	Fe	B	Pb	Se	Bi	Ca	Mg	Sn	Cobalt + Ni	Zn
718 NACE (N07718)	ASTM B637 API 6ACRA CBS_OG718.120	High Strength and creep ruture properties up to 1300 Degrees F, good ductility, corrosion resistance. Downhole and surface tubular products, valve, hangers etc. Meets NACE MR0175/ISO 15156.	.875" - 11.00"	150,000 Min	120,000 - 145,000	20%	35%	32 - 40 HRC	-75° F 35 Ft-lbs Avg	0.045 Max	0.35 Max	0.010 Max	0.010 Max	0.35 Max	50.0 - 55.0	1.00 Max	17.0 - 21.0	2.80 - 3.30	4.87 - 5.20	0.80 - 1.15	0.23 Max	0.40 - 0.60	Balance	0.0060 Max	0.0010 Max	0.0005 Max	0.00005 Max	0.0030 Max	0.0060 Max	--	--	--
718 SA (N07718)	ASTM B637 AMS 5662, 5663	High Strength and creep ruture properties up to 1300 Degrees F, good ductility, corrosion resistance. Products requiring high strength that does not have to meet the requirements of NACE MR0175/ISO 15156. Heat treatment to meet customer specifications.	3.75" - 5.75"	--	--	--	--	--	--	0.080 Max	0.35 Max	0.015 Max	0.015 Max	0.35 Max	50.0 - 55.0	1.00 Max	17.0 - 21.0	2.80 - 3.30	4.75 - 5.50	0.65 - 1.15	0.30 Max	0.20 - 0.80	Balance	--	0.0005 Max	0.0003 Max	0.0060 Max	--	--	--	--	--
925 NACE (N09925)	API 6ACRA/ CBS_OG0925.110	High Strength and creep ruture properties up to 1300 Degrees F, good ductility, corrosion resistance. Downhole and surface tubular products, valve, hangers etc.. Meets NACE MR0175/ISO 15156.	2.25" - 9.00"	140,000 Min	110,000 Min	18%	25%	26 - 38 HRC	-75° F 35 Ft-lbs Avg	0.03 Max	1.00 Max	0.03 Max	0.03 Max	0.5 Max	42.0 - 46.0	--	19.5 - 22.5	2.5 - 3.5	0.5 Max	1.9 - 2.4	1.5 - 3.0	0.1 - 0.5	22.0 Min	--	--	--	--	--	--	--	--	--
Monel 400 (N04400)	ASTM B162	Characterized by moderate strength, good weldability, good eneral corrosion resistance and toughness. Pumps, shafting, valves etc. Meets NACE MRO175/ISO 15156.	1.00" - 4.00"	75,000 - 90,000	25,000 - 50,000	50%	75%	60 - 80 HRB	--	0.3 Max	2.00 Max	--	0.024 Max	0.5 Max	--	--	--	--	--	--	--	2.5 Max	--	--	--	--	--	--	--	63.00 Min	--

Bronze Alloys

Grade (UNS)	Specification ASTM	Characteristic	Size Range	Typical Mechanical Properties: UTS	Y 0.2% Offset	EL	Hardness	Chemistry: Mn	P	S	Si	Ni	Cu	Al	Fe	Pb	Sn	Zn	Sb
Aluminum Bronze (C63000)	ASTM B150	Applications requiring combinations of corrosion resistance, excellent bearing properties at considerable loads and extremely high strength both at room and elevated temperatures. Valve parts, chemical processing components etc.	0.5" - 8.00"	110,000 Min	60,000 Min	10%	201 - 248 BHN	1.50 Max	--	--	0.25 Max	4.00 - 5.50	Balance	9.0 - 11.0	2.0 - 4.0	--	0.20 Max	0.30 Max	--
Leaded-Tin Bronze (C93200)	ASTM B505	Excellent machining properties, good hardness and strength and wear resistance with excellent antifriction qualities. Not subject to dezincification. Washers, busing, bearings etc.	1.5" - 9.00"	35,000 Min	20,000 Min	10%	--	--	0.15 Max	0.08 Max	0.005 Max	1.0 Max	81.0 - 85.0	0.005 Max	0.20 Max	6.0 - 8.0	6.3 - 7.5	1.0 - 4.0	0.35 Max
Aluminum Bronze (C95400)	ASTM B505	Used for heavy-duty applications involving abrasion wear and fatigue where not impact is present. Busings, bearings, gear parts, fasteners, etc.	0.5" - 6.5"	85,000 Min	30,000 Min	12%	170 BHN	0.50 Max	--	--	--	1.50 Max	83.00 - 87.00	10.0 - 11.50	3.00 - 5.00	--	--	--	--
Nickel Aluminum Bronze (C95500)	ASTM B505	Used for heavy-duty applicatons involving abrasion, wear and fatigue. The aluminum content in the copper alloy 955 provides high-strength and makes it one of the few bearing bronzes capable of being heat treated. Bearings, gears, valve seats, worm & worm wheels, etc.	0.5" - 6.5"	95,000	42,000	10%	--	3.5 Max	--	--	--	3.0 - 5.0	78.0 Min	10.0 - 11.5	3.0 - 5.0	--	--	--	--

Copper Alloys

Grade (UNS)	Specification ASTM	Characteristic	Size Range	Typical Mechanical Properties: UTS	Y 0.2% Offset	EL	Hardness	Chemistry: Ni	Cu	Sn	Beryllium	Cobalt + Ni	Cobalt +Ni + Fe
ToughMet3 (C96900) (C72900)	B505	High strenght, low friction, non-magnetic, anti-galling, corrosion, erosion and wear resistance. Instrument housings, bearings, couplings, actuator stems etc. Meets NACE MR0175/ISO 15156.	.595" - 6.00"	120,000 - 160,000	90,000 - 150,000	15%	26 - 36 HRC	15 Max	Balance	8 Max	--	--	--
Brush Alloy 25 A (TB00) (B601) (C17200)	(ASTM B196, B251, B643) API 7 API 6A	High Strength, low friction, non-magnetic, anti-galling, high hardness, thermal and electrical conductivity, corrosion, erosion and wear resistance. Instrument housings, bearings, couplings, actuator stems etc. Meets NACE MR0175/ISO 15156.	.25" - 6.00"	60,000 - 85,000	20,000 - 35,000	60%	B45 - B85	--	Balance	--	1.80 - 2.00	0.20 Min	0.60 Max
Brush Alloy 25 H (TD04) (TB00) (B601) (C17200)	(ASTM B196, B251, B643) API 7 API 6A	High Strength, low friction, non-magnetic, anti-galling, high hardness, thermal and electrical conductivity, corrosion, erosion and wear resistance. Instrument housings, bearings, couplings, actuator stems etc. Meets NACE MR0175/ISO 15156.	.25" - 6.00"	85,000 - 130,000	75,000 - 105,000	30%	B88 - B103	--	Balance	--	1.80 - 2.00	0.20 Min	0.60 Max
Brush Alloy 25 AT (TF00) (TB00) (B601) (C17200)	(ASTM B196, B251, B643) API 7 API 6A	High Strength, low friction, non-magnetic, anti-galling, high hardness, thermal and electrical conductivity, corrosion, erosion and wear resistance. Instrument housings, bearings, couplings, actuator stems etc. Meets NACE MR0175/ISO 15156.	.25" - 6.00"	110,000 - 200,000	90,000 - 175,000	15%	B95 - C39	--	Balance	--	1.80 - 2.00	0.20 Min	0.60 Max
Brush Alloy 25 HT (TH04) (TB00) (B601) (C17200)	(ASTM B196, B251, B643) API 7 API 6A	High Strength, low friction, non-magnetic, anti-galling, high hardness, thermal and electrical conductivity, corrosion, erosion and wear resistance. Instrument housings, bearings, couplings, actuator stems etc. Meets NACE MR0175/ISO 15156.	.25" - 6.00"	120,000 - 225,000	100,000 - 200,000	13%	B95 - C45	--	Balance	--	1.80 - 2.00	0.20 Min	0.60 Max

Oil & Gas Materials Reference Guide