

Fluid	Material	Material	Material
Boiler Blow Down	A106 Gr.B/A672 Gr.B60	A312 TP304L	
Boiler Feed Water	A106 Gr.B/A672 Gr.B60	A312 TP304L	
Cooling Water	A106 Gr.B/A672 Gr.B60		
LPS/LPC	A106 Gr.B/A672 Gr.B60		
MPS/MPC	A106 Gr.B/A672 Gr.B60		
Nitrogen	A106 Gr.B/A672 Gr.B60		
Plant Air	A106 Gr.B/A672 Gr.B60		
Fuel Gas	A106 Gr.B/A672 Gr.B60		
Natural Gas	A106 Gr.B/A672 Gr.B60		
Oily Water	A106 Gr.B/A672 Gr.B60		
Crude Methanol	A106 Gr.B/A672 Gr.B60	A312 TP304L	
Rich Methanol Liquid	A106 Gr.B/A672 Gr.B60		
Rich Methanol Gas	A106 Gr.B/A672 Gr.B60	A312 TP304L	
Methanol Water	A106 Gr.B/A672 Gr.B60	A312 TP304L	
Process Condensate		A312 TP304L	
Service Water	A106 Gr.B/A672 Gr.B60		
Ammonia Water		A312 TP304L	
Oxygen Scavenger		A312 TP304L	
NAOH Solution		A312 TP304L	
Demineralized Water		A312 TP304	
Turbine Condensate		A312 TP304	
Instrument Air		A312 TP304	

Lube Oil		A312 TP304	
Hydrogen Gas	A106 Gr.B/A672 Gr.B60	A312 TP304	
Synthesis Gas		A312 TP304L	
Reformed Gas	A312 TP321H	A312 TP304L	A335 P11
HPS/HPC			
HHPS	A106 Gr.B/A672 Gr.B60		A335 P11
Phosphate Solution		A312 TP304L	
Process Oxygen	B165 N04400	A312 TP304L	
Fire Water (AG)	A106 Gr.B/A672 Gr.B60		
Fire Water (after filter)	A53 Gr. B/GALV		
Fire Foam	A106 Gr.B/A672 Gr.B60		
Potable Water (AG)	A53 Gr. B/GALV.		
Potable Water (UG)	A53 Gr. B/GALV. PE Coated Externally		
Crossion Inhibitor (AG)	A312 TP316L		
H2SO4	A312 TP316L		
HCL Solution (2~40%) (AG)	CPVC		
NaClO Solution (10%) (AG)	CPVC		

Utility	Material
Boiler Blow Down	A106 Gr.B/A672 Gr.B60
Boiler Feed Water	A106 Gr.B/A672 Gr.B60
Cooling Water	A106 Gr.B/A672 Gr.B60
LPS/LPC	A106 Gr.B/A672 Gr.B60
MPS/MPC	A106 Gr.B/A672 Gr.B60
Nitrogen	A106 Gr.B/A672 Gr.B60
Plant Air	A106 Gr.B/A672 Gr.B60
Service Water	A106 Gr.B/A672 Gr.B60
Fire Foam	A106 Gr.B/A672 Gr.B60
Fire Water (AG)	A106 Gr.B/A672 Gr.B60
Demineralized Water	A312 TP304
Instrument Air	A312 TP304
Fire Water (after filter)	A53 Gr. B/GALV
Potable Water (AG)	A53 Gr. B/GALV.
Potable Water (UG	A53 Gr. B/GALV. PE Coated Externally

Chemicals	Material
Oxygen Scavenger	A312 TP304L
NAOH Solution	A312 TP304L
Phosphate Solution	A312 TP304L
Crossion Inhibitor (AG)	A312 TP316L
H2SO4	A312 TP316L
HCL Solution (2~40%) (AG)	CPVC
NaClO Solution (10%) (AG)	CPVC
Lube Oil	A312 TP304

Process Fluids	Material
Fuel Gas	A106 Gr.B/A672 Gr.B60
Natural Gas	A106 Gr.B/A672 Gr.B60
Methanol Mixtures	A106 Gr.B/A672 Gr.B60
Process Oxygen	B165 N04400 /A312 TP304L
Process Condensate	A312 TP304L

Ammonia Water	A312 TP304L
HHPS	
Turbine Condensate	A312 TP304
Hydrogen Gas	A106 Gr.B/A672 Gr.B60/ A312 TP304
Syngas (H ₂ +CO+CO ₂)	A312 TP304
Reformed Gas (H ₂ +CO+CO ₂)	A312 TP321H/ A312 TP304L

Drum/Tank/Culmn	Fluid	Material
D-1001	NG	CS
D-2002	Reformed Gas	SS
D-2003	Reformed Gas	SS
D-2004	Reformed Gas	SS
D-2005	Reformed Gas	SS
D-3001	Syngas	SS
D-3002	Syngas	SS
D-5001	Methanol	CS
D-5002	Methanol	CS
D-5003	Methanol	CS
D-6001	Saturated NG	SS
D-6002	Flashed BD+Ammonia	SS
D-7001	DMW+BFW	SS304L+CS
D-7002	BD	CS
D-7003	BD	CS

D-7004	BD	CS
D-5009	LPC	CS
D-2001	BFW+Steam	CS
D-3003	BFW+Steam	CS
D-2011	HPC	CS
T-5001	Methanol Water	CS
T-5002	Methanol Water	CS
T-5003	Methanol Water	CS
T-5004	Vaporized Methanol Water + CO2	SS
T-6001-Shell	MPS/MPC	CS
TK-7001	DMW	CS+Internal Painting
TK-7002	Water + CO2 + CO + H2	CS+liner
TK-5001	Raw Methanol	CS
TK-5002	Rich Methanol	CS
TK-5003	Liquid-off-stream	CS

Turbine/Compressor	Fluid	Material
FT-2001	HPS/LPS	CS
FT-2002	HPS/LPS	CS
FT-7001	HPS/LPS	CS
FT-3001	HHPS/LPS	CS
C-2001	Nitrogen	CS
C-2002	Hydrogen	

C-3001	Syngas	CS T>150 SS
--------	--------	----------------

Reactor	Fluid	Material
R-1001	NG	SA-516 Gr70
R-1002	NG	SA-516 Gr70
R-2003	Reformed Gas + SNG	2.25Cr 1Mo
R-2004	Reformed Gas + SNG	1.25Cr 0.5Mo
R-3001	BFW + Steam	CS

Component of Channel Side	CS	SS
Head	SA-516 70N	SA-240 304L
Shell	SA-516 70N	SA-240 304L
Channel Flange	SA-266 2N	SA-965 F304L/SA-182 F304
Pass Partition	SA-516 70N	
Nozzle	SA-105N	SA-182 F304L
Flange	SA-105N	SA-312 TP304L
Component of Heat Transfer		
Tie Rod	SA-36	SA-479 304
Spacer	SA-179	SA-213 TP304/SA-789/SA-312
Baffle	SA-516 70N	SA-240 304
Support Plate	SA-516 70N	SA-240 304L
Partition Plate	SA-516 70N	SA-240 304L
Impingement Plate	SA-516 70N	SA-240 304
Tubesheet	SA-266 2N	SA-182 F304/SA-965
Roller	SA-36	
Bonnet Flange Gasket	SS304+Flexible Gasket	
Body Flange Gasket	SS304+Flexible Gasket	
Hex Bolt	SA-193 B7	SA-193 B7/A2-70
Hex Nut	SA-194 Gr 2H	SA-194 Gr 2H/A2-70
Body Flange	SA-266 2N	SA-965 F304/F304L
Shell Side Shell	SA-516 70N	SA-240 304/ SA-387
Saddle Support	SA-516 70N/70	

Forged Nozzle	SA-105N	
Flange	SA-105N	
Tubes/U-Tubes	SA-179	SA-213 TP304/SA-789
Sealing Strip	SA-516 70N	SA-240 304L
Suitable Fluid	Natural Gas Cooling Water Methanol	Demineralized Water Reformed Gas Process Condensate