



CH2MHILL.

RUMAILA PROJECT

Document Number :	100478CP-N-PG-PP01-PR-LST-0002	Class	B
Document Title :	EQUIPMENT LIST		
Project Title:	EARLY POWER PLANT PROJECT, RUMAILA OIL FIELD, IRAQ		
Tag No's (if applicable)	N/A		
Contractor:	CHINA PETROLEUM ENGINEERING & CONSTRUCTION CORPORATION		
Contractor Document No:	481845-301-PR-LIS-0007	Rev	D02

D02	ISSUED FOR USE (DETAILED DESIGN)	28-Mar-16				
			FAHAD A. R.	V. UPADHYAY	A. BHAYO	S. QAZI
D01	ISSUED FOR USE (DETAILED DESIGN)	3-Feb-16				
			S. IRFAN	V. UPADHYAY	A. BHAYO	S. QAZI
G01	ISSUED FOR REVIEW (DETAILED DESIGN)	10-Dec-15				
			S. IRFAN	V. UPADHYAY	T. THOROGOOD	S. QAZI
B01	ISSUED FOR USE	13-Aug-15				
			S. HASAN	S. IRFAN	T. THOROGOOD	S. QAZI
A01	ISSUED FOR COMPANY REVIEW	12-Mar-15				
			T.SHIMNA	R.SUR	T. THOROGOOD	S.QAZI
Rev.	Revision Description	Date	Originated	Reviewed	Approved	



**EARLY POWER PLANT PROJECT
RUMAILA OIL FIELD, IRAQ
CONTRACT NO.: 100478**



EQUIPMENT LIST

CLA

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REVISION DESCRIPTION SHEET

EARLY POWER PLANT PROJECT RUMAILA OIL FIELD, IRAQ CONTRACT NO.: 100478															
EQUIPMENT LIST															
DOCUMENT NO.:100478CP-N-PG-PP01-PR-LST-0002-D02															
CLASS	B														
Sl. No.	EQUIPMENT TAG NO	EQUIPMENT DESCRIPTION	EQUIPMENT LOCATION	Design Capacity	Quantity (No.)	Dimensions	Operating Pressure (Barg)	Design Pressure (Barg)	Operating Temp. (°C)	Design Temp. (°C)	Motor Power (kW)	Heat Duty (kW)	MOC + C.A.	P&ID	REMARKS
Fuel Gas System															
1	PP01-361-V001	Scraper Launcher (DS-1)	Outside DS-1	NA	1	Major Barrel 610mm Dia / Minor Barrel 508mm Dia	10 ~11	45	20 ~ 80	-29/100	NA		CS (NACE) + 3mm CA	100478CP-N-PG-PP01-PR-PID-0004-001	
2	PP01-361-V002	Scraper Receiver (DS-1)	EPP	NA	1	Major Barrel 610mm Dia / Minor Barrel 508mm Dia	10 ~11	45	20 ~ 80	-29/100	NA		CS (NACE) + 3mm CA	100478CP-N-PG-PP01-PR-PID-0005-001	
3	PP01-361-V003	Scraper Launcher (DS-3)	Outside DS-3	NA	1	Major Barrel 610mm Dia / Minor Barrel 508mm Dia	10 ~11	45	20 ~ 80	-29/100	NA		CS (NACE) + 3mm CA	100478CP-N-PG-PP01-PR-PID-0006-001	
4	PP01-361-V004	Scraper Receiver (DS-3)	EPP	NA	1	Major Barrel 610mm Dia / Minor Barrel 508mm Dia	10 ~11	45	20 ~ 80	-29/100	NA		CS (NACE) + 3mm CA	100478CP-N-PG-PP01-PR-PID-0007-001	
5	PP01-362-V001	Fuel Gas KO Drum	EPP	60,000 Kg/h	1	2200 mm (I.D) x 5500 mm (L)	9 ~10.4	14/FV	20 ~ 80	-15/100	NA		CS + 3mm CA (Internal Epoxy Ceramic Coating)	100478CP-N-PG-PP01-PR-PID-0008-001	
6	PP01-362-Z001	Fuel Gas Treatment Package	EPP	60,000 Kg/h	1	15000 mm (W) x 25000 mm (L)	8.7 ~10.4	14/FV	20 ~ 80	-29/100	NA		CS + 3mm CA (Internal Epoxy Coated)	100478CP-N-PG-PP01-PR-PID-0009-001	
7	PP01-362-V002A	Inlet Filter Separator A	EPP	60,000 Kg/h	1	1100 mm (ID) x 4800 mm (H)	8.7 ~10.4	14/FV	20 ~ 80	-29/100	NA		CS + 3mm CA (Internal Epoxy Coated)	100478CP-N-PG-PP01-PR-PID-0009-001	Part of Fuel Gas Treatment Package (PP01-362-Z001)
8	PP01-362-V002B	Inlet Filter Separator B	EPP	60,000 Kg/h	1	1100 mm (ID) x 4800 mm (H)	8.7 ~10.4	14/FV	20 ~ 80	-29/100	NA		CS + 3mm CA (Internal Epoxy Coated)	100478CP-N-PG-PP01-PR-PID-0009-001	
9	PP01-362-V003A	Adsorbent vessel A	EPP	24,000 Kg/h	1	3800 mm (ID) x 9120 mm (H)	8.7 ~10.4	14/FV	20 ~ 80	-29/100	NA		CS + 3mm CA (Internal Epoxy Coated)	100478CP-N-PG-PP01-PR-PID-0010-001	
10	PP01-362-V003B	Adsorbent vessel B	EPP	24,000 Kg/h	1	3800 mm (ID) x 9120 mm (H)	8.7 ~10.4	14/FV	20 ~ 80	-29/100	NA		CS + 3mm CA (Internal Epoxy Coated)	100478CP-N-PG-PP01-PR-PID-0010-001	
11	PP01-362-H001	Superheater	EPP	24,000 Kg/h	1	1000 mm (I.D.) x 4000 mm T/T	8.7 ~10.4	14/FV	20 ~ 80	-29/100	NA	70	CS + 3mm CA (Internal Epoxy Coated) BUNDLE : SS316	100478CP-N-PG-PP01-PR-PID-0010-001	
12	PP01-362-F001	Particle Filter	EPP	24,000 Kg/h	1	850 mm (I.D.) x 2000 mm T/T	8.7 ~10.4	14/FV	20 ~ 80	-29/100	NA		CS + 3mm CA (Internal Epoxy Coated)	100478CP-N-PG-PP01-PR-PID-0010-001	
13	PP01-363-C101	1st Fuel Gas Compressor	EPP	30,000 Kg/h	1	3600 mm (W) x 10000 mm (L)	6.95 ~ 29	35	20 ~ 172	-20/200	1960		Casing : CS Rotor: CS Shaft: SS	100478CP-N-PG-PP01-PR-PID-0011-001	
14	PP01-363-V101	1st Fuel Gas Compressor Suction KO Drum	EPP	30,000 Kg/h	1	2160 mm (ID) x 4000 mm (H)	7.25 ~ 9.0	35/FV	20 ~ 100	-20/150	-		CS + 3mm CA (Internal Epoxy Ceramic Coating)	100478CP-N-PG-PP01-PR-PID-0011-001	
15	PP01-363-H102	1st Fuel Gas Compressor Recycle Cooler	EPP	30,000 Kg/h	1	Bay Width : 3743 mm Tube Length: 7000 mm (L)	7.5 ~ 8.5	35	35 ~ 120	-20/150	18.5	1264	SS316L (Tube) Headers: SS316L	100478CP-N-PG-PP01-PR-PID-0011-001	
16	PP01-363-H101	1st Fuel Gas Compressor Discharge Cooler	EPP	30,000 Kg/h	1	Bay Width : 1783 mm Tube Length: 3657.6 mm (L)	29	35	105 ~ 180	-20/200	5.5	694.6	SS316L (Tube) Headers: SS316L	100478CP-N-PG-PP01-PR-PID-0011-002	
17	PP01-363-V102	1st Fuel Gas Compressor Discharge KO Drum	EPP	30,000 Kg/h	1	1200 mm (ID) x 3000 mm (H)	29	35/FV	105 ~ 120	-20/150			CS + 3mm CA (Internal Epoxy Ceramic Coating)	100478CP-N-PG-PP01-PR-PID-0011-002	
18	PP01-363-C201	2nd Fuel Gas Compressor	EPP	30,000 Kg/h	1	3600 mm (W) x 10000 mm (L)	6.95 ~ 29	35	20 ~ 180	-20/200	1960		Casing : CS Rotor: CS Shaft: SS	100478CP-N-PG-PP01-PR-PID-0011-003	
19	PP01-363-V201	2nd Fuel Gas Compressor Suction KO Drum	EPP	30,000 Kg/h	1	2160 mm (ID) x 4000 mm (H)	7.25 ~ 9.0	35/FV	20 ~ 100	-20/150	-		CS + 3mm CA (Internal Epoxy Ceramic Coating)	100478CP-N-PG-PP01-PR-PID-0011-003	

		EARLY POWER PLANT PROJECT RUMAILA OIL FIELD, IRAQ CONTRACT NO.: 100478														
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CLASS	B	DOCUMENT NO.:100478CP-N-PG-PP01-PR-LST-0002-D02														Page 4 of 6
Sl. No.	EQUIPMENT TAG NO	EQUIPMENT DESCRIPTION	EQUIPMENT LOCATION	Design Capacity	Quantity (No.)	Dimensions	Operating Pressure (Barg)	Design Pressure (Barg)	Operating Temp. (°C)	Design Temp. (°C)	Motor Power (kW)	Heat Duty (kW)	MOC + C.A.	P&ID	REMARKS	
20	PP01-363-H202	2nd Fuel Gas Compressor Recycle Cooler	EPP	30,000 Kg/h	1	Bay Width : 3743 mm Tube Length: 7000 mm (L)	7.5 ~ 8.5	35	35 ~ 120	-20/150	18.5	1264	SS316L (Tube) Headers: SS316L	100478CP-N-PG-PP01-PR-PID-0011-003		
21	PP01-363-H201	2nd Fuel Gas Compressor Discharge Cooler	EPP	30,000 Kg/h	1	Bay Width : 1783 mm Tube Length: 3657.6 mm (L)	29	35	105 ~ 180	-20/200	5.5	694.6	SS316L (Tube) Headers: SS316L	100478CP-N-PG-PP01-PR-PID-0011-004		
22	PP01-363-V202	2nd Fuel Gas Compressor Discharge KO Drum	EPP	30,000 Kg/h	1	1200 mm (ID) x 3000 mm (H)	29	35/FV	105 ~ 120	-20/150			CS + 3mm CA (Internal Epoxy Ceramic Coating)	100478CP-N-PG-PP01-PR-PID-0011-004		
23	PP01-363-C301	3rd Fuel Gas Compressor	EPP	30,000 Kg/h	1	3600 mm (W) x 10000 mm (L)	6.95 ~ 29	35	20 ~ 180	-20/200	1960		Casing : CS Rotor: CS Shaft: SS	100478CP-N-PG-PP01-PR-PID-0011-005		
24	PP01-363-V301	3rd Fuel Gas Compressor Suction KO Drum	EPP	30,000 Kg/h	1	2160 mm (ID) x 4000 mm (H)	7.25 ~ 9.0	35/FV	20 ~ 100	-20/150	-		CS + 3mm CA (Internal Epoxy Ceramic Coating)	100478CP-N-PG-PP01-PR-PID-0011-005		
25	PP01-363-H302	3rd Fuel Gas Compressor Recycle Cooler	EPP	30,000 Kg/h	1	Bay Width : 3743 mm Tube Length: 7000 mm (L)	7.5 ~ 8.5	35	35 ~ 120	-20/150	18.5	1264	SS316L (Tube) Headers: SS316L	100478CP-N-PG-PP01-PR-PID-0011-005		
26	PP01-363-H301	3rd Fuel Gas Compressor Discharge Cooler	EPP	30,000 Kg/h	1	Bay Width : 1783 mm Tube Length: 3657.6 mm (L)	29	35	105 ~ 180	-20/200	5.5	694.6	SS316L (Tube) Headers: SS316L	100478CP-N-PG-PP01-PR-PID-0011-006		
27	PP01-363-V302	3rd Fuel Gas Compressor Discharge KO Drum	EPP	30,000 Kg/h	1	1200 mm (ID) x 3000 mm (H)	29	35/FV	105 ~ 120	-20/150			CS + 3mm CA (Internal Epoxy Ceramic Coating)	100478CP-N-PG-PP01-PR-PID-0011-006		
28	PP01-364-IMS001	Fuel Gas Metering Package	EPP	60,000 Kg/h	1		28 ~ 28.9	35	105 ~ 120	-20/150	NA		CS - (piping) SS316L - (Flow Meter)	100478CP-N-PG-PP01-PR-PID-0012-001		
29	PP01-361-V005	DS-3 Gas Pipeline KO Drum	EPP	60,000 Kg/h	1	2000 mm (I.D) x 4000 mm (L)	10	45/FV	20 ~ 80	-29/100	NA		CS + 3mm CA (Internal Epoxy Ceramic Coating)	100478CP-N-PG-PP01-PR-PID-0049-001		
Instrument Air Distribution System																
30	PP01-564-Z001	Air Compressor Package (3 x 50%)	EPP	1750 Nm ³ /h (875 Nm ³ /h each compressor)	3	12000 mm (W) x 15000 mm (L)	10	12	12 ~ 63	-2/85	VTA		By Vendor	100478CP-N-PG-PP01-PR-PID-0025-001		
31	PP01-564-V001	Instrument Air Receiver	EPP	500 Nm ³ /h	1	3650 I.D. x 6850 mm T/T	8.5 ~ 9.4	12	12 ~ 63	-2/85	VTA		CS + 1.5mm CA	100478CP-N-PG-PP01-PR-PID-0025-003		
Nitrogen Generation System																
32	PP01-567-Z001	Nitrogen Generation Package	EPP	250 Nm ³ /h of Nitrogen	1	12000 mm (W) x 12000 mm (L)	8.5 ~ 9.4	12	12 ~ 63	-2/85	VTA		By Vendor	100478CP-N-PG-PP01-PR-PID-0026-001		
33	PP01-567-V001	Nitrogen Receiver	EPP	422 Nm ³ /h of Nitrogen	1	4500 mm (I.D.) x 8000 mm T/T	6.5 ~ 8.4	12	12 ~ 63	-2/85	NA		CS + 1.5mm CA	100478CP-N-PG-PP01-PR-PID-0026-002		

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Si. No.	EQUIPMENT TAG NO	EQUIPMENT DESCRIPTION	EQUIPMENT LOCATION	Design Capacity	Quantity (no.)	Dimensions	Operating Pressure (Barg)	Design Pressure (Barg)	Operating Temp. (°C)	Design Temp. (°C)	Motor Power (kW)	Heat Duty (kW)	MOC + C.A.	P&ID	REMARKS	
Diesel Fuel System																
34	PP01-560-T001	Diesel Storage Tank (Note-3)	EPP	23.9 m ³	1	4000(I.D) x 3000 mm(H)	ATM	0.1 / -0.006	AMB	-2 / 85	NA		CS + 3 mm CA (Shell) CS + 1.5mm (Roof) (Internal Epoxy Coating)	100478CP-N-PG-PP01-PR-PID-0027-001		
35	PP01-560-P001 A	Diesel Transfer Pumps	EPP	4m ³ /h	1+1 Warehouse Spare	NA	1.78	3.5	AMB	-2 / 85	3		CS + 13% Cr -(Impeller) CS - (Casing)	100478CP-N-PG-PP01-PR-PID-0027-001		
Raw Water, Service Water, Fire Water and Demineralization Water System																
36	PP01-554-T001	Raw Water Storage Tank (Note-3)	EPP	903 m ³	1	10000(I.D) x 13000 mm(H)	ATM	0.01 + Full of Water / -0.006	5 ~ 35	-2/85	NA		CS + 3 mm CA (Shell) CS + 1.5mm (Roof) (Internal Epoxy Coating)	100478CP-N-PG-PP01-PR-PID-0028-001		
37	PP01-553-T001	Service Water Storage Tank (Note-3)	EPP	100 m ³	1	5300(I.D) x 5000 mm(H)	ATM	0.01 + Full of Water / -0.006	5 ~ 35	-2/85	NA		CS + 3 mm CA (Shell) CS + 1.5mm (Roof) (Internal Epoxy Coating)	100478CP-N-PG-PP01-PR-PID-0029-001		
38	PP01-553-P001 A/B	Service Water Pumps	EPP	17.6 m ³ /h	2	NA	5.8	8.0	AMB	-2/85	11		Casing: Cast Iron Impeller: Bronze	100478CP-N-PG-PP01-PR-PID-0029-001		
39	PP01-553-Z101/201	RO (Reverse Osmosis) Package	EPP	3.0 m ³ /h of Permeate	1	NA	By Vendor	By Vendor	5 ~ 35	-2/85	By Vendor		By Vendor	100478CP-N-PG-PP01-PR-PID-0028-001		
40	PP01-555-Z001	Demineralization Water Package	EPP	1.0 m ³ /h	1	NA	By Vendor	By Vendor	5 ~ 35	-2/85	By Vendor		By Vendor	100478CP-N-PG-PP01-PR-PID-0030-001		
41	PP01-550-Z001	Portable Water Sterilization Package	EPP	12.0 m ³ /h	1	NA	5.8	8.0	5 ~ 35	-2/85	NA		By Vendor	100478CP-N-PG-PP01-PR-PID-0029-001		
Flare System																
42	PP01-500-Z001	HP / LP Flare Package	EPP	148000 kg/h / 5000 kg/h	1	HP Flare Dimensions: 1371.6mm OD (Lower Section) 995.6mm OD (Middle Section) 609.6mm OD (Upper Section) Overall Height including HP Flare Tip: 27.432m LP Flare Dimensions: 8 inch Dia. Overall Height including LP Flare Tip: 27.432m	0.1 ~ 3.6 (HP) / 0.1 (LP)	10 (HP) / 10 (LP)	30 ~ 164 / 3.7 ~ 108.5	-29/200 (HP)/ -2/150 (LP)	NA		HP Flare Riser: A516 Gr.70N LP Flare Riser: A106 Gr.B HP/LP Flare Tip: SS310	100478CP-N-PG-PP01-PR-PID-0023-001		
43	PP01-500-V001	HP Flare Knock-Out Drum	EPP	25 m ³	1	2350 I.D. x 5000 mm T/T	0.1 ~ 3.6	10/FV	30 ~ 164	-29/200	NA		CS + 3mm CA (Internal Epoxy Ceramic Coating)	100478CP-N-PG-PP01-PR-PID-0022-001		
Condensate System																
44	PP01-512-V001	Condensate Storage Vessel	EPP (Utility Area)	43 m ³	1	2700 mm (I.D) x 7800 mm (L)	0.1 ~ 1.0	10/FV	120	-20/150	NA		CS+3mm CA (With NACE & Epoxy Lined)	100478CP-N-PG-PP01-PR-PID-0024-001		
45	PP01-375-P001A/B	Condensate Transfer Pumps	EPP (Utility Area)	15 m ³ /h	2	NA	1.84	3.8	18/120	-20/150	7.5		Casing: SS316 Impeller: SS316	100478CP-N-PG-PP01-PR-PID-0024-001		
46	PP01-375-T001	Condensate Transfer Tank (Note-3)	EPP (Utility Area)	94 m ³	1	6000 mm (I.D) x 4000 mm (H)	0.01~0.08	0.172/0.006	18 ~ 72	93	NA		CS +3mm CA (Epoxy Lined)	100478CP-N-PG-PP01-PR-PID-0024-002		
47	PP01-375-P002A/B	Condensate Export Pumps	EPP (Utility Area)	20 m ³ /h	2	NA	13.6	27	18/72	93	37		Casing: SS316 Impeller: SS316	100478CP-N-PG-PP01-PR-PID-0033-001	15 m ³ /h is the pump forward flow.	
Chemical Injection Package																
48	PP01-520-Z101	Corrosion Inhibitor Injection Package DS-1	Outside DS-1	1.4 LPH	1	1000 L x 1000 W x 1200 H	16.5	45	AMB	85	0.55		Body: SS316L Diaphragm: PTFE	100478CP-N-PG-PP01-PR-PID-0031-001		
49	PP01-520-Z201	Corrosion Inhibitor Injection Package DS-3	Outside DS-3	1.4 LPH	1	1000 L x 1000 W x 1200 H	16.5 ~ 35.9	45	AMB	85	0.55		Body: SS316L Diaphragm: PTFE	100478CP-N-PG-PP01-PR-PID-0031-002		
Fire Water																
50	PP01-610-T001	Fire Water Storage Tank (Note-3)	EPP	1817m ³	1	13500 mm (ID) x 15000 mm (H)	ATM	0.01+ full of water / -0.006	5 ~ 35	-2/85			CS + 3mm CA	100478CP-N-PG-PP01-SR-PID-0001-001		
51	PP01-610-Z001	Electric Motor Driven Fire Water Pump	EPP	454 m ³ /h	1	1082mm (W) x 2000mm (L)	9.34	60	5 ~ 35	-2/85	190			100478CP-N-PG-PP01-SR-PID-0002-001		
52	PP01-610-Z002	Diesel Engine Driven Fire Water Pump	EPP	454 m ³ /h	1	1199mm (W) x 2500mm (L)	9.4	60	5 ~ 35	-2/85	NA		Casing: CS Impeller: Bronze (VC)	100478CP-N-PG-PP01-SR-PID-0002-001		
53	PP01-610-Z003	Jockey Pumps Skid	EPP	30 m ³ /h	1	By Vendor	9.9	18	5 ~ 35	-2/85	25			100478CP-N-PG-PP01-SR-PID-0003-001		
GTC Package																
54	PP01-700-Z101/201/301/401/501	GTC Package	EPP	30MW - min 42.1MW - ISO	5	40000mm (W) x 50000mm (L)			-2/55			30MW - min 42.1MW - ISO	Note-6	100478CP-1-ME-001-C03-0001 ~ 0021		
Emergency Generator Package																
55	PP01-740-GD001	Emergency Diesel Generator Set	EPP	5.496 Mwe	1	5100mm (W) x 12300mm (L)			-2/55			5.496 Mwe	Note-7			
Oily Water Drains Lift Station FG Compressor Area																
56	PP01-511-P002A/B	AOC Sump Pumps - FG Compressor Area	EPP	230 m ³ /h	2	NA	1.28	3.5	10 ~ 50	-2 / 55	18.5		Casing: DSS Impeller: DSS	100478CP-N-PG-PP01-PR-PID-0046-001		
Oily Water Drains Lift Station Utility Area																
57	PP01-511-P001A/B	AOC Sump Pumps - Utility Area	EPP	82 m ³ /h	2	NA	2	3.5	10 ~ 50	-2 / 55	15		Casing: DSS Impeller: DSS	100478CP-N-PG-PP01-PR-PID-0047-001		
Sewage Treatment System																
58	PP01-569-Z001	Sewage Treatment Package	EPP	11 m ³ /day	1	By Vendor		3.5				85		By Vendor	100478CP-N-PG-PP01-PR-PID-0048-001	
59	PP01-569-P001A/B	Sewage Sump Pumps	EPP	10 m ³ /h	2	NA	1.72	3.5	10 ~ 50	-2 / 55	By Vendor		Casing: CI Impeller: Bronze	100478CP-N-PG		



**EARLY POWER PLANT PROJECT
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EQUIPMENT LIST

CLAS

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NOTES

1. DELETED.
 2. DELETED.
 3. THE CAPACITY INDICATED IS THE WORKING CAPACITY OF THE TANK BETWEEN LOW LIQUID LEVEL (LLL) TO HIGH LIQUID LEVEL (HLL).
 4. DELETED.
 5. DELETED.
 6. FOR GTG MATERIAL OF CONSTRUCTION, REFER GAS TURBINE DATA SHEET DOC. NO. 100478CP-1-ME-001-D03-0001.
 7. FOR EDG MATERIAL OF CONSTRUCTION, REFER DIESEL ENGINE DATA SHEET DOC. NO. 100478CP-1-ME-009-D03-0001.

LEGENDS

NA - NOT APPLICABLE

VTA - VENDOR TO ADVICE

VTC - VENDOR TO CONFIRM

CS - CARBON STEEL

SS - STAINI ESS STEFI

NACE - NATIONAL ASSOCIATION OF CORROSION ENGINEERS

DSS - DUPLEX STAINLESS STEEL

CL. CAST IRON

PTEE POLYTETRAFLUOROETHYLENE