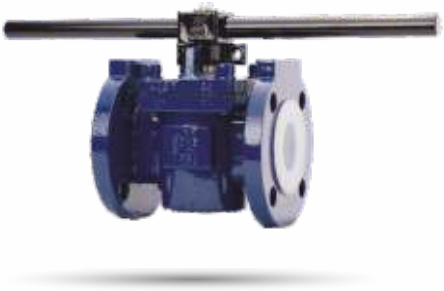
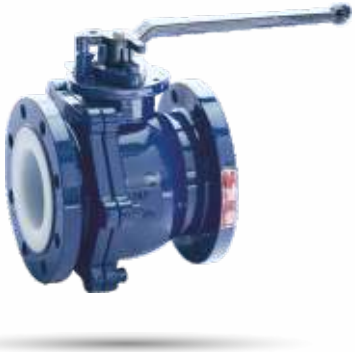
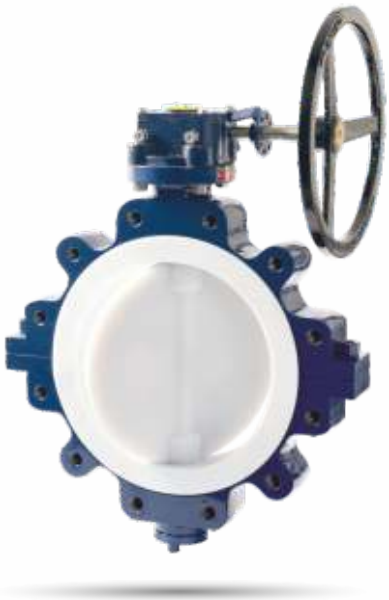
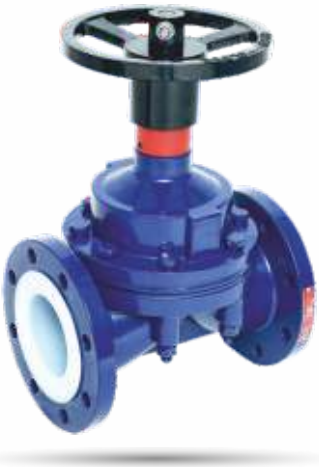
OUR PRODUCT RANGE







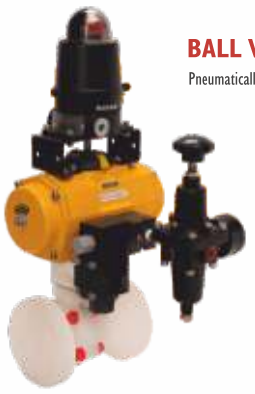


UNPPolyvalves

Valve Solutions For Corrosive Applications

BALL VALVE

Lever Operated



BALL VALVE

Pneumatically Actuated

DIAPHRAGM VALVE

Rising Handwheel

BUTTERFLY VALVE

Gear Operated

UNPPolyvalves

Valve Solutions For Corrosive Applications

ABOUT US

Incepted in 1988, UNP Polyvalves is manufacturing and supplying valves and piping solutions for the corrosive and aggressive chemical applications.

Taking up the challenge of changing market trends and industry requirements, UNP Polyvalves entered into manufacturing of solid plastic and lined valves and piping systems. Beginning with small manufacturing facility and variety of valves, today UNP Polyvalves is a leading brand in providing most reliable solutions for lined as well as solid plastic valves and piping systems.

UNP Polyvalves has been working very closely with the end users of various plants, understanding different application requirements and difficulties, UNP Polyvalves provided solutions for the same with their in-depth understanding of processes and its safety requirements.

UNP Polyvalves possesses most knowledgeable, experienced and skill set of workforce, resulting in manufacturing of products of high performance and unmatched quality with reliability. Having vision for quality with reliability, UNP aims for highest level of customer satisfaction at every level.

UNP Polyvalves has customer base across the globe, having establishments in North America. UNP Polyvalves has presence in more than 45 countries.

ACHIEVEMENTS

UNP Polyvalves possesses knowledge of the exact process requirements and with technical skill set of people we have resolves process related issues in various plants such as chlor-alkali plants, steel industry, pickling and ARPs, chemical injection skid manufacturing OEMs for Oil & Gas industries, mining and other chemical related plants.

UNP Polyvalves is approved by worlds leading consultants and EPC contractors such as ThyssenKrupp, Worley, Mott McDonald, TOYO Engineering, FLUOR, EIL, etc.

UNP has major product and system qualifications such as ISO 9001:2015, PED, FE (ISO 15848-1), EN 14432, ATEX, SIL 3 compliance, etc.

GENERAL PROPERTIES OF POLYMERS

TECHNICAL PROPERTIES / POLYMERS	SPECIFIC GRAVITY	WATER ABSORPTION (%)	HARDNESS ROCKWELL YIELD (PSI)	TENSILE STRENGTH NOTCHED (ft. lb/in)	IMPACT STRENGTH (ft. lb/in)	ELONGATION AT BREAK TEMP. (°C)	HDT (°C)	INJECTION MOULDING TEMP. (°C)	MAX WORKING TEMP. (°C)
NORMAL GRADE PP	0.90 - 0.91	0.01 - 0.03	50	4400	1.5 - 2.5	200	90	200 - 300	80 - 85
ISOTACTIC PP	0.90	0.01	70	4800	2.2 - 2.7	200	142	200 - 300	120
PVDF	1.77 - 1.78	0.03	76 - 80	7000	2.0 - 4.0	50 - 250	168	200 - 300	-40 to +140
ETFE	1.70	0.007	75	6700	2.0	300	176	310 - 330	-100 to +160
FEP	2.15	0.004	60	3400	2.9	325	260	350 - 370	205
PFA	2.15	<0.03	72	3600	1.2	300	305	350 - 370	260

ADVANTAGES OF ISOTACTIC PP V/S NORMAL GRADE PP

ISOTACTIC PP is a fractional MFI homopolymer therefore it has sufficiently better toughness than any other homopolymer.
Due to the presence of atmospheric oxygen, degradation and oxidation of NORMAL GRADE PP is inevitable even when there is no direct sunlight, while ISOTATIC PP is immune to such degradation and oxidation.
Chemical resistance of ISOTACTIC PP is more than that of NORMAL GRADE PP even at an elevated temperature.
ISOTACTIC PP has excellent heat resistance upto 120°C as against 85-90°C of NORMAL GRADE PP, w.r.t water.
This grade is proven in pickling lines (CRM) as well as ARP in steel Industries for handling HCL containing ferrous and ferric chloride at an elevated temp. upto 110°C.
This grade is also proven in Caustic Chloro Plant for application in brine for Anolyte and Catholyte service upto 100°C.
This grade is also proven in application of HCL with solvent traces such as benzene, toluene etc. at an elevated temperature upto 110°C.

MINIMUM LIFE EXPECTED IN HOURS

FOR THREE CONTINUOUS SERVICE & TEMPERATURE LEVELS

FORMULATION	AT 120 °C	AT 100 °C	AT 80 °C
ISOTACTIC PP	18,000 (2 YRS)	1,04,000 (12 YRS)	7,15,000 (80 YRS)

UNIQUE PROPERTIES OF LINING MATERIALS

PTFE (POLYTETRAFLUOROETHYLENE)

PTFE has excellent properties such as chemical inertness, heat resistance (both high and low), electrical insulation properties, low coefficient of friction (Static 0.08 and Dynamic 0.01), and nonstick property over a wide temperature range up to 260°C. It has a density in the range of 2.1 to 2.3 g/cm^3 and melt viscosity in the range of 25 MPa.s (cP). Molecular weight of PTFE cannot be measured by standard methods. Instead, an indirect approach is used to judge molecular weight. Standard Specific Gravity (SSG) is the specific gravity of a chip prepared according to a standardized procedure. The underlying principle is that lower molecular weight PTFE crystallizes more extensively, thus yielding higher SSG values.

TFM™ PTFE

The new generation of chemically modified PTFE enhances the performance of classic PTFE by providing outstanding low deformation under load, compression stress relaxation (recovery), reduced permeation, fewer voids, increased surface smoothness and good welding characteristics

PFA (PER FLURO ALKOXY)
(A POLYMER OF TETRAFLUOROETHYLENE AND PERFLUOROVINYLETHER)

PFA polymers are fully fluorinated and melt-processible. They have chemical resistance and thermal stability comparable to PTFE. Specific gravity of perfluoroalkoxy resins is in the range of 2.12 to 2.17. PFA has an upper continuous use temperature of 260°C crystallinity and specific gravity of PFA parts decrease when the cooling rate of the molten polymer is increased. The lowest crystallinity obtained by quenching molten PFA in ice was 48% (specific gravity 2.123).

FEP (FLUORINATED ETHYLENE-PROPYLENE COPOLYMERS)
(A POLYMER OF TETRAFLUOROETHYLENE AND HEXAFLUOROPROPYLENE)

Fluorinated ethylene-propylene copolymers are fully fluorinated and melt-processible. They have excellent chemical resistance and thermal stability. Specific gravity of FEP resins is in the range of 2.13 to 2.15. FEP has an upper continuous use temperature of 200°C.

ETFE (ETHYLENE TETRA FLUORO ETHYLENE)
(A POLYMER OF TETRAFLUOROETHYLENE AND ETHYLENE)

PVDF and equimolar ETFE are isomers but the latter has a higher melting point and a lower dielectric loss than the former. ETFE crystallizes into unit cells believed to be orthorhombic or monoclinic. The molecular conformation of ETFE is an extended zigzag. This polymer is dissolved in some boiling esters at above 230°C, thus allowing determination of molecular weight (weight-average) by light scattering. ETFE has several transitions, alpha relaxation at 110°C (shifts to 135°C at higher crystallinity), beta at 25°C and gamma relaxation at 120°C. ETFE has good mechanical properties including tensile and cut-through resistance and lower creep than perfluoropolymers. ETFE is more resistant to radiation than perfluoropolymers (modestly affected up to 20 Mrad) and can be crosslinked by radiation such as electron beam. Crosslinking is used to strengthen cut- through resistance of ETFE wire insulation.

ECTFE

Halar® ECTFE is a partially fluorinated semi-crystalline polymer offering a unique combination of properties for highly demanding industries.

Outstanding chemical, permeation and fire resistance

Low permeability

Excellent weatherability

Excellent release properties

Good abrasion resistance

It is widely used in anti-corrosion applications as a lining or in self-supporting constructions (piping). Its excellent fire resistance properties and chemical resistance make Halar® ECTFE a product of first choice in wire and cable applications, in communication cable or speciality cable.

PPH (POLYPROPYLENE HOMOPOLYMER)

Polypropylene is available in two basic types as either homo polymer or copolymer material. Although similar in many respects each type exhibits distinct differences in both appearance and performance. Polypropylene Homopolymer (PPH) is the most widely utilized. PPH offers a high strength to weight ratio and is stiffer and stronger than copolymer, this combined with good chemical resistance and weldability allows this material to be used in many corrosion resistant structures.

PFA (CONDUCTIVE)

3M Dyneon™ Fluoroplastic PFA 8502ESDZ is an electrostatic dissipative fluorothermoplastic compound consisting of a fully fluorinated PFA base polymer and an electroconductive carbon black. The product has specifically been developed for transfer moulding.

Electrostatic dissipative

Processing : Transfer moulding

Wide service temperature range upto 240°C

SPECIAL FEATURES OF UNP LINED VALVES

	FEATURES	OPTIONS AVAILABLE
CASTINGS	All castings used are investment castings and only for large size UNP uses sand castings. Investment castings are used to obtain homogeneous and intact lining quality with uniform lining thickness which provides UNP valve a reliable lining quality and long lasting performance.	ASTM A216 GR. WCB ASTM A351 GR. CF8 ASTM A351 GR. CF8M ASTM A351 GR. CF3M ASTM A352 GR. LCB OR LCC ASTM A890 GR. 4A (CD3MN) ASTM A494 HASTELLOY C276 / C 22
TRIM INSERTS	UNP through its stringent design considerations has taken both the aspects of corrosion resistance and mechanical strength. Considering high torques in case of butterfly and plug valves UNP decided to use ASTM A890 GR. 4A(CD3MN) duplex material to obtain high "MAST" (Maximum Allowable Shear Torque) values ensuring intactness of plug and disc shafts even at higher operational torques. For other valves UNP uses trim inserts at higher grade of metal as ASTM A351 GR. CF8.	ASTM A351 GR. CF8 ASTM A351 GR. CF8M ASTM A351 GR. CF3M ASTM A890 GR. 4A (CD3MN) ASTM A494 HASTELLOY C276 / C22
BODY BOLTS	UNP uses allen bolts or stud & nut combination and high tensile body bolts are used considering its mechanical as well as corrosion aspects.	SS 304 SS 316 SS 316L ALLOY 20 ASTM A193 GR. B7 & A194 GR. 2H ASTM A494 HASTELLOY C276 / C22 MONEL
LINING MATERIALS	UNP uses 100% virgin lining materials and is buying directly from the sources such as dyneon, chemours, solvay, Ilyondell basell etc. ensuring that the best and uniform quality of lining is done for UNP valves ensuring high reliability in terms of life and performance.	PFA FEP ETFE PVDF ECTFE PPH ANTI-STATIC PFA
PAINTING OF VALVES	UNP has best painting technique and is using two part epoxy paint with proper paint procedure 1st of coat of epoxy primer and 2nd & 3rd coat of epoxy paint with minimum DFT of 150 microns. Painting is most important in the UNP valve as it provides protection against most corrosive environment making the valve to survive against most corrosive environment and provides metal a very long life.	TWO PART EPOXY POLYEURATHENE OR ANY OTHER PAINT WITH DIFFERENT RAL CODES.

MANUFACTURING STANDARDS, TEST STANDARDS AND FLANGE DIMENSIONS OFFERED

LINED VALVE TYPE	MANUFACTURING STANDARD	END TO END DIMENSIONS	FLANGE RATINGS OFFERED	TESTING STANDARDS
BALL VALVE	BS EN 17292	ANSI B 16.1 or DIN EN 558-1	ANSI B 16.5 #150 or #300 JIS 10K, DIN PN10	BS EN 12266-1 API 598
PLUG VALVE	API 599	ANSI B 16.1 or DIN EN 558-1	ANSI B 16.5 #150 or #300 JIS 10K, DIN PN10	BS EN 12266-1
BUTTERFLY VALVE	API 609 CATEGORY A	API 609 CATEGORY A	ANSI B 16.5 #150 or DIN PN 10	BS EN 12266-1
DIAPHRAGM VALVE	BS EN 13397	DIN EN 558-1 SERIES 7	ANSI B 16.5 #150 or DIN PN 10	BS EN 12266-1
BALL CHECK VALVE	MANUFACTURER'S STANDARD	ANSI B16.1 UPTO 4", 6"AND ABOVE MANUFACTURES STANDARD	ANSI B 16.5 #150 or DIN PN 10	BS EN 12266-1
SWING CHECK VALVE	MANUFACTURER'S STANDARD	MANUFACTURER'S STANDARD	ANSI B 16.5#150 or DIN PN 10	BS EN 12266-1
GLOBE VALVE	API 608 / BS 1873	DIN EN 558 SERIES 1	ANSI B 16.5#150 or DIN PN 10	BS EN 12266-1

THERMOPLASTIC VALVES

BALL VALVE
Lever Operated

BALL VALVE
Socket Weld / Threaded End

BUTTERFLY VALVE
Lever Operated

BUTTERFLY VALVE
Gear Operated

DIAPHRAGM VALVE
Rising Handwheel

DIAPHRAGM VALVE
Rising Handwheel ISO PP

BALL CHECK VALVE

SWING CHECK VALVE
Wafer Type

SAMPLING VALVE
Sandwich Type

SAMPLING VALVE
Flanged Type

SIGHT GLASS
Flanged End

STRAINER
'T' / Basket Type

FOOT VALVE
Flanged End

VALVE MOC OPTIONS :
PP / ISOTACTIC PP / PPH / PVDF / ETFE (TEFZEL)
UPVC / CPVC
SIZE RANGE : 1/2" To 24"

LINED VALVES

BALL VALVE
Lever Operated

BALL VALVE
Gear Operated

ANTISTATIC PFA LINED BALL VALVE
Lever Operated

BALL VALUE
Fugitive Emission

BUTTERFLY VALVE (LUG)
Lever Operated

BUTTERFLY VALVE (LUG)
Gear Operated

BUTTERFLY VALVE (WAFER)
Lever Operated

BUTTERFLY VALVE (WAFER)
Gear Operated

PLUG VALVE
Lever Operated

PLUG VALVE
Gear Operated

SLEEVED PLUG VALVE
Lever Operated

DIAPHRAGM VALVE

BALL CHECK VALVE

SWING CHECK VALVE

LINED GLOBE VALVE
Straight Type

LINED GLOBE VALVE
"Y" Type

LINED SAMPLING VALVE
Flanged Type

LINED SAMPLING VALVE
Sandwich Type with Shot Glass Bottle

LINED 'Y' TYPE STRAINER

LINING MATERIALS OPTIONS :
PFA / FEP / PVDF / ETFE / PPH / ANTI-STATIC PFA.
SIZE RANGE : 1/2" To 32"

THERMOPLASTIC ACTUATED VALVES

BALL VALVE
Pneumatically Actuated

BALL VALVE
Electrically Actuated

BALL VALVE TRUNNION TYPE
Pneumatically Actuated

CPVC BALL VALVE
Pneumatically Actuated

PPH BUTTERFLY VALVE
Pneumatically Actuated

PPH BUTTERFLY VALVE
Electrically Actuated

DIAPHRAGM VALVE
Pneumatically Actuated

DIAPHRAGM VALVE
Electrically Actuated

LINED ACTUATED VALVES

LINED BALL VALVE
Pneumatically Actuated

LINED BALL VALVE
Pneumatically Actuated

LINED BALL VALVE
Electrically Actuated

LINED BUTTERFLY VALVE
Pneumatically Actuated

LINED BUTTERFLY VALVE
Pneumatically Actuated

LINED PLUG VALVE
Pneumatically Actuated

LINED DIAPHRAGM VALVE
Pneumatically Actuated

LINED GLOBE CONTROL VALVE

SIZE RANGE : 1/2" To 32"

PLASTIC PIPES & FITTINGS

PIPE
Plain Ends

CONCENTRIC REDUCER
Butt Weld Ends

COUPLING
Socket Weld Ends

ELBOW 90°
Socket Weld Ends

ELBOW 90°
Butt Weld Ends

ELBOW 45°
Socket Weld Ends

STUB END
Butt Weld Ends - Long Neck

STUB END
Butt Weld Ends - Short Neck

STUB END
Socket Weld

FLANGE
Slip On & Pipe Bore

EQUAL TEE
Socket Weld Ends

EQUAL TEE
Butt Weld Ends

MOC OPTIONS : PP, ISO.PP, PVDF, PPH
SIZE RANGE : 1/2" To 16"

LINED PIPES & FITTINGS

PIPE SPOOL

ELBOW 90°

ELBOW 45°

EQUAL TEE

UNEQUAL TEE

INSTRUMENT TEE

CONCENTRIC REDUCER

ECCENTRIC REDUCER

REDUCING FLANGE

LINED SIGHT GLASS

Double Window

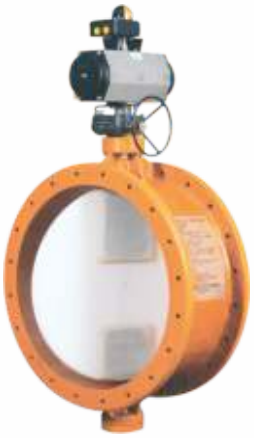
EQUAL CROSS

LINING MATERIALS OPTIONS :

PFA / FEP / PVDF / ETFE / PPH / ANTI - STATIC PFA.

SIZE RANGE : 1/2" To 24"

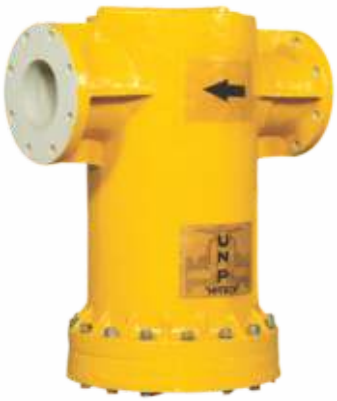
SPECIALITY PRODUCTS



DAMPER

Gear, Pneumatically & Electrically Actuated

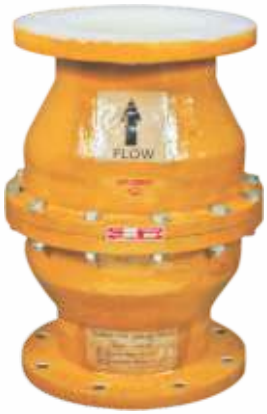
SIZE RANGE : 2" To 120"



STRAINER

'T'/ Basket Type Large Size

SIZE RANGE : 1" To 16"



CHECK VALVE

Float Type Vertical Installation - Large Size

SIZE RANGE : 2" To 16"

CHECK VALVE

Float Type Horizontal Installation - Large Size

SIZE RANGE : 2" To 16"

CAUSTIC & BRINE INLET DISTRIBUTION HEADERS

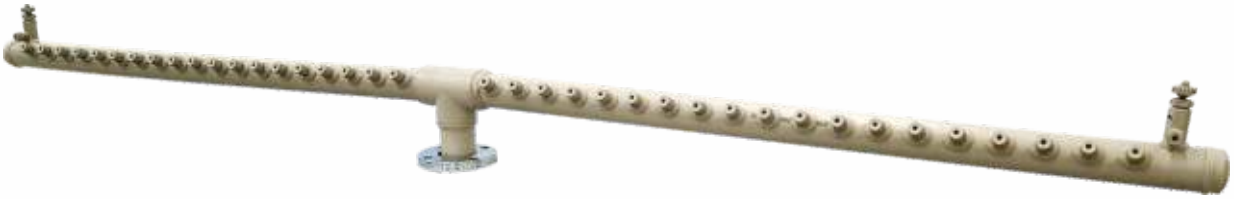
Caustic & Brine distribution headers are a vital component of chlor-alkali plant, manufacturing caustic soda with membrane cell technology.

These headers are installed in combination of left and right or Tee type on electrolyser of chlor-alkali plant. Different electrolysers have requirements of various numbers of nozzles on header pipes depending on the capacity of electrolysers.

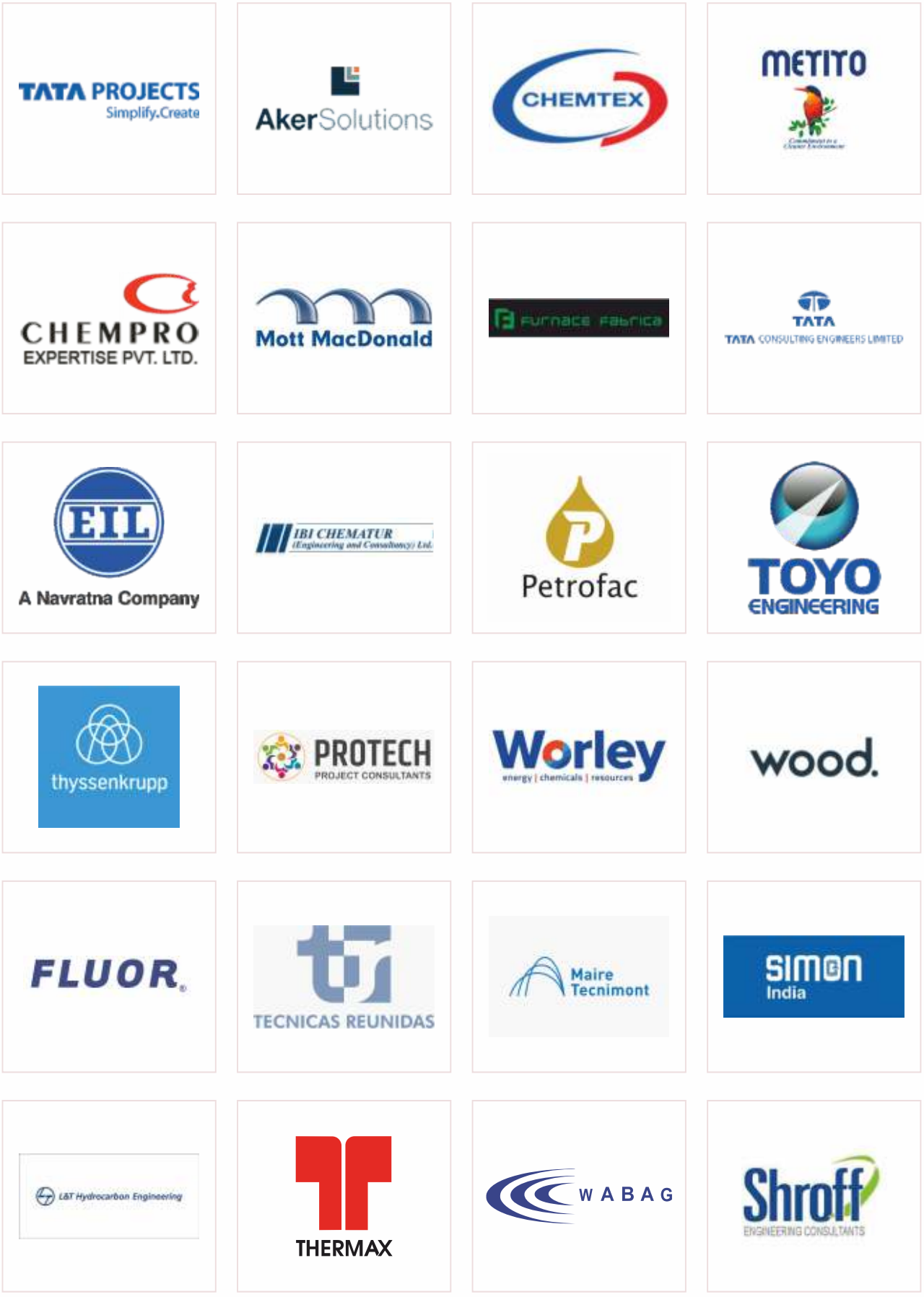
Entire ranges of 14 nos., 17 nos., 21 nos., 34 nos., 46 nos. & 58 nos. are manufactured by us.

These pipes are subjected to elevated temperatures upto 110°C, and are manufactured from special grade Isotactic PP & PPH, the most suitable material of construction for such application.

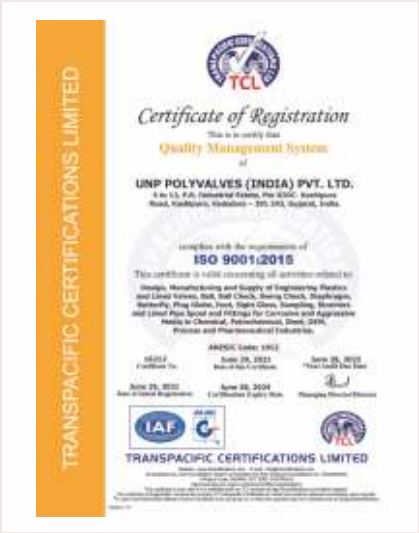
The distribution headers are in operation in the leading chlor-alkali plants in India & abroad for past 20 years.

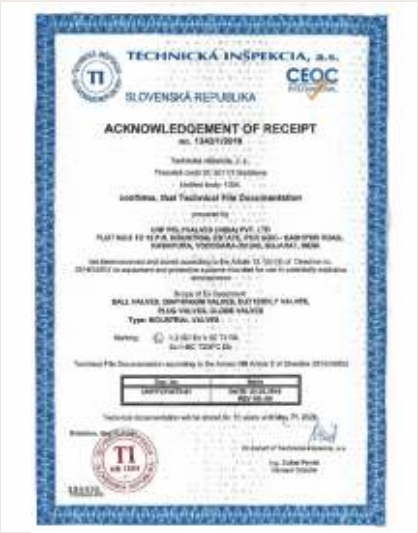


LIST OF CONSULTANT



CERTIFICATION





APPROVED
ISO 15848-1
FUGITIVE EMISSION CERTIFICATION
PFA LINED SIDE SPLIT
FULL PORT BALL VALVES
Size Range : 1/2" to 8"

APPROVED
ISO 15848-1
FUGITIVE EMISSION CERTIFICATION
PFA LINED PLUG VALVES
Size Range : 1/2" to 8"

APPROVED
ISO 15848-1
FUGITIVE EMISSION CERTIFICATION
PFA LINED BUTTERFLY VALVE
Size Range : 2" to 24"

APPROVED
IEC 61508:2010 PARTS 1-7
SIL 3 CAPABLE
Lined Ball Valve
Lined Butterfly Valve
Lined Plug Valve

APPROVED
DIN EN 14432:2014
PFA LINED BUTTERFLY VALVES
Size Range : 2" to 8"

APPROVED
DIN EN 14432:2014
PFA LINED SIDE SPLIT
DESIGN BALL VALVES
Size Range : 1" to 4"

UNPPolyvalves

Valve Solutions For Corrosive Applications

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USA

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ISO 9001:2015 | CE 1128

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in house

- UNP Polyvalves reserves the right, without notice to alter improve the designs, specifications,dimensions of the products described herein.
- UNP Polyvalves does not assume any responsibility for the data given in this brochure. It is anecessary for the customers to carry out necessary tests before selecting the MOC for their applications.