Tecnicon
Engineering Pvt. Ltd.

Excellence in Engineering

CERTIFIED ISO 9001:2015 COMPANY

www.tecniconengg.com

ABOUT US

- **Tecnicon Engineering Pvt. Ltd.** is a trusted name in the design, fabrication, and turnkey execution of high-quality chemical process equipment.
- We operate with a fully equipped in-house infrastructure, enabling precision machining, welding, assembly, surface treatment, and testing - all under one roof.
- An ISO 9001:2015 certified company, we adhere to stringent quality procedures including material traceability, chemical and mechanical testing, stress relieving, radiography, ultrasonic testing, dye penetrant testing, and more.
- We follow strict compliance with relevant industry codes and international standards such as ASME, TEMA, and others.
- We are backed by a team of highly skilled and experienced engineers dedicated to excellence at every stage of the project.
- With a strong focus on quality, cost-efficiency, and timely delivery, we aim to build lasting partnerships that contribute to our client's long-term success.

MR. KISHAN PATEL | FOUNDER & PROMOTER

- **Mr. Kishan Patel**, founder of Tecnicon Engineering Pvt. Ltd. (TEPL), brings over 14 years of expertise in engineering design and fabrication.
- His hands-on leadership and deep industry knowledge have shaped TEPL's reputation for quality and reliability.
- Driven by innovation and integrity, his vision continues to lead the company's growth.

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MISSION

Our mission is to design and manufacture high-quality chemical process equipment, delivering customized, efficient, and sustainable solutions that serve the diverse needs of industries.

VISION

Our vision is to be a global leader in sustainable, high-performance chemical process equipment, known for innovation, safety, and reliable partnerships.

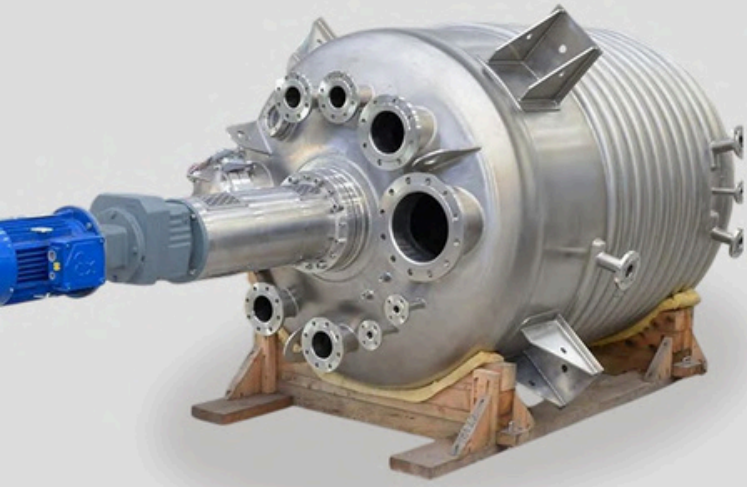
VALUE

We ensure customer satisfaction through precise, reliable solutions delivered on time, backed by a strong commitment to quality, efficiency, and continuous improvement.

INDUSTRIES WE CATER

- CHEMICAL
- API & INTERMEDIATE
- SPECIALTY CHEMICALS
- AGRO CHEMICAL
- FERTILIZER & PESTICIDES
- DYES & PIGMENTS
- OIL & GAS REFINERY
- FOOD PROCESS

REACTOR



TEPL's process reactors support batch, continuous, and fed-batch operations—offering high productivity, efficient input-output handling, and minimal downtime across diverse industrial applications.

TECHNICAL DATA

- **Type:** Jacketed Reactor / Limpet Coil Reactor / Agitated Reactor / Pressure Reactor.
- **Capacity Range:** 50 Liters to 50,000 Liters (customizable).
- **Design Pressure:** Full Vacuum to 50 bar (g).
- **Design Temperature:** -20°C to +300°C.
- **Agitation System:** Anchor, Paddle, Turbine, Helical, or Customized Agitators.
- **Drive Type:** Mechanical Seal or Stuffing Box.
- **Heating / Cooling Options:** Steam, Hot Oil, Water, or Electrical Heating.
- **Testing:** Hydrotest, Radiography, Ultrasonic Testing, DPT, and Hardness Testing.

MATERIAL OF CONSTRUCTION

- **Shell, Jacket & Limpet:**
  - Stainless Steel: SS304 , SS316 , SS316L,
  - Duplex / Super Duplex Stainless Steel,
  - Hastelloy C22 / C276, Inconel,
  - MS (Mild Steel) / CS (Carbon Steel).
- **Agitator & Shaft:** SS304 / SS316 / Duplex Steel / Alloy Materials.
- **Seals & Gaskets:** PTFE / CNAF / Metallic Gaskets.
- **Internal Finish:** Mirror Finish / Matt Finish / Pickling & Passivation.

KEY FEATURES

- Highly efficient heat transfer through optimized jacket/coiling.
- Agitation systems designed for varying viscosities and reaction needs.
- Corrosion-resistant materials for enhanced durability.
- Compliance with ASME, GMP, and other relevant standards.
- Easy maintenance with manholes, nozzles, and access ports.

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SHELL & TUBE HEAT EXCHANGER

TEPL designs and manufactures high-performance heat exchangers to meet ASME and TEMA standards, delivering precise, safe, and efficient solutions tailored to diverse process and metallurgical needs.

TECHNICAL DATA

- **Type:** Fixed Tube Sheet / Floating Head / U-Tube Bundle.
- **Heat Transfer Area:** 1 m^2 to 500 m^2 (customized as per requirement).
- **Design Pressure:** Up to 100 bar (g).
- **Design Temperature:** -20°C to +400°C.
- **Tube Pitch:** Square / Triangular / Custom arrangement.
- **Design Standards:** TEMA / ASME / API 660 / Customized standards.

MATERIAL OF CONSTRUCTION

- **Shell:** SS304 / SS316 / SS316L / Duplex / Super Duplex / Hastelloy /Inconel / MS (Mild Steel) / CS (Carbon Steel).
- **Tubes:** SS304 / SS316 / SS316L / Duplex / Super Duplex / Copper / Cu-Ni / Titanium / Hastelloy / Inconel / MS / CS.
- **Tube Sheets:** MS / CS / SS/Duplex / Cladded or Solid.
- **Baffles & Supports:** MS / CS / SS / Duplex.
- **Gaskets & Seals:** CNAF / PTFE / Metallic.

KEY FEATURES

- High thermal efficiency and optimized heat transfer design.
- Suitable for handling high-pressure and corrosive fluids.
- Easily cleanable designs (removable tube bundle options available).
- Compact construction for space-saving installations.
- Energy-efficient operation with robust mechanical design.

DISTILLATION COLUMN

TEPL designs high-performance process columns for efficient separation, recovery, and emission control, meeting stringent industry and environmental standards to optimize productivity, compliance, and sustainability.

TECHNICAL DATA

- **Type:** Continuous or Batch Distillation.
- **Column Diameter:** 100 mm to 2000 mm (customizable).
- **Column Height:** Up to 15 meters or as per process requirement.
- **Design Pressure:** From full vacuum to 25 bar(g).
- **Design Temperature:** -20°C to +400°C.
- **Internal Components:** Trays, Structured Packing, Random Packing.
- **Associated Equipment:** Reboilers, Condensers.
- **Standards Followed:** ASME, TEMA, (as per client requirement).

MATERIAL OF CONSTRUCTION

- **Shell, Heads, Internals:**
  - Stainless Steel (SS304, SS316, SS316L),
  - MS (Mild Steel) / CS (Carbon Steel).
  - Duplex / Super Duplex Stainless Steel,
  - Special Alloys: Hastelloy, Inconel.
- **Gaskets and Sealing:** PTFE, CNAF, Metallic Gaskets.

KEY FEATURES

- High separation efficiency through optimized design and internals.
- Designed for low-pressure drop and high mass transfer efficiency.
- Robust mechanical construction ensuring long service life.
- Thermal insulation and cladding options for energy conservation.
- Full compliance with ASME, TEMA, and other international standards.
- Easy maintenance and accessibility through strategically placed manways and nozzles.

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PRESSURE VESSEL

TEPL's precision-engineered pressure vessels safely contain fluids under varying pressures, ensuring reliable performance, safety, and durability across demanding chemical and petrochemical industry applications.

TECHNICAL DATA

- **Design Code:** ASME Section VIII Div. 1 or client-specific standards.
- **Design Pressure:** Full vacuum to 100 bar (g).
- **Design Temperature:** -50°C to +400°C.
- **Orientation:** Vertical / Horizontal.
- **Head Types:** Tori spherical, Elliptical, Hemispherical.
- **Nozzles & Manways:** As per process requirement.

MATERIAL OF CONSTRUCTION

- **Shell, Heads, Internals:**
  - Stainless Steel (SS304, SS316, SS316L),
  - MS (Mild Steel) / CS (Carbon Steel).
  - Duplex / Super Duplex Stainless Steel,
  - Special Alloys: Hastelloy, Inconel.
- **Gaskets and Sealing:** PTFE, CNAF, Metallic Gaskets.

KEY FEATURES

- Superior build quality with enhanced durability and corrosion resistance.
- Optimized designs for reduced weight, cost efficiency, and higher mechanical strength.
- Stringent quality control with in-house 100% NDT and third-party certifications.
- Compliance with ASME, TEMA, and international standards.
- Faster project turnaround with streamlined manufacturing processes.

PROCESS MODULAR SKID

TEPL's modular process skids are self-contained systems offering fast installation, cost-efficiency, and quality control, streamlining operations and reducing on-site construction time effectively.

TECHNICAL DATA

- **Type:** Skid-Mounted Process Systems (Batch / Continuous).
- **Design Pressure:** Up to 25 bar (g).
- **Design Temperature:** -40°C to +300°C.
- **Flow Range:** As per process requirement.
- **Piping Standards:** ASME B31.3 / B31.1.
- **Electrical Classification:** Safe Area / Hazardous Area.
- **Instrumentation:** Fully integrated with pressure, temperature, flow, and level measurement systems.
- **Control Options:** Manual / PLC-Based Automation with SCADA Interface.

MATERIAL OF CONSTRUCTION

- **Piping and Vessels:**
  - SS304 / SS316 / SS316L,
  - MS (Mild Steel) / CS (Carbon Steel).
  - Duplex and Super Duplex Stainless Steel,
  - Hastelloy, Inconel.
- **Structural Frame:** Carbon Steel / Stainless Steel / Powder-Coated / Galvanized Finish.
- **Valves and Fittings:** SS / CS / Alloy Grades as per process need.
- **Instruments and Controls:** Industry-standard brands (Yokogawa, Siemens, ABB, Emerson, etc.).

KEY FEATURES

- Compact, fully assembled, and factory-tested modular design.
- Reduced on-site installation time and costs.
- Designed for plug-and-play integration at the site.
- Tailor-made configuration as per process needs.
- High safety standards and compliance with global norms.
- Easy to transport, relocate, and expand.
- Options for complete automation and remote monitoring.

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STORAGE TANK

TEPL designs and fabricates storage tanks for safe containment of liquids and gases, ensuring reliability, structural integrity, and compliance across industrial, commercial, and specialized applications.

TECHNICAL DATA

- **Type:** Vertical / Horizontal / Jacketed / Limpet Coil / Insulated.
- **Capacity Range:** 0.5 KL to 100 KL (customizable).
- **Design Pressure:** Atmospheric to 10 bar (g).
- **Design Temperature:** -20°C to +200°C.
- **Tank Heads:** Flat, Conical, Dished Ends, Tori spherical Heads.

MATERIAL OF CONSTRUCTION

- **Main Body:**
  - Stainless Steel: SS304, SS316, SS316L,
  - MS (Mild Steel) / CS (Carbon Steel).
- **Insulation:** Rock wool / Glass wool / Mineral wool.
- **Surface Finish:** Mirror Finish / Matt Finish / Pickled & Passivated.

KEY FEATURES

- Customized design to suit capacity, process, and site requirements.
- Available with heating coils, jackets, and insulation.
- High durability and corrosion resistance for long service life.
- Easy installation, maintenance access, and operational safety.
- Designed as per national and international standards.
- Optional integration with level indicators.

RESIN PLANT

TEPL's resin plants ensure efficient batch production with precise control, handling alkyd, epoxy, polyester, acrylic, phenolic, and more.

TECHNICAL DATA

- **Type:** Complete Resin Manufacturing Unit (Reactor, Condenser, Column, Receiver, Pumps, and Piping).
- **Capacity:** 100 to 50,000 Liters (customizable)
- **Pressure:** Vacuum to 10 bar (g) | Temperature: Up to 300°C
- **Agitation:** Anchor, Paddle, Turbine, or Custom Impellers
- **Drive:** Mechanical Seal or Stuffing Box with Inline Gearbox
- **Heating/Cooling:** Thermic Fluid, Steam, Water, Hot Oil, or Electric
- **Process:** Batch / Semi-Batch Resin Polymerization
- **Testing:** Hydrotest, RT, DPT, UT, Hardness Testing

MATERIAL OF CONSTRUCTION

- **Reactor, Jacket & Limpet:**
  - Stainless Steel (SS304 / SS316 / SS316L),
  - Duplex / Super Duplex Stainless Steel,
  - Hastelloy C22 / C276, Inconel,
  - MS (Mild Steel) / CS (Carbon Steel).
- **Agitator & Shaft:** SS316 / Duplex Steel / Alloy Material.
- **Condenser, Column & Receiver:** SS304 / SS316 / Carbon Steel / MS.
- **Seals & Gaskets:** PTFE / Graphite / Metallic Gaskets.
- **Valves & Accessories:** SS304 / SS316 / MS Powder Coated.
- **Internal Finish:** Matt Finish / Mirror Finish / Acid Pickling & Passivation.

KEY FEATURES

- Robust construction ensures reliable performance in resin production.
- Accurate control of temperature and vacuum for efficient polymerization.
- Heavy-duty agitation system handles high-viscosity resins effectively.
- Integrated condenser, receiver, and column for efficient recovery.
- Materials selected for optimal chemical compatibility.
- Compliant with ASME, GMP, and other global standards.
- Optional automation for precise monitoring and process control.

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SODIUM SILICATE REACTOR

TEPL's Sodium Silicate Reactors ensure efficient, consistent production under high-temperature and pressure, fusing silica sand with caustic soda or sodium carbonate. Built for durability in harsh conditions.

TECHNICAL DATA

- **Type:** Jacketed / Limpet Coil Type Reactor.
- **Capacity Range:** 100 Liters to 50000 Liters (customizable).
- **Design Pressure:** Up to 10 bar (g).
- **Design Temperature:** Up to 300°C.
- **Agitation System:** Heavy-duty Anchor or Helical type agitator.
- **Drive Type:** Stuffing Box or Mechanical Seal with Inline Helical Gearbox.
- **Heating / Cooling Options:** Primarily Steam or Thermic Fluid.
- **Process Type:** Batch or Semi-Batch (Fusion of silica and alkali under pressure).
- **Testing:** Hydrotest, Radiography, Ultrasonic Testing, DPT, Hardness Testing.

MATERIAL OF CONSTRUCTION

- **Shell, Jacket & Limpet:**
  - SA 516 GR 70 & Mild Steel (IS 2062),
  - SS304/SS316L for high-purity production.
- **Agitator & Shaft:** SS304 / SS316 or MS.
- **Seals & Gaskets:** Graphite / Asbestos-Free High-Temperature Gaskets.
- **Insulation:** Rock Wool / Ceramic Wool with Aluminium or SS Cladding.
- **Nozzles & Accessories:** MS/SS as per chemical compatibility.

KEY FEATURES

- Specially engineered for high-temperature, high-pressure sodium silicate fusion
- High-efficiency heat transfer through steam or thermic fluid jackets/coils
- Heavy-duty agitation system suited for slurry-like reaction mass
- Built-in safety features including rupture disc, pressure relief valve, and vents
- Fully compliant with IS, ASME, and other industry standards
- Customizable modules with options for automation and energy-efficient operation

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