ETP Plant

Effluent treatment plants for industrial wastewater

Overview

An effluent treatment plant (ETP) cleans industrial wastewater before it is discharged or reused. It removes solids, oils, colour, metals and organic load so that the treated water meets the norms of the pollution control board.

Every industry has a different effluent, so each ETP is designed from the effluent analysis. Arukal designs and supplies ETPs with equalisation, chemical treatment, clarification, biological treatment and filtration, with dosing and sludge handling.

5 – 1,000+ KLD	Physico-chemical + biological	To discharge norms	With UF / RO
Capacity	Process	Output	Reuse

Key features

Designed to your effluent Process selected from the effluent analysis and pilot data.	**Complete scope** Tanks, pumps, dosing, blowers, filters and sludge handling.
Meets norms Designed to the discharge standards that apply to you.	**Automation** PLC-based control and monitoring on request.
Reuse ready Add UF and RO to recover water and cut fresh water cost.	**Support** Commissioning, operator training and AMC.

Applications

Textile and dyeing • Food and beverage • Pharma and chemical • Paper and pulp • Distilleries and breweries • Metal finishing

How it works

1. Equalise	2. Chemical treatment	3. Biological treatment	4. Polish and dispose
An equalisation tank evens out flow and strength so the plant sees a steady load.	Coagulant and flocculant bring suspended and colloidal matter together; the clarifier settles it.	Aeration lets bacteria digest dissolved organic matter, measured as COD and BOD.	Filtration, and if needed UF or RO, polish the water. Sludge is dewatered and disposed of.

Care and handling

Operate. Feed equalised flow at a steady rate. Keep pH and dosing within the set range.
Dose. Check chemical dosing daily with jar tests when the effluent changes.
Sludge. Remove and dewater sludge on schedule so the clarifier works well.

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Technical specifications

Typical values. Values are typical for the product family and given for guidance. Exact figures depend on the make and model supplied; ask us for the data sheet of the specific model.

Plant (typical)

Capacity	5 – 1,000+ KLD (kilolitres per day)
Process	Equalisation, chemical treatment, clarifier, biological (ASP / MBBR / SBR), tertiary filtration
Inlet COD	up to 5,000 mg/L (higher with anaerobic stage)
Treated water	BOD < 30, COD < 250, TSS < 100 mg/L (typical, to local norms)
Sludge handling	Filter press or sludge drying beds

Construction

Tanks	RCC, MS epoxy-coated or FRP
Aeration	Blowers with fine-bubble diffusers
Dosing	Chemical dosing system with tanks and pumps
Controls	Manual or PLC with sensors

Typical plant sizes

Size	Capacity	Typical industry	Notes
Small	5 – 25 KLD	Small food, lab, workshop	Skid or packaged
Medium	25 – 100 KLD	Textile, dairy, pharma	Tank-based, MBBR
Large	100 – 500 KLD	Chemical, paper, distillery	Multi-stage, with tertiary
Extra large	500 – 1,000+ KLD	Large industrial estates	Custom design

Capacity in kilolitres per day (1 KLD = 1 m³/day). Every ETP is designed to the effluent analysis.

To receive a recommendation, send us:

- Industry type and process that creates the effluent
- Flow (KLD), peak flow and operating hours
- Effluent analysis (pH, COD, BOD, TSS, oil, colour, metals, TDS)
- Discharge norms to meet, and whether you want to reuse the water