

Consortium Epuramat
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EQUIPMENT CATALOGUE

AES Aeroseparator and UA Aeroseparation Systems

Technologies for water separation and preliminary treatment of water and wastewater

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Water Treatment Technologies

The international technology consortium Epuramat develops energy-efficient technologies and equipment for the treatment of drinking water and wastewater.

The equipment can be used at both small facilities and large wastewater treatment plants. Containerised and modular versions are available; automation is configured to meet each project's requirements.

up to 99%	≥ 15 µm	1–40 m³/h
stated particle separation efficiency	particle size for separation	capacity of models in the AES table

Aeroseparation Applications

Natural Water

Water from wells and surface sources.

Industry

Industrial wastewater, including effluent from food-processing and manufacturing facilities.

Stormwater and Domestic Wastewater

Preliminary treatment of domestic wastewater and wastewater with a similar composition.

Oil-Containing Water

Separation of oil-water mixtures and removal of oil from the water phase.

Water Reuse

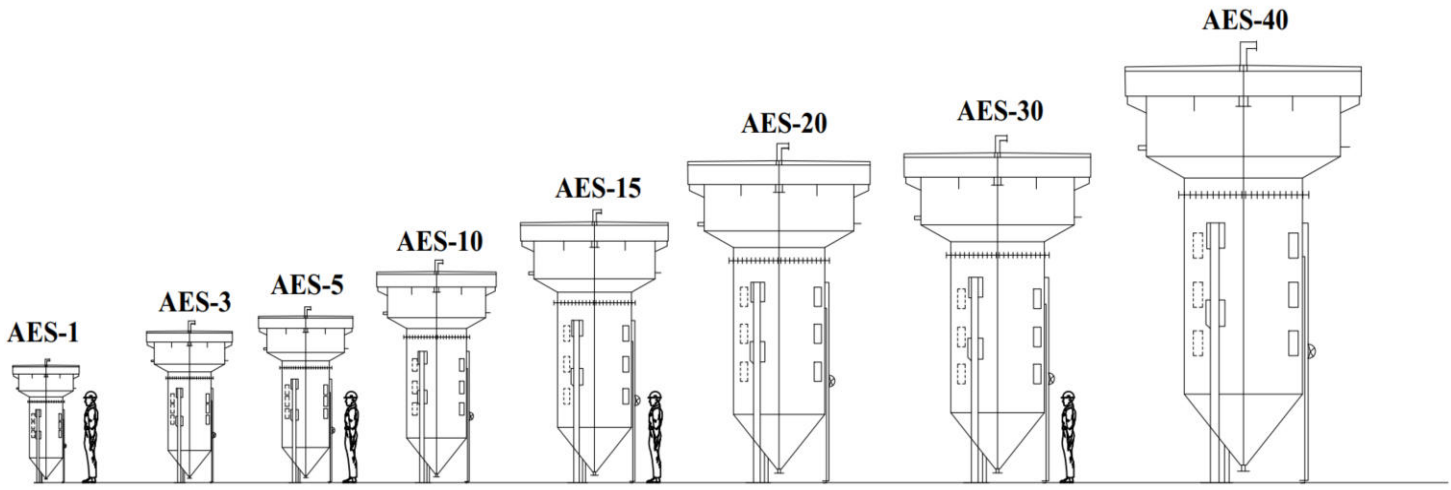
Preliminary treatment of industrial wastewater before subsequent treatment stages.

Biogas Plants

Removal of biosludge from wastewater.

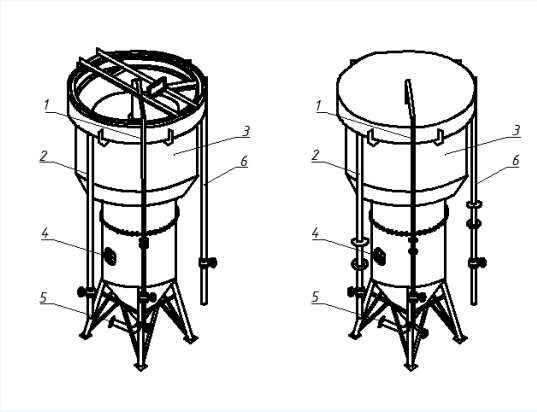
Designed for preliminary treatment of water from various sources and separation of the liquid and solid phases of contaminants.

The aeroseparator combines three treatment technologies in a single unit: aeration, flotation and separation. The equipment is available in different configurations (open or enclosed), dimensions, weight, power consumption and capacity.



AES model range: from compact solutions to models with a capacity of 40 m³/h.

General View of the Design



Main Components

1 — Raw water inlet pipe
2 — Treated water outlet pipe
3 — Aeration vessel
4 — Maintenance hatch
5 — Sludge outlet and post-treatment equipment connection
6 — Flotation foam outlet

Model designation: “AES–X”, where X is the capacity in m³/h.

Key Specifications and Dimensions

Catalogue specifications for AES series models. Custom manufacturing is available for non-standard requirements, subject to a separate technical specification.

Model	Upper D, mm	Lower D, mm	Upper H, mm	Lower H, mm	Capacity m³/h	Specific power consumption, W/m³
AES-1	1000	600	600	1600	1,0	0,5
AES-3	1600	1000	800	2200	3,0	0,25
AES-5	2000	1200	800	2500	5,0	0,2
AES-10	2500	1500	1000	3200	10,0	0,18
AES-15	3000	1600	1200	4000	15,0	0,17
AES-20	3200	1800	1400	5000	20,0	0,16
AES-30	3300	2000	1500	5000	30,0	0,14
AES-40	3600	2200	1800	6500	40,0	0,12

How to Read the Model Designation

The number in the “AES–X” designation indicates the model capacity in m³/h. The actual configuration, materials and specifications may be clarified in the customer's technical specification.

Please Note

The original catalogue also provides general equipment parameters and treatment performance figures. These depend on the raw water composition and operating conditions; operating parameters for the specific facility must be agreed before design.

Operating Conditions and Performance

Summary values from the original catalogue. The parameters of a specific unit should be confirmed when agreeing on the technical specification.

Parameter	Catalogue value
Raw water flow rate at 18±2 °C	1–212 m³/h*
Operating pressure	0.05–0.6 MPa
Water operating temperature	2 to 45 °C
Specific electrical energy consumption	0.46–0.09 kWh/m³
Rated supply voltage	380 V
Rated supply frequency	50 Hz
Shipping weight	no more than 15 t

Raw Water Parameters

Raw water parameter values must not exceed the ranges specified in the catalogue:

Parameter	Range
Suspended solids	100–550 mg/dm³
pH	5–11
Total BOD	200–400 mg/dm³
COD	400–800 mg/dm³
Total nitrogen	15–60 mg/dm³
Total phosphorus	3–12 mg/dm³
Petroleum products	up to 380 mg/dm³

*The original catalogue states that air separators can be manufactured according to a separate technical specification with modified characteristics.

Three Processes in One Unit

The aeroseparator combines aeration, flotation and separation to remove contaminants from the water flow.



01 Water Feed

Raw wastewater, pre-mixed with a reagent, enters the vertical tank through the inlet nozzle.

02 Separation

At the separation unit, most heavy suspended solids settle in the cone and are discharged into a separate tank.

03 Aeration and Flotation

A water-air mixture is fed into the upper section. Light contaminants gain additional buoyancy and rise to the surface.

04 Flotation Foam Removal

A geared scraper mechanism collects floating material and removes it into a separate tank.

Expected Reduction in Contaminant Concentration

Parameter	Concentration reduction
Suspended solids	80–90%
Total BOD	40–50%
COD	30–40%
Total nitrogen	10–15%
Total phosphorus	15–25%
Petroleum products	80–90%

Actual results depend on the raw water composition and operating conditions.

Configuration to Suit Your Needs

The aeroseparator is installed on a prepared foundation or base. After alignment, the supports are secured with anchor bolts; the foundation bolts are finally tightened after the concrete grout has cured.

Housing Materials

Stainless Steel For a corrosion-resistant housing design.	**Polymers** Polypropylene (PP) or polyethylene (PE).
Carbon Steel With an anti-corrosion coating.	**Galvanised Steel** An available housing option, subject to agreement.

Automation and Maintenance

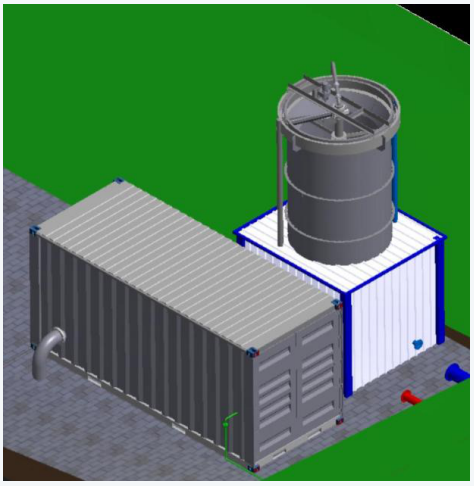
- Touchscreen control panels with controllers and internet or satellite connectivity are available.
- The housing has no continuous partitions or compartments, except for pipelines and the aeration grid.
- When installed on a metal floor, the unit must be secured; a frame tie is provided to prevent deformation of the support legs.
- The standard housing service life is up to 5 years; it may be extended depending on the material.
- The warranty period is at least one year from commissioning or, subject to agreement, from the delivery date.

Scope of Supply

Item	Quantity
AES–X aeroseparator	1 unit
Installation and operation manual	1 unit
Product data sheet	1 unit
Spare parts and accessories	1 set, subject to agreement
Commissioning consumables	1 set, subject to agreement
Packing list	1 copy

UA Aeroseparation Systems

The AES aeroseparator can be used as a standalone unit at existing wastewater treatment plants or water treatment stations, or integrated into factory-assembled UA–X systems, where X is the capacity, m³/day.



Containerised Layout



Installation in a Modular Building

Industries Served

- Food industry: dairy and meat processing
- Oil refining and oil production
- Metallurgy, cement and pulp and paper industries
- Mining
- Biogas plants and waste processing
- Municipal wastewater treatment plants

Possible System Modules

Separation	Separation / aeroseparation unit
Filtration	Mechanical filters, cartridge or adsorption polishing
Membrane treatment	Ultrafiltration and reverse osmosis
Disinfection	Ultraviolet disinfection
Utility systems	Pumps, reagent tanks, dosing pumps, pipelines and valves
Automation	Level, temperature and pH sensors, flow meters, instrumentation and equipment, process control, system controller control cabinet and protection
Sludge handling	Collection and storage tanks, sludge dewatering equipment

A Solution for Diverse Water Treatment Needs

System configuration and equipment are selected based on the raw water composition and the required treated water quality.

01 Efficiency

Removal of organic and inorganic substances — up to 99%, according to the catalogue.

02 Adaptability

Operation under variations in wastewater volume and composition.

03 Compact Design

Small footprint compared with conventional systems.

04 Reliability

Low-maintenance, highly reliable equipment.

05 Cost Efficiency

Low capital and operating costs.

06 Fast Commissioning

Quick setup and commissioning.

07 Water Quality Adjustment

Ability to adjust effluent concentrations of BOD, nitrogen and phosphorus at the outlet.

08 Enclosed Design

Option for a design that minimises odours and noise.

09 Remote Monitoring

Remote monitoring and automatic operator alerts.

LET'S DISCUSS YOUR PROJECT

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This information is based on the original catalogue. Technical parameters, system configuration and equipment design are subject to confirmation during project approval.