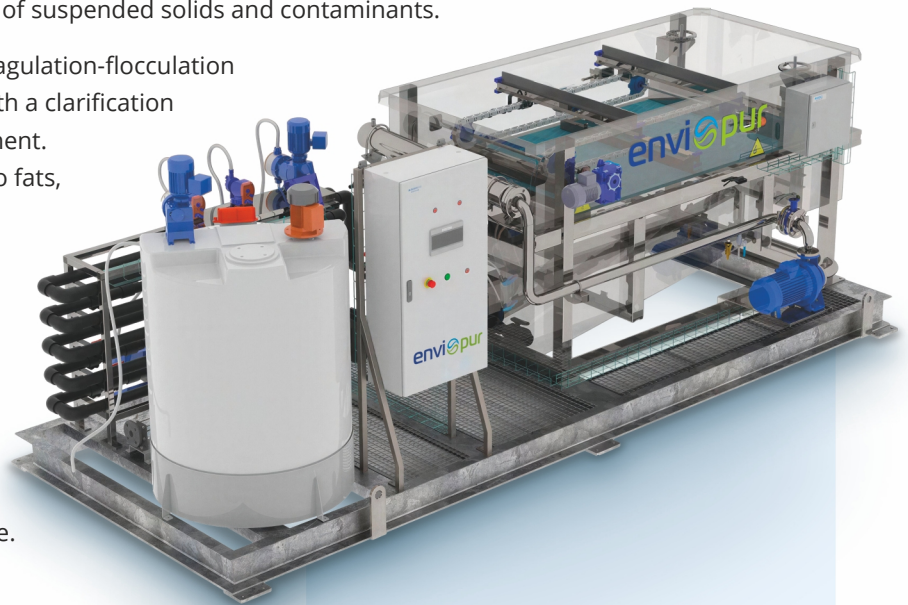




# ENVIDAF Compact Flotation Unit

The ENVIDAF unit is a high-performance flotation separation system, specifically designed to treat industrial wastewater with a very high load of suspended solids and contaminants.

This compact unit incorporates an integrated coagulation-flocculation stage, combining physico-chemical treatment with a clarification process for optimal primary or secondary treatment. The technology utilizes microbubbles to attach to fats, oils, and suspended solids, causing them to float to the surface for efficient mechanical removal.



## ADVANTAGES

- High Separation Efficiency**  
 Utilizes microbubble technology (30–50 microns) to improve adherence to particles and enhance system performance.
- Compact Design**  
 A robust and compact system designed for high-load environments.
- Advanced Sludge Separation**  
 A unique counter-current separator minimizes sludge travel and prevents solids carry-over, producing 3–4 times higher dry solids content than conventional systems.
- Reduced Operating Costs**  
 Higher sludge concentration reduces the need for extensive downstream dewatering or drying.
- Self-Cleaning & Low Maintenance**  
 Includes an automatic pneumatic discharge valve and a shaftless conveyor system to prevent sediment accumulation.
- Customisable**  
 Designed to meet specific customer needs with adaptable configurations and material options.

## APPLICATION

- Meat and poultry processing
- Slaughterhouses
- Fish and seafood processing
- Dairy and cheese production
- Breweries and beverage industry
- Snack and convenience food production (e.g., potato chips)



HIGH EFFICIENCY



COMPACT DESIGN



SMART FEATURES



COST EFFICIENT



LOW MAINTENANCE



ADAPTABLE DESIGN

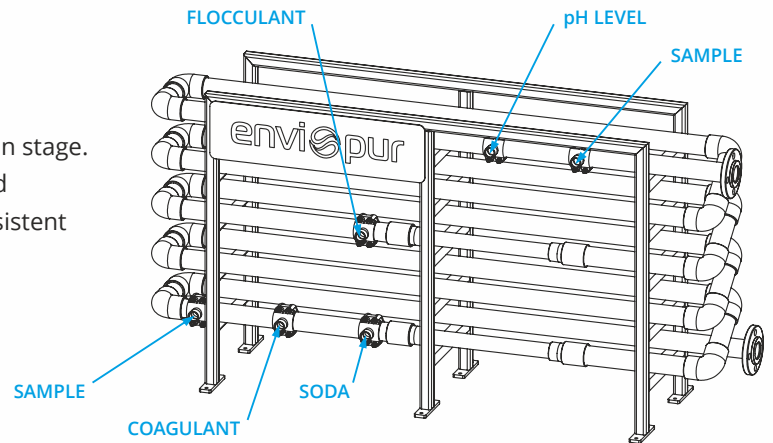
## TREATMENT EFFICIENCY

The DAF (Dissolved Air Flotation) system achieves high separation efficiency, significantly reducing organic load and solids before discharge or further biological treatment.

| Parameter                           | Removal Efficiency |  |
|-------------------------------------|--------------------|--|
| <b>TSS</b> (Total Suspended Solids) | 90–99 %            |  |
| <b>FOG</b> (Fats, Oils & Grease)    | 90–99 %            | Ideal for food & dairy processing      |
| <b>COD / BOD</b> (Organic Load)     | 50–85 %            | Highly dependent on insoluble fraction |
| <b>Phosphorus</b> (Total P)         | 70–90 %            | Enhanced with optimized coagulation    |

## CHEMICAL PRE-TREATMENT

To maximize separation efficiency, the ENVIDAF unit incorporates an integrated coagulation and flocculation stage. This process transforms dissolved and finely dispersed contaminants into buoyant macro-flocs, ensuring consistent effluent quality even with fluctuating influent loads.



## SYSTEM COMPONENTS

### Main Flotation Unit

- **Recirculation Pump** – High-pressure pump for saturating water with air.
- **Skimmer Set** – Mechanical surface scraper for continuous removal of floated sludge.
- **Aeration System** – Specialized system for generating micro-bubbles (dissolved air).
- **Purge Valve** – Automatic valve for periodic removal of settled heavy solids.
- **Level Transmitter** – Sensor for tank level control.
- **Pneumatic Control Panel** – Compact unit for managing air distribution and valves.

### Physico-Chemical Process

- **Flocculation System** – Pipe flocculator for optimal chemical mixing and floc growth.
- **Poly Preparation System** – Automated unit for making down powdered or liquid polymers.
- **Pumps and Dosing Pumps** – Pumps for coagulant, caustic (alkali), polymer and sludge.
- **Measurement Devices** – Inline pH meter and electromagnetic flow meter for process monitoring.

## TECHNICAL SPECIFICATIONS

|                                  | ENVIDAF 1                    | ENVIDAF 15            |
|----------------------------------|------------------------------|-----------------------|
| <b>Flow per unit</b>             | 1–3 m <sup>3</sup> /h        | 15 m <sup>3</sup> /h  |
| <b>Free Flotation Area</b>       | 1.2 m <sup>2</sup>           | 4.2 m <sup>2</sup>    |
| <b>Air (Dry and clean)</b>       | approx. 0–60 NI/min per unit |                       |
| <b>Installed power</b>           | approx. 10–12 kW/unit        |                       |
| <b>Air pressure</b>              | 6 bar                        |                       |
| <b>Material</b>                  | SS304                        |                       |
| <b>Electricity</b>               | 380–400 V / III / 50 Hz      |                       |
| <b>Dimensions L × W × H (mm)</b> | 5 035 × 1 720 × 1 843        | 5 260 × 2 170 × 1 970 |

