Biotech Water Pvt Ltd
WATER & WASTEWATER SOLUTIONS

ADVANCED AERATION SYSTEMS

BIOPURE® High Efficiency Air Diffusers

Fine & Coarse Bubble Aeration • High Oxygen Transfer (SOTE) • Premium EPDM & Silicone Membranes

SYSTEM OVERVIEW & TECHNOLOGY

BIOPURE® Air Diffusers are engineered for maximum standard oxygen transfer efficiency (SOTE), minimal head loss, and long-term durability in severe biological treatment environments.

Featuring precision laser-perforated membranes in high-grade EPDM and Silicone elastomers, BIOPURE® aeration components deliver uniform bubble patterns across varying airflows, significantly reducing operational energy consumption in aeration blowers.

✔ Designed for Municipal STPs, Industrial ETPs, MBBR, SBR, and Aerobic Biological Tanks.

Up to 6%	< 30 mbar	100%
SOTE / M DEPTH	LOW HEAD LOSS	VIRGIN ELASTOMERS

1. DISC FINE BUBBLE DIFFUSERS

High Efficiency Disc Aeration Systems

Constructed with precision laser-perforated EPDM or Silicone membranes to produce micro-bubbles (0.8–2.0 mm). Built-in check valve mechanisms prevent backflow and sludge entry during system shutdowns.

- ✔ **High Oxygen Transfer (SOTE)**
- ✔ **Anti-Clogging Membrane**
- ✔ **Low Head Loss (< 30 mbar)**
- ✔ **UV & Chemical Resistant**

PARAMETER / SPECIFICATION	9" DISC DIFFUSER	13" DISC DIFFUSER
Bubble Size Range	0.8 – 2.0 mm	0.8 – 2.0 mm
Design Air Flow Rate	**4.0 – 5.0 m³/hr**	**5.0 – 8.0 m³/hr**
Working Air Flow Capacity	5.0 – 12.0 m³/hr	5.0 – 20.0 m³/hr
Effective Perforation Area	0.037 m²	0.065 m²
Standard Oxygen Transfer Efficiency (SOTE)	**4.0% per meter depth**	**6.0% per meter depth**
Submersion Water Depth	3.0 – 7.0 meters	3.0 – 7.0 meters
Connection Thread & Material	¾" NPT Male | EPDM / Silicone	¾" NPT Male | EPDM / Silicone

2. TUBULAR FINE BUBBLE DIFFUSERS

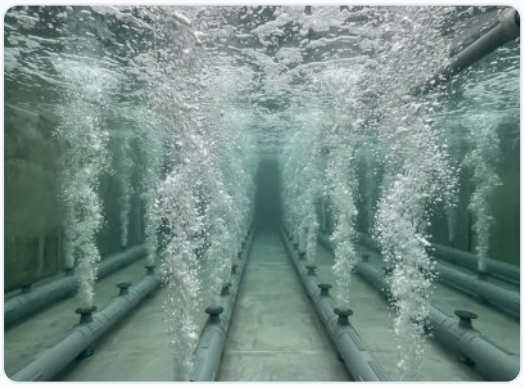
High Area Coverage Tubular Systems

Ideal for long aeration grids, deep tank configurations, and high-capacity biological reactors. Features rigid uPVC internal support tubes, SS304 clamping bands, and premium elastomeric membranes.

- **Maximum Aeration Surface Area**
- **SS304 Clamps Fitted**
- **Robust uPVC Support Core**
- **Uniform Air Distribution**

MODEL CONFIGURATION	65 × 620 MM	65 × 1020 MM	90 × 1020 MM
Air Flow Range	5.0 – 7.5 m^3/hr	8.5 – 11.5 m^3/hr	8.5 – 16.5 m^3/hr
Bubble Size	1.0 – 2.0 mm	1.0 – 2.0 mm	1.0 – 2.0 mm
Working Area	0.5 – 1.0 m^2	0.6 – 1.5 m^2	1.0 – 3.0 m^2
Standard SOTE Efficiency	**16%**	**21%**	**21%**
Hardware / Core	SS304 / uPVC Core	SS304 / uPVC Core	SS304 / uPVC Core

3. COARSE BUBBLE DIFFUSERS



High Turbulence & Mixing Aerators

Designed specifically for high airflow applications demanding intensive mixing and scouring rather than oxygen dissolution. Excellent for equalization tanks, grit chambers, and heavy sludge holding tanks.

- **Clog-Proof Non-Clogging Design**
- **Heavy-Duty EPDM / Silicone**
- **Intensive Tank Liquid Mixing**
- **Zero Maintenance Operation**

PARAMETER / SPECIFICATION	80 MM CONFIGURATION	150 MM CONFIGURATION
Bubble Size Range	4.0 – 5.0 mm	4.0 – 5.0 mm
Air Flow Capacity	**1.0 – 15.0 m^3/hr**	**5.0 – 20.0 m^3/hr**
Discharge Ports Count	10 Ports	8 Ports
Connection Standard	¾" BSP Male Thread	1" BSP Male Thread

KEY OPERATIONAL ADVANTAGES

High OTE Rate
Maximum oxygen dissolution per blower kW input.

Virgin EPDM
Resistant to organic chemical solvents and acids.

Energy Saving
Low pressure drop reduces total power draw.

SS304 Hardware
Corrosion-proof stainless steel securing clamps.

Self-Purging
Elastic memory prevents biological sludge fouling.

TARGET DEPLOYMENTS & APPLICATIONS

- Municipal STPs
- Industrial ETPs
- MBBR Reactors
- SBR Systems
- Activated Sludge (ASP)
- MBR Plants
- Equalization Tanks
- Sludge Holding Tanks
- Aquaculture & Fish Farming

RECOMMENDED OPERATIONAL PARAMETERS

Operating Air Temperature
0°C – 80°C
Standard EPDM rating; higher for Silicone.

Tank Liquid Depth
2.5 – 8.0 Meters
Optimal depth range for peak SOTE performance.

Service Life Span
5 – 8+ Years
Continuous operation in active municipal wastewater.

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