



**KTN**  
**Kunststoff-Technik Neumarkt**  
GmbH

**protecting  
the source of life**

**Components for  
Water- and wastewater treatment**

**newair<sup>®</sup>**  
**Tube diffuser HDPE**

[www.kt-n.com](http://www.kt-n.com)

## Tube diffuser HDPE

### Product properties

- energy-saving
- low head loss
- high air flow
- high oxygen transfer
- break-proof → easy to install
- very good chemical resistance
- abilities of operation: - continuous
- KTW-approval (can be used for drinking water)
- applications: - municipal wastewater
  - industrial wastewater
  - general aeration feedings



### Standard dimensions

Aerator length [mm]	Total length [mm]	Tube diameter [mm]	Aeration area [m <sup>2</sup> ]	Adapter	Total weight [g]
500	580	72	0,11	¾" internal thread	570
750	830	72	0,17	¾" internal thread	760
1000	1080	72	0,23	¾" internal thread	950

### Special dimensions

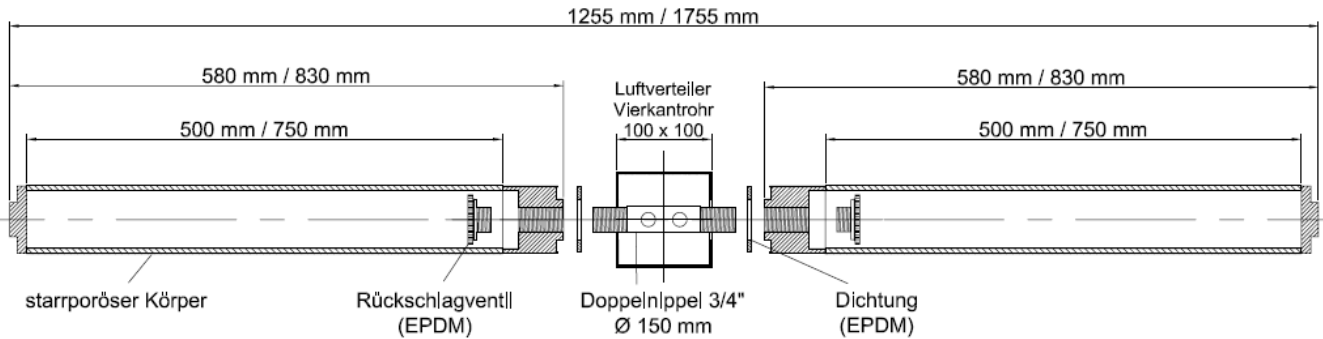
Possible lengths	100 – 1000 mm
Possible adapter forms	½", ¾", 1", 1 ¼" internal thread and on request

### Material

Fixed blown aerator	End cap	Adapter	Gasket	Double nipple
special HDPE	PE	PE	4 mm EPDM	V4A Material: 1.4571

## Tube diffuser HDPE

### Installation drawing



### Material properties

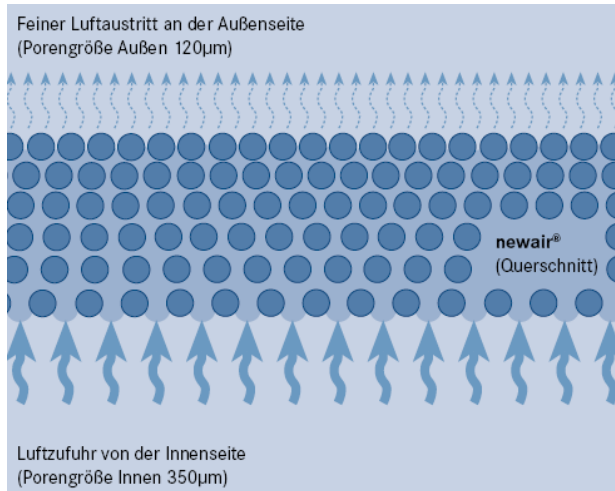
Material	HDPE
Colour	white
Wall thickness	5,2 mm
Density	0,97 g/cm <sup>2</sup>
Chemical resistance	high
Pore size inside	350 µm
Pore size outside	120 µm
Operating temperature	0 bis 80°C

### Air flow

Type	Operation conditions [Nm <sup>3</sup> /h]	Optimum Air flow rate [Nm <sup>3</sup> /h]	Operation mode	Application
HDPE 500	3 - 6	4	continuous	municipal wastewater industrial wastewater
HDPE 750	4,5 - 9	6	continuous	municipal wastewater industrial wastewater
HDPE 1000	6 - 12	8	continuous	municipal wastewater industrial wastewater

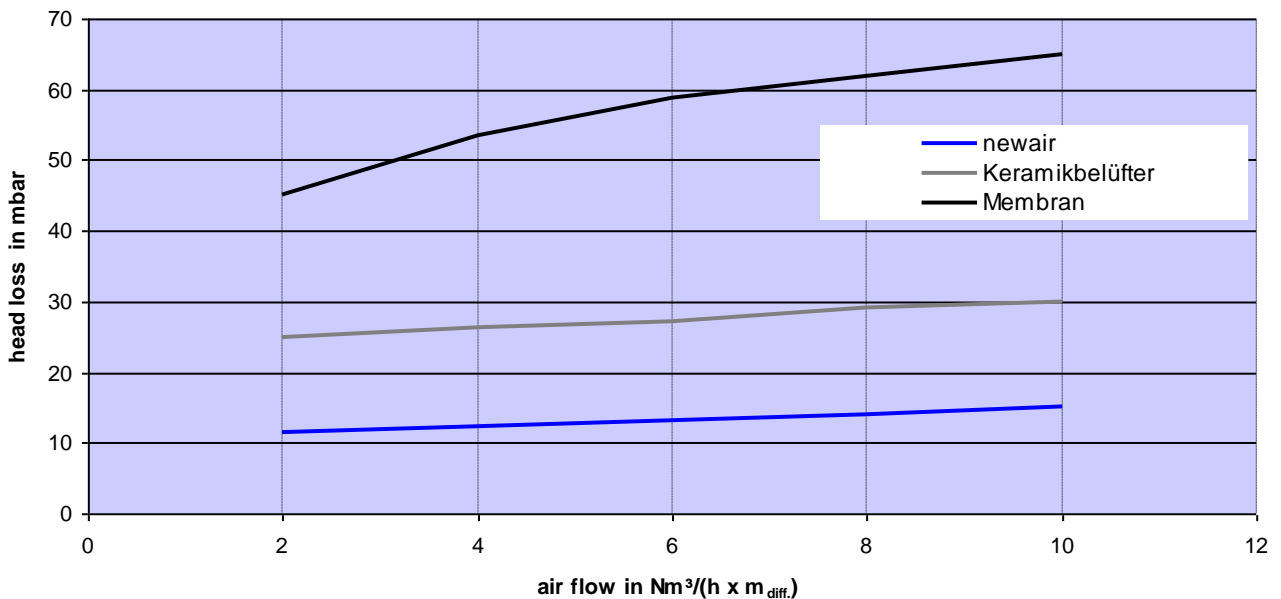
## Tube diffuser HDPE

### Function chart of the pore structure



The newair aerator is characterized by a special material structure. The size of the pores reducing in flow direction. On the one hand there will be created a huge upstream flow area for the air, on the other hand there will be reached a fine allocation of the bubbles by a small pore size on the outlet side.

### Comparison of the head losses of different aerator types



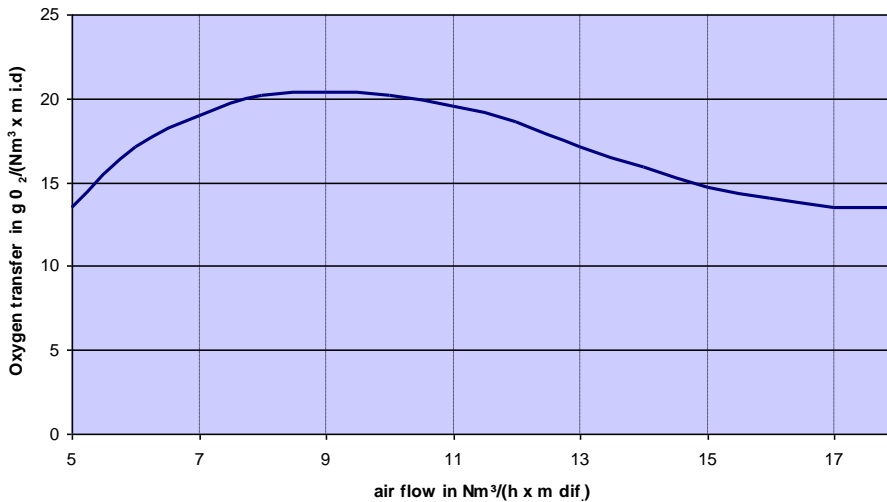
The data depend on the measuring method and the conditions.

The head loss of the conventionally aerators is above twice time so high as the head loss by the newair®-aerators. It operates effectively both in municipal as well as industrial application and so cost-saving.

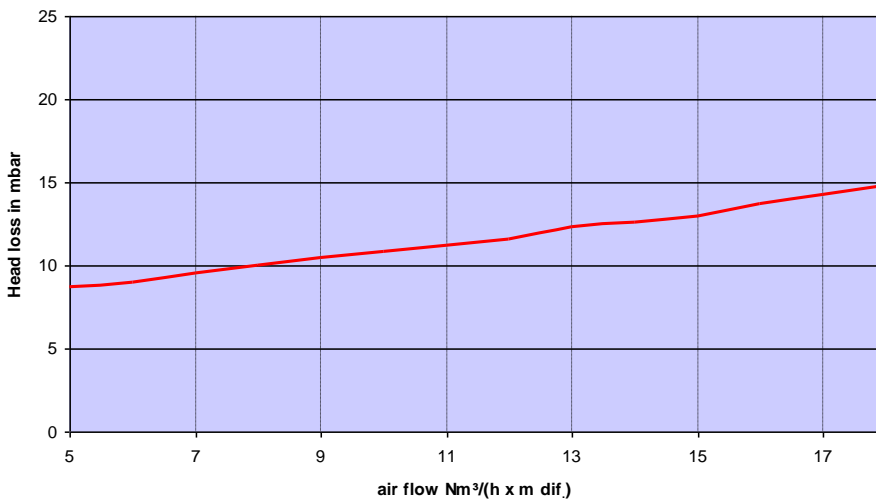
# Tube difusser HDPE

## Oxygen transfer and head loss

Oxygen transfer HDPE-tube diffuser



Head loss HDPE-tube diffuser



Comparable values are attainable only with the same experimental setup and the same conditions. Depending on the tank geometry, tube length, water depth and planar allocation the quoted values can change.

The measuring has been executed from the engineering consultants Schneeberg / University of the Federal Armed Forces Munich according to the ATV – M 209 in pure water.

## Tube diffuser HDPE

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### Air flow

The **optimum air flow** for the newair<sup>®</sup> tube diffuser is **6 - 12 Nm<sup>3</sup>/(h x m<sub>diff</sub>)**. If the air flow rate falls below the optimum range for a longer period of time (approx. 24 hrs.), the flushing of the aerator elements with an air flow rate of 30 Nm<sup>3</sup>/(h x m<sub>diff</sub>) is recommended.

### Storage

The aerators must be stored in their original packing in a dry room. During storage the aerators must be protected from damage caused by ambient conditions (heat, painting, etc.). The aerators and accessories should be installed and put into operation within the usual periods of time (max. 1 year).

### Maintenance

newair<sup>®</sup> aerators require only a little service, but they are not maintenance-free. The functioning of the aerators depends on the discharge of air from the porous structure of the aerators. Therefore the structure should be free from sediments and incrustation because these affect or can even prevent the discharge process. As a rule, waste water contains substances which can cause the formation of sediments, such as carbonates (water hardness), ferric and aluminium salts (precipitants), biological growth, polymers.

For a trouble-free operation it is recommended to dose precipitants and other auxiliary agents with the objective of making sparing use of those according to the technical regulations.

### Lifetime

The precondition for a long lifetime is that the aerators are used in municipal waste water. The composition of existing trade and industrial effluents must comply with the regulations laid down in the latest version of working sheet ATV A 115.

If the discharge of industrial effluents exceeds a proportion of 20 %, the manufacturer has to be consulted. In addition, the assembly and operating instructions must be adhered to.

### Service

It is in your interest to perform regular controls of the aerator system by using the types of maintenance mentioned above. They help to prolong the lifetime of the aerators.

If necessary, you can send aerators to the manufacturer in order to obtain an analysis of the condition of the aerators (charge according to time involved). The aerators sent in for this purpose should be rinsed, but not cleaned with a pressure washer.