

**Idor®**

Geolife® technology

# Chemical-free product for the treatment of wastewater



 **SWISS  
MADE**

**Bioma®**



## **A Swiss company with more than 30 years of international presence.**

BIOMA is a company active in the production and marketing of "Chemical free" and "GMO free" solutions for the food industry, oenology, agriculture, environmental bioremediation, zootechnics and animal and human well-being.

Our products optimize all biological processes through indigenous microbiology and make it possible to reach an optimal balance in the targeted biomass. We seek to minimize the environmental impact within each structure.

The purpose of BIOMA solutions is to optimize production while guaranteeing economic sustainability.



GMO-free



Chemical-free



Risk-free

## **Geolife® technology** **An innovative manufacturing and patented process.**

Geolife® is a technology for the extraction and stabilization of organic compounds allowing the activation of our products. This technology makes our products unique, easy to use and safe for the user, animals and the environment.



## Bioremediation system for wastewater treatment and purification facilities

The bioremediation of wastewater polluted by organic products is based on the action of certain environmental microorganisms that use these pollutants as a source of nutrition.

### OBJECTIVES

On the water



**Optimising the natural purification process**

- To activate, balance and accelerate indigenous microbiological activity.

**Significantly reduces BOD and COD at the scrubber outlet within a short period of time**

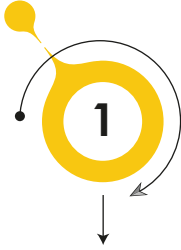
- Idor® accelerates the oxidation and deodorization processes of sewage sludge in a natural form.



# What the Idor® kit includes

## Idor® 1

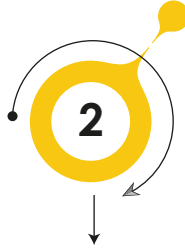
Lipoprotein activator



Milk powder  
(lipoprotein substrate)

## Idor® 2

Microbial-enzymatic mixture



Freeze-dried powder  
(mixture of natural microorganisms)

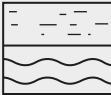
## Idor® 3

Liquid activator



Liquid activator  
(demineralized water,  
*Ascophyllum nodosum*  
and *Arthrospira*)

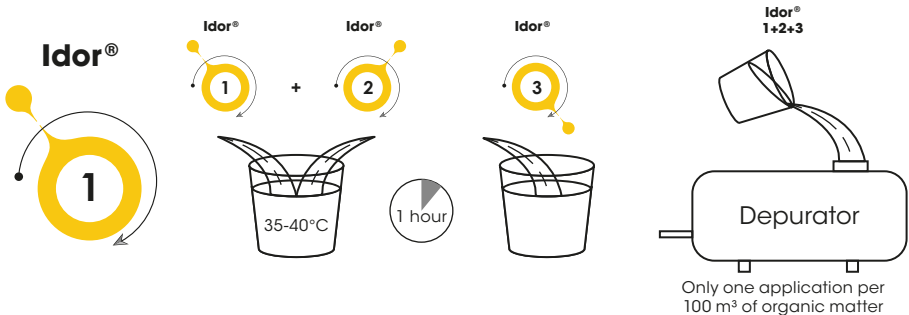
## How to activate?



**Water volume:** 10 litri

**Temperature:** 35°C - 40°C

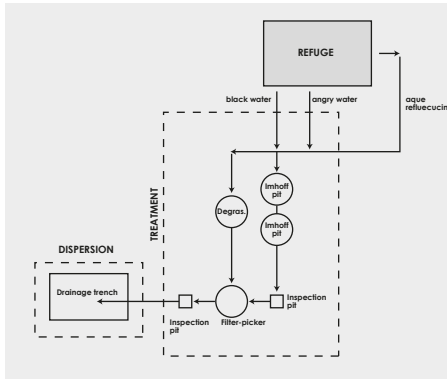
Apply directly in the inlet channel  
of the scrubber



# Our results

## Example of results on a septic tank.

### Rifugio Savoia, Aosta Valley, Italy - 2016



- Description:** The cabin is equipped with a 20m<sup>3</sup> septic tank for the collection and evacuation of waste water. During the summer season, the cabin is visited by approximately 15,000 visitors (some of whom also stay overnight), for an average of about 150 visitors per day, with spikes on weekends.
- Duration:** mid-June 2016 to the end of September 2016.

Figure 3  
Diagram of the refuge processing station.

- The cabin is located in the Grand Paradis National Park.
- The cabin's guests complained to the manager about bad odors from toilets and sinks with obvious damage to the reputation.
- In 2015, the BOD<sub>5</sub> limits (200 mg/LO<sub>2</sub>) had been exceeded and the Cabin had to pay a fine, in addition to the cost of emptying the tank.

Figure 4  
July 2015 out of standard analysis.

| Date of sampling | Final discharge                         |            |
|------------------|---|------------|
|                  | BOD <sub>5</sub> [mg/l O <sub>2</sub> ] | SST [mg/l] |
| 31/08/2015       | <b>344</b>                              | 140        |
| Legal limits     | 200                                     | 160        |

For this reason and based on BOD<sub>5</sub> values, septic tank size, and average daily visits, a four-treatment schedule for the 2016 season was organized as follows:

- 1° application: at the start of operations (mid-June), a 2.25 kg package of Idor<sup>®</sup> was poured directly into the septic tank to quickly start microbial activity;
- 2° application: in mid-July, a 0.75 kg packet of Idor<sup>®</sup> was poured into the drains of the refuge;
- 3° application: in mid-August, a 0.75 kg packet of Idor<sup>®</sup> was poured directly into the septic tank;
- 4° application: at the end of the season (mid-September): 1 package of 2,25 kg of Idor<sup>®</sup> was poured directly into the cabin's drainage system.

### Reduction in biochemical oxygen demand (BOD<sub>5</sub>)

Below are analyses from the 2016 season conducted two weeks after the SST treatment and following the second and third application. It shows an efficiency in the reduction of BOD<sub>5</sub> of 86% compared to the entry in the installation.

| Date of sampling  | BOD <sub>5</sub> [mg/l O <sub>2</sub> ] |           |              |
|-------------------|---|-----------|--------------|
|                   | Intake                                  | Discharge | Efficiency % |
| 27/07/2016        |   | 158       |              |
| <b>23/08/2016</b> | <b>222</b>                              | <b>29</b> | <b>86.9%</b> |
| Legal limits      | n.d.                                    | 200       |              |

### Reduction in total suspended solids (TSS)

TSS values also decreased from near legal limitations (140 mg/l) in 2015 to 120 mg/l at the end of July 2016, and at the end of August 2016, the same value decreased to 10 mg/l with an elimination efficiency of 93.6% compared to the TSS entering the plant.

| Date of sampling  | SST [mg/l] |           |              |
|-------------------|------------|-----------|--------------|
|                   | Intake     | Discharge | Efficiency % |
| 27/07/2016        |            | 120       |              |
| <b>23/08/2016</b> | <b>156</b> | <b>10</b> | <b>93.6%</b> |
| Legal limits      | n.d.       | 160       |              |

## Example of results on sludge from urban wastewater. AQP - Aquedotto Pugliese, Foggia, Italy - 2018



Figure 1 Tanks used for the test. Bottom of tank B, top of tank A.

**Description:** sludge produced by urban wastewater treatment (ERC: 19.08.05)

**Duration:** between 24.10.2018 and 12.11.2018. Two tanks were set up, A and B, and equipped with a mixer. Tank B was treated with Idor® and tank A was kept as a control. The content is represented by an aqueous suspension of sludge resulting from the treatment of urban wastewater of Foggia.

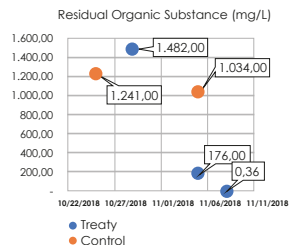
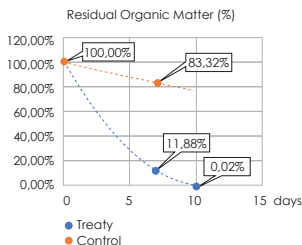
### Reduction in total suspended solids (TSS)

The effects on water turbidity after 20 days of treatment were clear: at the end of the study, total suspended solids were 2.8 mg/Kg in untreated tank A while they were 1.09 mg/Kg in treated tank B.

## Reduction of the organic pollutant load

The organic matter concentration of the two tanks was comparable. The treated tank B had a higher organic matter concentration than the control by about 20%, however, the contribution to the degradation of organic substances provided by the Idor® bacterial consortium is obvious.

On the left graphic you can see the data of the organic substance represented as a residual percentage in relation to the initial content, which allows you to compare the efficiency of the degradation with or without the Idor® consortium. On the right graphic you can see the data in absolute values over time.



## Processing and conservation:

Micro-organisms and enzymes for the humification and mineralization of the organic material of plant waste. Closed packaging, can be stored for 2 years in a dry environment between 10°C and 43°C, protected from sunlight. Opened packaging, can be stored for 3 months at room temperature and protected from sunlight (if properly closed and protected from humidity).

## Composition:

**Idor®**

Dried and selected cultures of microorganisms on a substrate of cereals and talc.

## Classification and labelling:

Chemicals are classified according to their level of physical, health and environmental hazard. These hazards are indicated by specific labels and safety data sheets (SDS). With the GHS (Globally Harmonized System), hazard statements have been worldwide standardized so that the recipients of the information (production workers, first aiders and consumers) can better understand the hazards of the chemicals used. In the EU, the principles of the GHS are ratified in the EU-1272/2008 (CLP) regulation. In accordance with this regulation, the Idor® range does not require classification or labelling according to its physicochemical properties, its effects on the health and safety of the environment and does not require a safety data sheet. The Idor® range includes only organisms that are naturally present in nature and non-hazardous (WHO Class 1).



## Notes:

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I am chemical free