

# BioforZe NITROX S

## ELIMINATION OF SULPHUR AND MERCAPTAN

## BIOTECHNOLOGICAL SPECIALITIES

### INDUSTRY

In an anaerobic medium (with no dissolved oxygen), the degradation of organic matter eventually leads to the formation of methane, but other intermediate compounds are also released into the medium that can be problematic.

These include specific (propionic and butyric) volatile fatty acids and sulphur-based compounds, such as hydrogen sulphide and mercaptans.

One common characteristic of all of these compounds is that they are related with the emission of bad smells. Emissions of hydrogen sulphide (H<sub>2</sub>S) are particularly hazardous as, in addition to smelling bad, the gas is extremely toxic for people and corrosive to installations (electric switchboards, construction materials, etc.).

In treatment plants and sewer systems, the functioning of bacterial populations is determined by the electron acceptor available to the metabolic system. The type of electron acceptor determines whether an environment is under aerobic, anoxic or anaerobic conditions and thus determines the type of bacterial population that will dominate the medium, due to the amount of energy that the microorganisms can obtain from the different acceptors (O<sub>2</sub>>NO<sub>3</sub>>SO<sub>4</sub>>organic matter).

Consequently, in an anaerobic environment the activity of sulphate-reducing bacteria is predominant, which generates H<sub>2</sub>S. However, when oxygen or **BioforZe NITROX S** is introduced into this environment, sulphate reduction is rapidly inhibited as the predominant bacterial activity shifts to populations that can exploit the new medium most effectively.

Consequently, **BioforZe NITROX S** is a highly effective, safe and economical alternative to *classical* treatments for eliminating odours from treatment systems and sewers. These treatments are based on adding oxidising agents to the medium, for example, hydrogen peroxide, chlorine dioxide, potassium permanganate, etc.

In addition to eliminating odours, **BioforZe NITROX S** can be used as a source of oxygen for use in treatment systems affected by a lack of dissolved oxygen in some of the stages (primary or secondary treatment).

**BioforZe NITROX S** also contains selected microorganisms that help to combat bad smells by sulphate-reducing bacteria (greater speed of development) and micronutrients that stimulate bacterial growth.

**BioforZe NITROX S** is formulated with strictly non-pathogenic microorganisms, according to European Directive 2000/54/EC.

**ADVANTAGES**

- Prevents the formation of bad smells (hydrogen sulphide and fatty acids) quickly and effectively, and eliminates problems associated with these odours such as corrosion, and improves the environment for staff.
- An economical, effective alternative to the use of oxidising agents or iron salts for eliminating odours.
- Product that is easy to apply and safe to handle.
- An alternative for treatment systems with a lack of dissolved oxygen.

**DOSAGE AND INSTRUCTIONS FOR USE**

**BioforZe NITROX S** is ready to use and can be applied directly to the medium using a dosing pump.

The recommended dose for each case will be defined by our Technical Service, after a specific study of each application.

**CHARACTERISTICS**

- |                    |                       |
|--------------------|-----------------------|
| - Appearance:      | Slightly clear liquid |
| - pH:              | 6.0 – 7.5             |
| - Density:         | 1.10 g/ml             |
| - Bacterial count: | 10 <sup>7</sup> /ml   |

**RECOMMENDATIONS**

- Store in a cool, dry place.
- Avoid prolonged contact with the skin.
- In the event of contact with skin, wash thoroughly with soap and water.
- For further information, see the product's safety data sheet.

**PACKAGING**

Non-returnable containers of 1,000 litres.