BIOEPUR

IDRABEL
ENVIRONMENTAL BIOTECHNOLOGY

BIO-EPUR

IMPROVING DEGRADATION EFFICIENCY AND SOLVING MANAGEMENT ISSUES

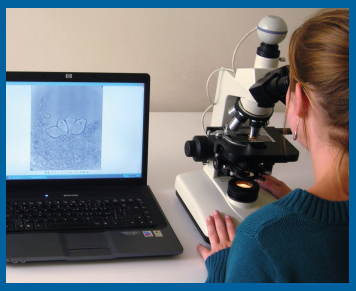
BY OPTIMIZING AEROBIC BIOLOGY IN WASTEWATER TREATMENT PLANTS

IDRABEL offers efficient, economical and environmentally friendly biotechnological solutions for the treatment of wastewater and sludge polluted by organic contaminants.
IDRABEL is active in 3 areas:
– Treatment and maintenance of sewerage networks (**BIO-COL**);
– Bio-dredging of water bodies (**BIO-VASE**);
– Improving yields and decreasing operational costs by optimizing aerobic biology in wastewater treatment plants (**BIO-EPUR**).

BIO-EPUR has been developed to work in aeration tanks and biological reactors operating in aerobic mode. The principle is therefore to ensure that the oxygen in the basins is used by the biological activity and not through chemical oxidation in order to increase biological degradation efficiency and to reduce energy consumption.

It is necessary to distinguish 2 MAIN TYPES OF WASTEWATER TREATMENT PLANTS (WWTPs):

– Urban WWTPs treating domestic wastewater for which we generally recommend the use of BIO-COL in the sewer system upstream of the plant. We also complete the treatment by using BIO-EPUR in the aeration tanks of the plant.
– Industrial WWTPs for which we offer a range of products and solutions.
Each industry has specific inputs and particular issues that are related to the type of production undergone.



In addition to providing BIO-EPUR, our team of experts completes the solution by offering technical advice on the processes, configuration and flows in the WWTP.

REFERENCES

IDRABEL has numerous references for BIO-EPUR in the industrial sector and in urban WWTPs:
– **Food industry**: brewery, cheese factory, dairy, yeast factory, ready meals, lemonades and other beverages, slaughterhouses;
– **Paper mills** (manufacture of various types of papers);
– **Petrochemicals**: refinery, petroleum products;
– **Chemistry**: paint, plastic;
– **Urban WWTP** also receiving industrial wastewater;
– **Urban WWTP** with problems or deficiencies in its biological treatment phase.

PRODUCT CHARACTERISTICS

BIO-EPUR is a granular powder composed of several elements:

– **A porous natural substrate** rich in oligo-elements and with a very large contact surface. This support is composed of Calcium Carbonate and Alumino-Silicate. We can vary the proportion of each and propose different granulometry. The microorganisms housed in the capillaries of the substrate are protected from external aggressions and physical variations.

– **Oligo-elements and several types of molecules that are crucial for the metabolism of microorganisms.** These elements allow an optimal functioning of the biological activity. Nutrient dosing also allows for a correction of the CNP balance.

– **Bacteria, fungi and enzymes** that are specific to the plant's wastewater inputs and treatment purpose.

PRODUCT LINE

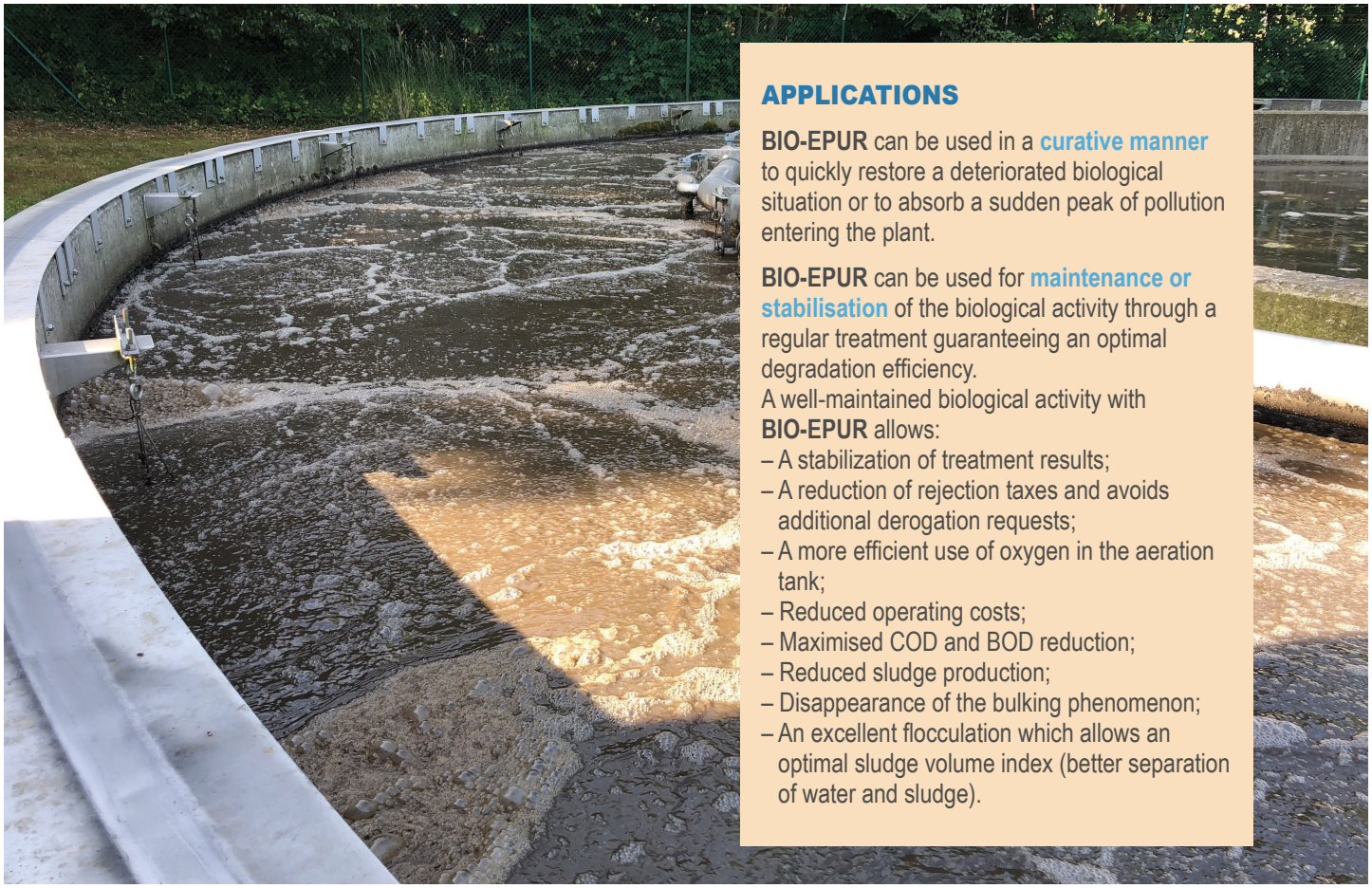
> **BIO-EPUR-DENI**: to ensure an optimum biological denitrification

> **BIO-EPUR-START:** for a quick and efficient start or restart of the biology of a plant (without having to bring sludge from elsewhere). This product guarantees an excellent biological activity while allowing the reduction of the concentration of sludge (in gr/l) in the aeration tank. It therefore allows significant energy savings and an important reduction in sludge production.

> **BIO-EPUR-BOOST-2XX:** allows to boost the degradation of targeted organic contaminants. Enables the plant to accept more COD and guarantees a higher stability of the effluent values in respect of the law standards.

XX is variable:

01: Halogenated compounds;
02: Phenols - Cresols;
03: Triglycerides - animal and vegetal fats;
04: Surfactants - detergents;
05: Lignin and cellulose;
06: Organochlorine compounds;
07: Organopolychlorine compounds;
08: Hydrocarbons and industrial oils;
09: Cyanide compounds;
10: Degradation of sulphates.



APPLICATIONS

BIO-EPUR can be used in a **curative manner** to quickly restore a deteriorated biological situation or to absorb a sudden peak of pollution entering the plant.

BIO-EPUR can be used for **maintenance or stabilisation** of the biological activity through a regular treatment guaranteeing an optimal degradation efficiency.

A well-maintained biological activity with **BIO-EPUR** allows:

– A stabilization of treatment results;
– A reduction of rejection taxes and avoids additional derogation requests;
– A more efficient use of oxygen in the aeration tank;
– Reduced operating costs;
– Maximised COD and BOD reduction;
– Reduced sludge production;
– Disappearance of the bulking phenomenon;
– An excellent flocculation which allows an optimal sludge volume index (better separation of water and sludge).

BIO-EPUR

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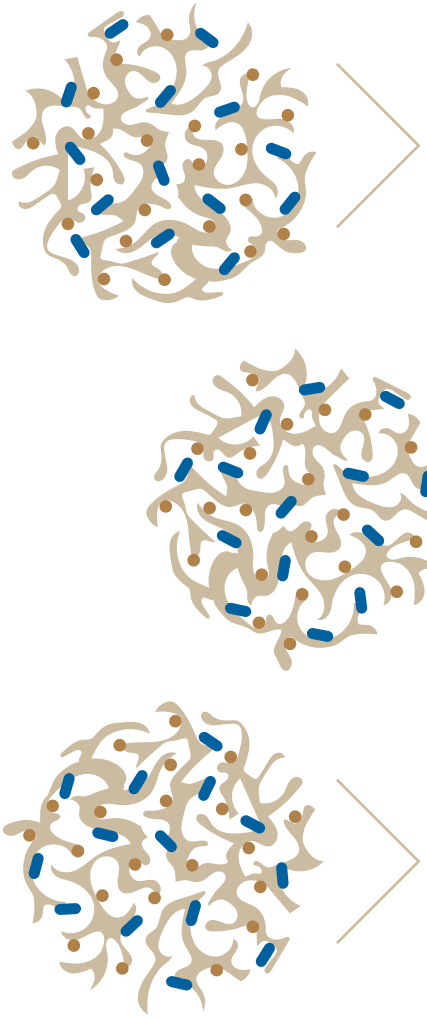
Microorganisms.

Bio-fixation:

Porous mineral support.

Enzymes and oligo-elements.



SLUDGE REDUCTION AND INCREASED PLANT CAPACITY

– Reduction of bulking phenomenon and reduction of filamentous bacteria.
– Reduction of sludge production in the primary and secondary clarifier.
– Increased efficiency and increased depuration capacity of the WWTP.
– Reinforcement and stabilization of the biological activity.
– Reduction of WWTP management costs (increased energy efficiency, reduction of sludge output, reduction of use of consumables like coagulants, floculants and anti-foam products).
– Increased floculation and coagulation.

IMPROVEMENT OF BOD, COD, N, P AND SS VALUES

– Improvement and stabilization of effluent values.

TOTAL NITRIFICATION AND ELIMINATION OF H_2S PRODUCTION

– Reduced corrosion.
– Odour elimination.
– Increased work safety.

POSSIBILITY OF TREATMENT OF EVERY ORGANIC CONTAMINANT

– Halogenates, surfactants, phenols, petroleum derivatives, PCBs, organic sulfur, organic nitrogen, fats, hydrocarbons, dioxins, cyanides, cresols, chloro-phenols, cellulose.

ACTIVATION OR RE-ACTIVATION (POST BIOLOGICAL CRASH) OF WWTP IN A FEW DAYS

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