

# BIO-STAR™ Munibac

## Municipal wastewater treatment Fats, Oils and Greases

**Bio-STAR™ Munibac** is a blend of selectively adapted natural bacteria with specific cell characteristics to degrade fat, oils and greases (FOG) originating from animals and plants. Its concentrated formula is recommended for a wide variety of municipal application such as treatment of FOG in collection systems and treatment plants.

**Bio-STAR™ Munibac** is made of a synergistic blend of natural strains of Bacillus and Pseudomonas, nutrients and a natural catalyst which stimulate the bacteria growth. These bacteria make a highly specialized consortium and were selected for their complementarities and their superior enzyme capacities to degrade municipal waste. Their performance is both remarkable in anaerobic and aerobic environment.

All its components are registered on Canada's Domestic Substance List (DSL) and **Bio-STAR™ Munibac** subscribes to the very principles of sustainable development.

### **BENEFITS:**

- Reduce municipal surcharges.
- Targeted removal of specific organics.
- Fast recovery from toxic and load-related upsets.
- Bioaugmentation can lead to reduction of the frequency and severity of plant upsets. It can also improve stability as measured by the quality and variability of biological effluents through the introduction of bacterial strains with higher growth and substrate utilization rates.
- New plant, seasonal or post-shutdown start-up.
- Improved stability can be characterized by reduced effluent organics, an improvement of flocculation in activated sludge and a superior number and diversity of protozoan. Higher organic removal efficiencies stabilize or allow the initiation of nitrification.
- Reduce or eliminate the potentially negative impact of production increases or changes in product mix on effluent quality.



# BIO-STAR™ Munibac

## APPLICATIONS:

### In treatment plants:

- Reduces BOD / COD by about 20%
- Reduces generated sludge by 15 to 30%
- Degrades grease aerobically in primary clarifier skimmings or any other plant accumulation of fats and greases or collection system greases as an alternative to landfilling or application to anaerobic digesters.
- Improves solids settling.
- Improves cold weather operation.
- Reduces binding of fixed-film support media or sand filters.
- Reduces SV30 or SVI where it is impacted by FOG in a negative way.

### In collection systems:

- Eliminates crown corrosion problems
- Reduces or eliminates odors
- Eliminate emergency blockages.
- Cuts down line and pump station maintenance costs.
- Reduces grease disposal costs.



## FEATURES

- Efficient up to 45° C (113° F).
- Fast outgrowth of spores and germination.
- Extracellular enzyme production for degradation of solid materials.
- Adherence to a wide range of surfaces supports biofilm formation.
- Consists of vegetative and spore-forming bacterial strains capable of utilizing aerobic, facultative and fermentative metabolic pathways.

Bacterial count	5 x 10 <sup>9</sup> cfu/gram
Bacteria Type	A consortium of Bacillus and Pseudomonas
Biological pathways	Aerobic and facultative anaerobic
Pathogenic bacteria	Salmonella/Shigella free
pH range	6.0 - 8.5
Temperature range	6°C - 45°C
Appearance	Tan-powder
Stability	1 year between 2° - 35°C

## STORAGE AND HANDLING

Keep in a cool and dry place. Avoid contact with skin and eyes. Wash hands with water and soap after each use.