



**BIONICS**  
ENVIROTECH

# PHARMACEUTICAL INDUSTRY

## WASTEWATER TREATMENT SOLUTIONS

— • INNOVATIVE NANOZYME BIO CULTURE TECHNOLOGY • —  
FOR EFFICIENT **PHARMACEUTICAL EFFLUENT TREATMENT**



**CPCB  
COMPLIANCE**



**ZERO  
SLUDGE**



**ECO-  
FRIENDLY**



**BIOLOGICAL  
TREATMENT**



Website  
[www.bionicsenviro.com](http://www.bionicsenviro.com)



Phone  
90950 00090 | 95663 76690  
82202 27745



Email  
[drparams2014@gmail.com](mailto:drparams2014@gmail.com)  
[bionicsenvirotech@gmail.com](mailto:bionicsenvirotech@gmail.com)  
[info@bionicsenviro.com](mailto:info@bionicsenviro.com)

# CHALLENGES IN PHARMACEUTICAL WASTEWATER

## Common Wastewater Problems



### HIGH COD

Drug residues and organic chemicals increase COD.



### HIGH BOD

Organic compounds increase biological oxygen demand.



### TOXIC CHEMICALS

- Presence of solvents
- Alcohols
- Acids
- Alkalies
- Chemical intermediates



### ANTIBIOTIC RESISTANCE

Improper biological treatment leads to resistant microorganisms.



### ODOUR PROBLEMS

- Anaerobic decomposition
- Organic degradation
- Sulphides



### FOAM FORMATION

- High surfactants
- Detergents
- Cleaning chemicals



### SLUDGE GENERATION

- Excess biomass
- Chemical precipitation
- High disposal cost



### SHOCK LOADING

Batch manufacturing causes sudden fluctuations in

- COD
- Flow
- pH
- Toxicity



**BIONICS**  
ENVIROTECH



CPCB  
COMPLIANCE



ZERO  
SLUDGE



ECO-  
FRIENDLY



BIOLOGICAL  
TREATMENT



Website  
[www.bionicsenviro.com](http://www.bionicsenviro.com)



Phone  
90950 00090 | 95663 76690  
82202 27745



Email  
[drparams2014@gmail.com](mailto:drparams2014@gmail.com)  
[bionicsenvirotech@gmail.com](mailto:bionicsenvirotech@gmail.com)  
[info@bionicsenviro.com](mailto:info@bionicsenviro.com)

# WHY NANOZYME BIOCULTURE?

## NANOZYME BIOLOGICAL TECHNOLOGY

Nanozyme is a consortium of beneficial microorganisms developed using **Solid State Fermentation Technology**.

## WHY NANOZYME BIOCULTURE?

- ✓ Faster startup
- ✓ Better degradation
- ✓ Higher microbial activity
- ✓ Stable biomass
- ✓ No genetic modification
- ✓ Eco-friendly



## HOW NANOZYME BIOCULTURE WORKS?

Enzyme Production  
Break down complex pollutants

Organic Matter Degradation  
Reduces COD/BOD

Biofilm Formation  
Strong biofilm for efficient treatment

High Microbial Activity  
Increases treatment efficiency

Nutrient Utilization  
Optimizes nutrient consumption

Stable Biomass  
Sustains high MLSS & DO

## KEY ADVANTAGES



Reduces COD



Reduces BOD



Controls odour



Improves DO



Reduces sludge



Handles shock load



Improves settling



Maintains MLSS



Enhances biological oxidation



Improves plant stability

## BEFORE & AFTER

### BEFORE TREATMENT



- ✗ High COD
- ✗ High BOD
- ✗ Foul Odour
- ✗ Low DO
- ✗ Excess Sludge
- ✗ Poor Settling



### AFTER TREATMENT WITH NANOZYME BIOCULTURE



- ✓ Low COD
- ✓ Low BOD
- ✓ Odour Controlled
- ✓ Improved DO
- ✓ Reduced Sludge
- ✓ Good Settling



ECO-FRIENDLY



BIOLOGICAL SOLUTION



SUSTAINABLE TREATMENT



CPCB COMPLIANCE



ZERO SLUDGE



Website  
[www.bionicsenviro.com](http://www.bionicsenviro.com)



Phone  
90950 00090 | 95663 76690  
82202 27745



Email  
[drparams2014@gmail.com](mailto:drparams2014@gmail.com)  
[bionicsenvirotech@gmail.com](mailto:bionicsenvirotech@gmail.com)  
[info@bionicsenviro.com](mailto:info@bionicsenviro.com)

# APPLICATIONS IN PHARMA INDUSTRY



Advanced Biological Solution for  
Pharmaceutical Wastewater Treatment

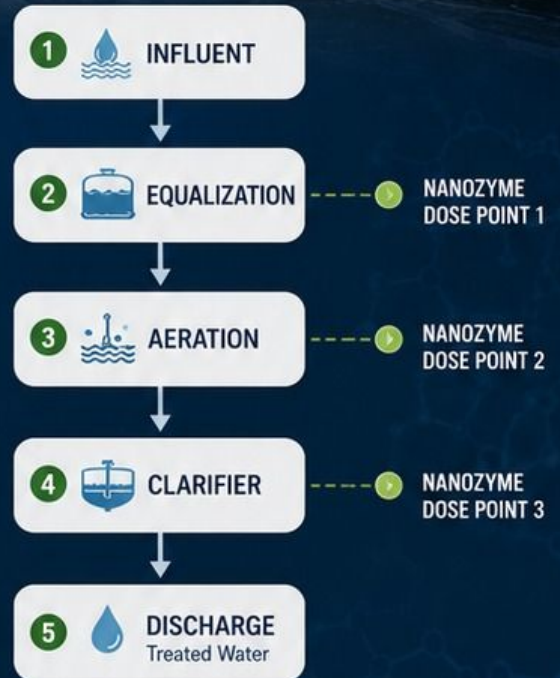
## SUITABLE FOR

- API Plants
- Tablet Manufacturing
- Capsule Plants
- Injectable Manufacturing
- Biotechnology
- Ferbal Medicine Plants
- Medical Chemical Plants
- Nutraceutical Industries
- Hospital Wastewater
- Research Laboratories
- Bulk Drug Manufacturing

## PROCESS AREAS



## TREATMENT FLOW DIAGRAM

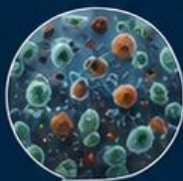


**Nanozyme Bioculture**  
Dosing Points for Optimal Performance

## HOW NANOZYME WORKS IN TREATMENT PLANT



Nanozyme microbes start working immediately



Breakdown of complex organic pollutants



Improved biodegradation and higher microbial activity



Reduced COD, BOD, TSS and improved effluent quality



Eco-friendly discharge and environmental compliance

- Faster Startup**
- Better Degradation**
- Higher Microbial Activity**
- Stable Biomass**
- No Genetic Modification**
- Eco Friendly**

Website  
[www.bionicsenviro.com](http://www.bionicsenviro.com)

Phone  
90950 00090 | 95663 76690  
82202 27745

Email  
[drpararms2014@gmail.com](mailto:drpararms2014@gmail.com)  
[bionicsenvirotech@gmail.com](mailto:bionicsenvirotech@gmail.com)  
[info@bionicsenviro.com](mailto:info@bionicsenviro.com)

## PRODUCT DETAILS

# NANOZYME BET-ETP-7003

### ADVANCED BIOLOGICAL SOLUTION FOR PHARMACEUTICAL EFFLUENT TREATMENT

Nanozyme BET-ETP-7003 is a high-performance biological culture developed specifically for pharmaceutical ETPs. It enhances biodegradation efficiency, reduces organic load, controls odour and ensures stable treatment performance.

#### PRODUCT SPECIFICATIONS

|                                                                                    |                 |                                                                                          |
|------------------------------------------------------------------------------------|-----------------|------------------------------------------------------------------------------------------|
|    | Form            | Organic Semi Solid                                                                       |
|    | Shelf Life      | 1 Year                                                                                   |
|   | Type            | Living Bacterial Culture                                                                 |
|  | Bacterial Count | $6 \times 10^9$ CFU/ml                                                                   |
|  | Color           | Brown                                                                                    |
|  | Odour           | Characteristic                                                                           |
|  | Packaging       | <ul style="list-style-type: none"><li>• 25 kg</li><li>• 50 kg</li><li>• 100 kg</li></ul> |



#### PRODUCT FEATURES

-  High bacterial concentration
-  Rapid activation
-  Long shelf life
-  Stable microbial consortium
-  Suitable for all pharma ETPs

#### POWERFUL MICROBIAL CONSORTIUM

Breaks down  
complex organics

Reduces COD  
and BOD

Controls odour  
and toxins



Enhances  
biodegradation

Improves  
microbial activity

Ensures stable  
ETP performance



HIGH PERFORMANCE  
BIOCULTURE



ECO-  
FRIENDLY



ZERO SLUDGE  
TECHNOLOGY



CPCB  
COMPLIANT



SAFE & NON  
TOXIC



Website  
[www.bionicsenviro.com](http://www.bionicsenviro.com)



Phone  
90950 00090 | 95663 76690  
82202 27745



Email  
[drparams2014@gmail.com](mailto:drparams2014@gmail.com)  
[bionicsenvirotech@gmail.com](mailto:bionicsenvirotech@gmail.com)  
[info@bionicsenviro.com](mailto:info@bionicsenviro.com)

# PERFORMANCE IMPROVEMENT

## Superior Results with Nanozyme Bioculture Technology

Nanozyme bioculture enhances microbial efficiency, improves degradation and ensures consistent performance in pharmaceutical ETPs.



### TYPICAL REDUCTION

| PARAMETER                                                                                            | REDUCTION             |
|------------------------------------------------------------------------------------------------------|-----------------------|
|  COD                | 85 – 98%              |
|  BOD                | 90 – 99%              |
|  ODOUR              | 100%                  |
|  SLUDGE            | ZERO EXCESS SLUDGE    |
|  SUSPENDED SOLIDS | 90 – 95%              |
|  OIL & GREASE     | 80 – 95%              |
|  FOAMING          | SIGNIFICANT REDUCTION |
|  COLOUR           | HIGH REDUCTION        |
|  DO               | INCREASE              |

### VISIBLE PERFORMANCE



**BETTER TREATMENT  
BETTER ENVIRONMENT  
BETTER TOMORROW**

### ★ KEY BENEFITS



Lower  
chemical  
consumption



Reduced  
aeration  
cost



Lower  
sludge handling  
cost



Stable  
discharge



Easy  
operation



Better  
compliance



ADVANCED  
BIOLOGICAL  
TECHNOLOGY



HIGH  
MICROBIAL  
ACTIVITY



ECO-  
FRIENDLY



ZERO EXCESS  
SLUDGE



CONSISTENT  
HIGH  
PERFORMANCE



Website  
[www.bionicsenviro.com](http://www.bionicsenviro.com)



Phone  
90950 00090 | 95663 76690  
82202 27745



Email  
[drparamas2014@gmail.com](mailto:drparamas2014@gmail.com)  
[bionicsenvirotech@gmail.com](mailto:bionicsenvirotech@gmail.com)  
[info@bionicsenviro.com](mailto:info@bionicsenviro.com)

# BENEFITS TO PHARMA INDUSTRY

## Powered by Nanozyme Bioculture Technology

Nanozyme bioculture delivers superior biological performance, ensuring cost-effective, eco-friendly and sustainable wastewater treatment for all pharmaceutical industries.

### OPERATIONAL BENEFITS

-  Lower Electricity Cost
-  Reduced Aeration
-  Less Chemical Usage
-  No Bad Odour
-  Better Biomass
-  Reduced Maintenance
-  Lower Sludge Disposal
-  Quick Recovery after Toxic Shock
-  Improved Compliance
-  Long-term Cost Savings

### ENVIRONMENTAL BENEFITS

-  Reduced Pollution
-  Improved Water Quality
-  Reduced Carbon Footprint
-  Green Manufacturing
-  Supports Sustainability Goals
-  Supports Zero Liquid Discharge Systems



## BEFORE VS AFTER NANOZYME

### BEFORE TREATMENT

- ✗ High COD, BOD
- ✗ Strong Bad Odour
- ✗ High Sludge Generation
- ✗ Foaming
- ✗ Poor Settling
- ✗ High Energy Consumption
- ✗ Non-compliance Risk



VS

### AFTER TREATMENT WITH NANOZYME BIO CULTURE

- ✓ Low COD, BOD High Removal
- ✓ No Bad Odour
- ✓ Zero Excess Sludge
- ✓ No Foaming
- ✓ Excellent Settling
- ✓ Low Energy Consumption
- ✓ Meets CPCB Standards



 **HIGH COST | LOW EFFICIENCY | ENVIRONMENTAL IMPACT**

 **LOW COST | HIGH EFFICIENCY | SUSTAINABLE FUTURE**



ECO-FRIENDLY



BIOLOGICAL SOLUTION



COST EFFECTIVE



RELIABLE PERFORMANCE



SAFE FOR ENVIRONMENT



SUPPORTS SUSTAINABILITY

# DOSAGE & MATERIAL PREPARATION

Nanozyme Bioculture Technology for  
Efficient Pharmaceutical Effluent Treatment

## MATERIAL PREPARATION

| MATERIAL                                                                                                   | QUANTITY      |
|------------------------------------------------------------------------------------------------------------|---------------|
|  PV Tank                  | <b>1000 L</b> |
|  Raw Water                | <b>1000 L</b> |
|  Nanozyme<br>BET-ETP-7003 | <b>100 kg</b> |
|  Nano Nutrient            | <b>50 kg</b>  |

## INCUBATION



**7 DAYS**

Maintain aeration  
and mixing during  
incubation period.

## RECOMMENDED DOSAGE

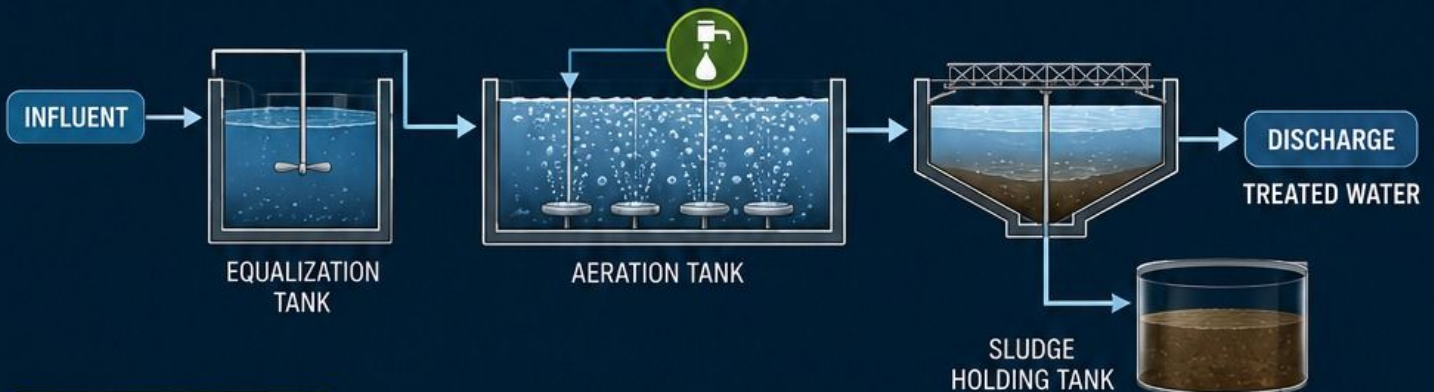
| PERIOD                                                                                          | DOSAGE             |
|-------------------------------------------------------------------------------------------------|--------------------|
|  Day 1 – 10  | <b>100 L / Day</b> |
|  Day 11 – 20 | <b>100 L / Day</b> |
|  Day 21 – 30 | <b>100 L / Day</b> |



Dosage can be adjusted based on  
inlet load, COD, BOD, and plant  
performance.

## AERATION TANK APPLICATION

### NANOZYME DOSING POINT



## DOSING METHOD

### 1 CONTINUOUS DOSING



Add Nanozyme culture  
continuously or at regular  
intervals to maintain  
optimum microbial activity.

#### Purpose

- Maintain stable treatment
- Prevent shock load impact
- Improve biodegradation

### 2 MAINTENANCE DOSING



Add Nanozyme daily as  
per recommended dosage  
to maintain healthy  
microbial population.

#### Purpose

- Maintain MLSS
- Improve efficiency
- Reduce sludge generation

### 3 SHOCK DOSING



Add higher dosage during  
high load, toxicity, system  
upset or low performance  
periods.

#### Purpose

- Quick recovery
- Handle high organic load
- Restore system balance



HIGH MICROBIAL  
ACTIVITY



BETTER  
BIODEGRADATION



LOW SLUDGE  
GENERATION



STABLE PLANT  
PERFORMANCE



ECO-FRIENDLY  
SOLUTION



Website  
[www.bionicsenviro.com](http://www.bionicsenviro.com)



Phone  
90950 00090 | 95663 76690  
82202 27745



Email  
[drpaarms2014@gmail.com](mailto:drpaarms2014@gmail.com)  
[bionicsenvirotech@gmail.com](mailto:bionicsenvirotech@gmail.com)  
[info@bionicsenviro.com](mailto:info@bionicsenviro.com)

# WHY CHOOSE BIONICS ENVIRO TECH?



Advanced Microbial Solutions for  
Efficient Wastewater Treatment

## WHY CHOOSE US

- ✓ 25+ Years Experience
- ✓ Scientific Manufacturing
- ✓ Advanced R&D
- ✓ SSF Technology
- ✓ Pan India Support
- ✓ Industry-specific Formulations
- ✓ Technical Site Visits
- ✓ Commissioning Assistance
- ✓ ETP Troubleshooting
- ✓ Performance Monitoring
- ✓ Customized Solutions



SCIENCE | SUSTAINABILITY | SOLUTIONS

## INDUSTRIES SERVED



HIGH  
PERFORMANCE



SCIENTIFICALLY  
PROVEN



ECO-FRIENDLY  
SOLUTIONS



COST  
EFFECTIVE



RELIABLE  
SUPPORT



BETTER  
TOMORROW



Website  
[www.bionicsenviro.com](http://www.bionicsenviro.com)



Phone  
90950 00090 | 95663 76690  
82202 27745



Email  
[drpaarms2014@gmail.com](mailto:drpaarms2014@gmail.com)  
[bionicsenvirotech@gmail.com](mailto:bionicsenvirotech@gmail.com)  
[info@bionicsenviro.com](mailto:info@bionicsenviro.com)

# PHARMACEUTICAL INDUSTRY SUCCESS STORY

REAL RESULTS. PROVEN PERFORMANCE.

 **INDUSTRY  
API MANUFACTURING PLANT**

## PROBLEM

-  COD > 5000 mg/L
-  High Sludge
-  Odour
-  Poor Settling



## SOLUTION



- ✓ Nanozyme BET-ETP-7003
- ✓ Nano Nutrient

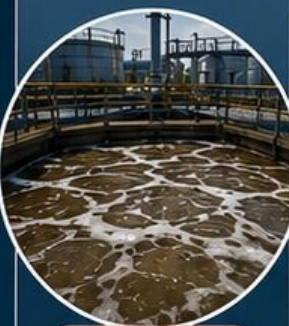
 **30 DAYS**

## RESULTS

-  COD ↓ **95%**
-  BOD ↓ **95%**
-  Sludge ↓ **zero**
-  Odour ✓ **Eliminated**
-  Compliance ✓ **Achieved**
-  Electricity ↓ **20-30%**



## BEFORE & AFTER COMPARISON

|                                                                                    | PARAMETER                                                                                                   | BEFORE TREATMENT | AFTER TREATMENT (30 DAYS) | % IMPROVEMENT   |                                                                                       |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|------------------|---------------------------|-----------------|---------------------------------------------------------------------------------------|
|  |  COD (mg/L)              | > 5000           | < 250                     | <b>95% ↑</b>    |  |
|                                                                                    |  BOD (mg/L)              | > 2500           | < 125                     | <b>95% ↑</b>    |                                                                                       |
|                                                                                    |  TSS (mg/L)              | > 800            | < 80                      | <b>90% ↑</b>    |                                                                                       |
|                                                                                    |  Sludge (m³/day)         | High             | Very Low                  | <b>80% ↑</b>    |                                                                                       |
|                                                                                    |  Odour                   | Strong           | None                      | <b>100% ↑</b>   |                                                                                       |
|                                                                                    |  Settling                | Poor             | Excellent                 | <b>100% ↑</b>   |                                                                                       |
|                                                                                    |  Electricity Consumption | High             | Reduced                   | <b>20-30% ↑</b> |                                                                                       |
|                                                                                    |  Compliance              | Not Achieved     | Achieved                  | <b>100% ↑</b>   |                                                                                       |
| <b>BEFORE</b>                                                                      |                                                                                                             |                  |                           |                 | <b>AFTER</b>                                                                          |



Nanozyme BET-ETP-7003 delivers  
**HIGH PERFORMANCE, LOW COST & ECO-FRIENDLY SOLUTION**  
for Pharmaceutical Wastewater Treatment



HIGH POLLUTED  
INFLUENT



NANOZYME  
APPLICATION



MICROBIAL  
DEGRADATION



CLEAN & SAFE  
DISCHARGE

## KEY TAKEAWAYS

-  Superior Pollutant Removal
-  Cost Effective
-  Stable & Healthy System
-  Regulatory Compliance
-  Sustainable Operations
-  Better Tomorrow



# BIONICS ENVIRO TECH

INNOVATIVE MICROBIOLOGICAL SOLUTIONS  
FOR A CLEANER TOMORROW



## CONTACT US BIONICS ENVIRO TECH

90950 00090

95663 76690

82202 27745



drparams2014@gmail.com



bionicsenvirotech@gmail.com



info@bionicsenviro.com



www.bionicsenviro.com

Let's Build  
Sustainable  
Pharmaceutical  
Manufacturing  
*Together*



### Head Office

2/185, Ram Nagar,  
Vaaikalmedu,  
Perundurai Main Road,  
Erode 638052.



### Corporate Office

No.1, GST Road,  
Thailavaram, Potheri,  
Chennai 603203.



SCIENTIFIC  
SOLUTIONS



SUSTAINABLE  
TOMORROW



TRUSTED  
RESULTS



DEDICATED  
SUPPORT