

## THE NEW ERA of PET Tray Recycling

## ES PROCESS Compatible with PP PET TRAY WASHING SYSTEM

Solution for PET/PP Tray & Clamshell Recycling Challenges



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**BoReTech**  
Plastic Recycling Solution

## BREAKING TECHNICAL BOTTLENECKS IN PET TRAY RECYCLING

The ES Process Tray Washing System by Boretech overcomes bottlenecks by delivering four core technological advances, driving process efficiency and innovation in PET and PP tray recycling.



1



### HIGHLY COMPACTED

Highly-compacted bales prevent complete material loosening and impurity removal.

### THOROUGH MATERIAL LOOSENING

High-efficiency de-baling and pre-washing system ensures thorough loosening of highly-compacted bales.

2



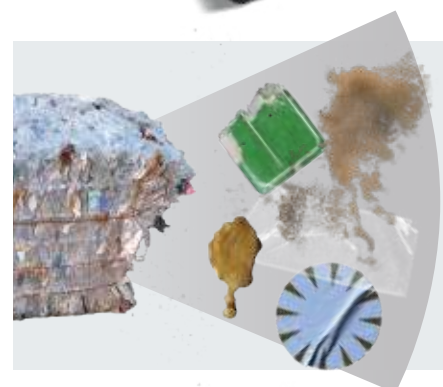
### EXCESSIVE ADHESIVE LABELS & GLUE

Removal challenges of excessive adhesive labels & glue.

### INTENSIVE HOT WASHING

>90% removal and separation rate of adhesive labels and impurities.

3



### COMPLEX MATERIAL COMPOSITION

Complex material composition, high impurity content.

### MEGA ASPIRATOR

Film labels and flakes are separated with >99% accuracy and <1% flake carryover rate.

4



### GREATER BRITTLENESS

Low yield rate because of material's brittleness in nature.

### ENHANCED YIELD

The patented dewatering technology avoids damage to materials with near "0" material loss.

## SMART MODULAR TECHNOLOGY TAILORED TO YOUR FEEDSTOCK CHARACTERISTICS

unlocking cutting-edge recycling for PET / PP tray & clamshell through customized recycling process.

PET tray flake quality meets food-grade rPET standards, compliant with **FDA** & **EFSA** requirements:

Flakes with Adhesive < 2000 ppm      PVC Content < 50 ppm



### De-baling & Pre- hot Washing

The innovative mechanical + thermal de-baling process overcomes traditional physical limitations, loosening highly compacted tray bales while pre-washing and thoroughly de-baling the materials.

This enables effective downstream automatic sorting. The module features a water circulation system removing impurities for inline recycling.

- ✓ **ENHANCED DE-BALING EFFICIENCY**
- ✓ **MATERIAL INTEGRITY ASSURANCE**
- ✓ **ENERGY-SAVING CONFIGURATION**



### UTILITY PARAMETERS

| Utility             |                 |               |
|---------------------|-----------------|---------------|
| Required Area       | Installed Power | Manpower      |
| 1800 m <sup>2</sup> | 1190 KVA        | 7people/shift |

| Average Energy Consumption Per Ton Flakes |             |          |                    |
|-------------------------------------------|-------------|----------|--------------------|
| Water                                     | Electricity | Steam    | Compressed Air     |
| 1.5 m <sup>3</sup>                        | 240 kW/h    | 0.5 tons | 3.2 m <sup>3</sup> |

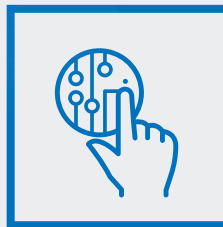
### OPTIPLANT SMART FACTORY SYSTEM

#### Bridging Industry Pain Points:

By integrating hardware and software, data analysis, and real-time monitoring, OptiPlant directly addresses unstable production, escalating quality issues, high operational costs, and delayed decision-making.

#### Core Value:

It ensures more timely and transparent information flow, guarantees the efficient and continuous operation of the washing line, increases output, optimizes quality, reduces costs, and enables precise decision-making.



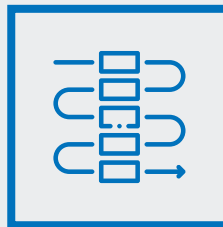
End-to-End  
Intelligent Control



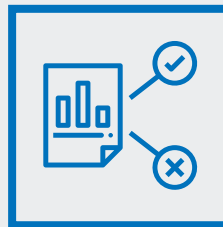
Enhanced  
Efficiency & Quality



Optimized  
Operational Costs



Transparent  
Material Flow



Data-Driven  
Decision Making

### Wet Crushing

Utilizing wet crushing technology, this process intensively washes materials during crushing while significantly reducing fine generation, minimizing raw material loss, and extending crusher blade lifespan.

Featuring a patented low-loss design, the centrifugal dryer minimizes mechanical impact on materials to prevent fragmentation. This achieves virtually zero fine generation during extended operation, while adjustable residence time ensures optimal dehydration.

- ✓ **WET CRUSHING TECHNOLOGY**
- ✓ **MATERIAL LOSS REDUCTION**
- ✓ **ENHANCED DE-WATERING EFFICIENCY**



### Intensive Hot Washing

This module delivers thorough, intensive washing and friction against the material, achieving 25% higher impurity removal over typical systems. It fully removes large adhesive labels from trays' surface. The integrated inline detergent circulation system separates adhesives and impurities via filtration, and the detergent is for inline recycling.

- ✓ **DEEP CLEANING**
- ✓ **THOROUGH ADHESIVE REMOVAL**
- ✓ **DETERGENT CIRCULATION SYSTEM**



### High-speed Rinsing

The high-speed rotating shaft generates intense turbulence, removing residual alkali and micro-adhesives from the material. The long flotation path ensures complete separation of floating impurities.

- ✓ **POWERFUL RINSING**
- ✓ **EXTENDED FLOTATION PATH**
- ✓ **ADVANCED PURIFICATION**



### Flake Sorting & Packing

The Mega Aspirator employs multiple channels to remove 99% of film labels with high sorting efficiency and low flake carryover rates.

Residual colored flakes and other materials are then removed through color and material sorting.

- ✓ **AUTOMATIC SORTING**
- ✓ **EFFICIENT LABEL SEPARATION**
- ✓ **WEIGHING & PACKING**

