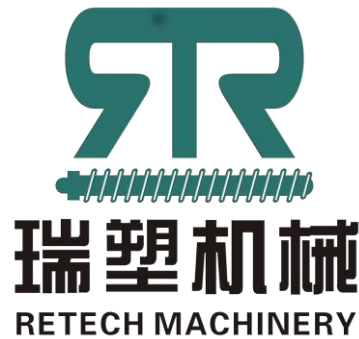


HDPE PP Bottle Recycling Solution



Overview

- HDPE/PP Bottle Recycling Solution is a complete turnkey recycling system for post-consumer rigid HDPE and PP plastic bottles & containers. The whole line integrates pre-sorting, label removal, crushing, multi-stage washing, sink-float separation, rinsing, dewatering and drying. It converts contaminated waste bottles into clean dry HDPE/PP flakes, ready for pelletizing, injection molding, blow molding and profile extrusion. Since HDPE and PP share similar density, mixed HDPE & PP rigid flakes can be processed together without density separation, which simplifies the recycling process and lowers investment cost.

Applicable Materials

- HDPE bottles: milk bottles, laundry detergent bottles, jerrycans, oil containers
- PP rigid containers: plastic buckets, crates, food boxes, bottle caps



Full Process Flow

- **Pre-sorting & Feeding** Manual or automatic sorting to remove metal, glass, PET, PVC and other foreign impurities. Belt conveyor feeds bottles continuously.
- **Label Removing** Rotary label remover strips paper and plastic labels; air blower separates waste labels.
- **Bottle Crushing** Rigid plastic crusher cuts whole bottles into uniform HDPE/PP flakes.
- **Friction Washing** High-speed friction washer scrubs flake surfaces to remove glue, printing ink, dust and light oil stains.
- **Hot Caustic Washing (Optional for heavy oil contamination)** Hot alkaline washing tank (80–90°C) dissolves stubborn grease and sticker residues to achieve higher flake cleanliness.
- **Sink-Float Separation** HDPE/PP flakes float on water; heavy impurities such as sand, stones and metal sink to the bottom and are discharged.
- **Multi-stage Fresh Water Rinsing** Rinse off residual alkali and fine dirt to improve flake purity.
- **Dewatering & Hot Air Drying** Centrifugal dewaterer removes most surface water; hot air dryer further reduces moisture. Final moisture $\leq 1\%$.
- **Flake Collection** Clean dry HDPE/PP flakes are collected for granulation or direct reuse.

Core Advantages

- **Process mixed HDPE & PP together:** No extra density separation equipment required, save cost.
- **Modular configuration:** Add hot washing unit or metal detector according to raw material condition and target cleanliness.
- **Efficient decontamination:** Multi-stage washing system removes oil, glue and label residues effectively.
- **Circulating water filtration system:** Recycle washing water, reduce water consumption and operating cost.
- **PLC centralized automatic control:** Stable continuous operation, low labor input and easy maintenance.
- **Customizable capacity:** 500kg/h ~ 5000kg/h available.

Key Units:

Bale Opener



Twin shaft shredder



Key Units:

Grinder



Hot Washer



Key Units:

Floating washer

Friction washer



Key Units:

Dewatering machine Zigzag Separator

