

Application example for PET-bottle recycling starting off with baled material

Bale breaker:

Pressed bottle bales are opened to release single bottles



Discharge- and sorting conveyor

Bottles are manually sorted and transported to the downstream equipment.

Metal detector bridge:

For protection of the granulator.

Granulator:

For size reduction, down to a particle size of approx. 10 mm. The granulator is designed for wet operation, which means that a water mist is added to minimize the wear of the granulator.



Discharge screw :

PET flakes are collected together with the circulation water, for transport to the following intensive washer.

Intensive washer:

For cleaning of the size reduced material. The flakes are transported to the center of the machine, by using a feeding screw. On step one of the cascade designed rotor (shown on the picture below) the flakes are drained and accelerated step by step. This gentle product treatment ensures a thorough cleaning. A blower is not required due to the rotor speed and the special designed rotor configuration. A continuous cleaning device cleans the outer screen surface as well as the inner housing without additional water injection.



Separation tank:

For separation of Polyolefins (PE/PP caps and labels) from the PET flakes. Due to the long residence time of the material in the tank a high degree of separation is achieved. By adding process water (hot water with chemicals) the flakes are preheated which results in a first separation of glues from the material. A screen in the discharge screw prevents hot process water from being transported to the hot wash unit.



Hot wash System :

The PET flakes are now treated with a further water-chemical mixture. A good cleaning result is achieved due to the long period of time the bottles flakes remain in this water-chemical mixture. In the downstream draining screen the flakes and the water are separated. Chemicals and floating contaminates are now separated in the downstream friction washer and separation tank. In order to be able to re-use the water-chemical-mixture, left-over scrap like glue and paper labels are separated by a rotary disk filter. The process water tank is designed for intermediate storage and preparation of the process water: heating and mixing of water with chemicals. To minimize power loss, all necessary plant components of the hot wash system are insulated.



Final Treatment:

The recovered, high quality flakes are finally dried in a mechanical and thermal dryer. Depending on the application the flakes are then transported to a silo or a big bag station, or may be transported to a downstream screening- or color separation system.

