



Lianguan

machine

Lianguan Washing Lines

**Modular Washing Lines for Post-Consumed
Polyester (PET) Bottles**

Capacity: 300-3000kg/h

Leading recycling solutions from China



A typical washing line

- A modular system: according to the required degree of cleanliness for the final product there is a choice of different components that can be supplied
- Simple structures for simple applications
- Complex structures for complex applications

Procedure steps in PET-bottle recycling

Preparation of PET bottles

Debaling

A screw shredder or a debaling drum breaks down the pressed bales into single bottles.

Label remover

Bottle cuttings are separated from film and paper labels in the air stream.

Prewashing of bottles

With the help of warm and cold water coarse contamination is partly removed in a washing drum or screw (alternative to

Manual and metal separation

Manually separate the foreign materials

With a magnet or a detector most foreign metal bodies are separated.



Size Reduction

Wet grinding

A wet granulator size-reduces the bottles while the wash water removes paper and foreign body contamination from the flakes.

Separation of dirty water

The wash water from the granulator is separated from the PET flakes.

Separation in water

Density separation step

In the water bath or with a hydro cyclone a light fraction (mostly polyolefin) is separated from the heavy fraction (mostly polyesters).



Hot washing step

Material storage basin / preheating

The flakes are heated to the temperature of the hot washing step.

Intensive washing and dispersion

The flakes are thoroughly washed in hot water, soda and detergents; glues, ink and oil are dissolved.

Separation according to density

In a poaching tank, remaining polyolefin and floating glues are separated from the polyester.

Separation of the suds

The hot wash water with the detergents in it is separated from the flakes.

Treatment of the suds

The hot wash water is enriched with lye and detergents.

Clean rinsing

The clean flakes are rinsed in water in order to obtain a neutral pH value.

Intensive washer and spraying washer

As a compliment to separation tank to remove the suds from the flakes



Retreatment of flakes

Mechanical dewatering

The flakes are dewatered with a centrifuge

Thermal dryer

The flakes are dried to the required residual moisture with a thermal heater

Cyclone silo

Separate the remaining light foreign materials with blower and store the crystallized flakes

Bag system

Store the flakes in bags for reuse



Water Treatment

Water collection, screening

The dirty water is collected in a pit and any contamination larger than appr. 0.1 mm is removed.

Sedimentation

The screened water is stored in a sedimentation basin for the sedimentation of light contamination; the result is circulation water.

Storage

The mechanically treated circulation water is stored.

Treatment of fines

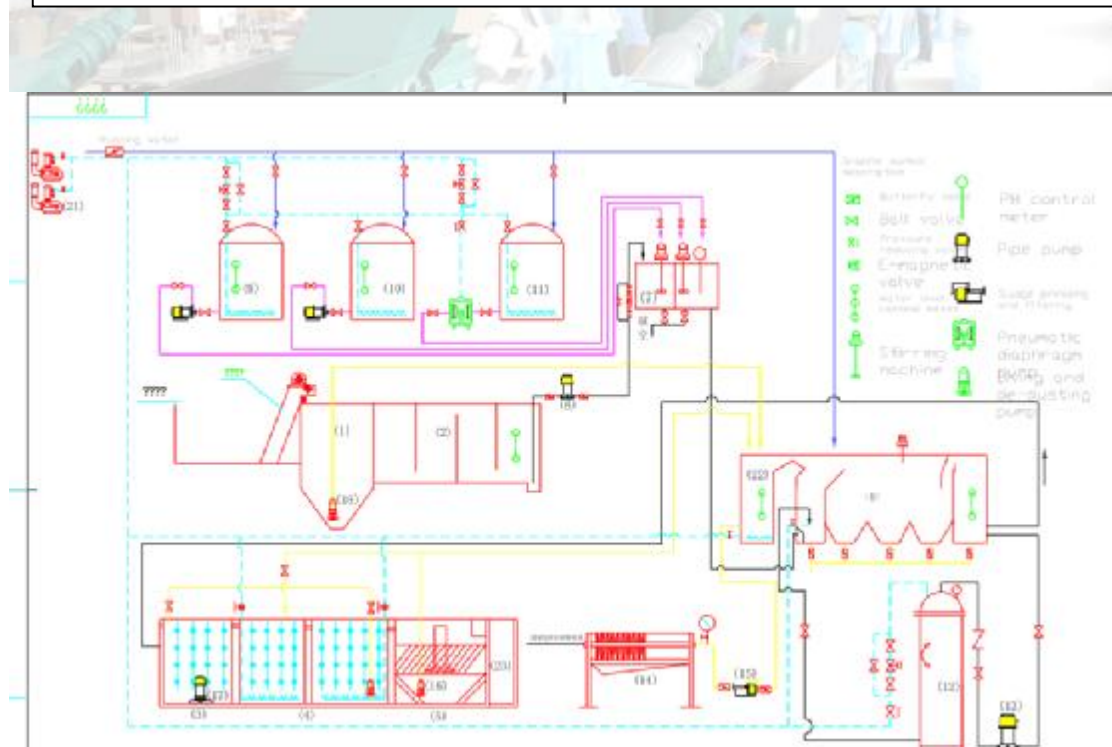
In a chemical or physical water treatment plant

Reconveying into the plant

A pump conveys the circulation water back into the plant.

Neutralization (waste water)

Decrease of the pH value according to the regulations for public water treatment.



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- ✚ These functional units represent possible procedure steps when PET bottles are recycled
 - ✚ They are selected according to the frame parameters of the feed material and the desired final product when such a plant is designed.
 - ✚ The single functional units are combined with conveying systems (belt conveyors, conveying screws, elevators, blowers, pumps) appropriate to the specific nature of the product and in relation to their location. Type and volume of the necessary conveying systems are determined in respect to the project.



LIANGUAN also manufactures and supplies lines:

- Ø For agricultural film, bottles, waste bins, post-consumer plastic waste and waste from car batteries and casings.
- Ø Pelletizing lines
- Ø EPS/EPP/EPE recycling lines
- Ø Mixers and compounding system
- Ø Please ask for more information via:

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