Water

What is water?

Water is a colorless, odorless and transparent liquid found in all living thing which is responsible for the transmission of useful substance in the body.

In another word, Water is a basis of all living things. Chemically it contains two atoms of hydrogen and one atom of oxygen. It comprises 75% of the earth total land mass.

Sources of Water

Water can be found in the following ways:

PHYSICAL & NATURAL SOURCES OF WATER

* Rain
* Well
* Stream
* Spring

CHEMICAL SOURCES OF WATER

Burning of Hydrogen in the presence of Air

H2(g) + O(g) => H2O(l)

Flow diagram of purified water bottling

The source of raw water is ground water. The major auxiliary materials are polyethylene terephtalate (PET) bottles with pilfer proof caps, labels, polypropylene rolls and different chemicals required to sanitation, disinfection and other purposes. Some of them are; Polypropylene for wrapping bottles, Caustic Soda, Dive rite Deformer, Common salt, Brill tak,Filter candle, Glue, Hydrochloric Acid, Hypochlorite, Largo Medicated, P3 special, P3 stabilon, P3 Ferisol, Porcelain ring, Silica Gel, Sulphuric Acid, Filter paper, Manganese Greensand and Everite

The processing technologies of mineral water are more or less similar. The major difference arises from the type of bottles, glass or plastic. The glass bottles are normally reused, about 6 to 7 times before they are discarded.

The type of plastic used for bottle making is known as polyethylene terephtalate (PET). They are thin and shatter-proof containers, with glass-like transparence and exceptional strength which results in increased safety.

Each type of bottling has its own advantages and drawbacks. The glass bottles, for example, are heavier, i.e., costly to transports, are brittle and have danger of breakage and need be washed thoroughly. On the other hand, they are reusable. Therefore, it has lower production cost. The PET bottles have some drawbacks such as relatively high production cost and larger factory floor area for their manufacturing. However, they are lighter in weight and thus cheaper for transportation less damaged while filling and easy for handling. Therefore, either of the alternatives can be used based on the preference of the project owner. In this study the plastic bottle has been considered.

The production and bottling of purified water in PET bottles involves processes like raw water storage and treatment, filling and capping, labeling and wrapping.

The major operation in water storage and treatment unit include water color removal, raw water pumping and storage, chemical dosage, filtration using different types of filters, ultraviolet water disinfection ozone generation with recirculation system.

After proper water treatment, the PET bottles are automatically conveyed and transferred to the rinsing rotor where they are subject to rinsing jets. Then the bottles are transferred to the filling and capping rotors. After labeling and sealing, bottles are transferred to the discharge conveyor.

The production process does not have any adverse impact on the environment.