PICKLING PLANTS

Pickling plants are industrial facilities used for the chemical process of pickling, which involves the removal of surface impurities from metal parts, such as steel or iron, using an acidic solution.

Components

1. Acid storage tanks

Used to store the pickling acid, which is typically a solution of hydrochloric or sulfuric acid.

2. Acid circulation systems

Pumped through a series of pipes and nozzles to distribute it evenly over the metal parts to be pickled.

3. Pickling tanks

Pickling tanks filled with the acid solution. The tanks may be made of plastic or lined with acid-resistant materials to prevent corrosion.

4. Rinse tanks

The metal parts are rinsed with water to remove any remaining acid and prevent further corrosion.

5. Fume scrubbers

Pickling process are captured and treated using fume scrubbers to prevent environmental contamination.

Principle

1. Surface preparation

The metal parts to be pickled are typically cleaned and degreased to remove any surface contaminants.

2. Acid solution preparation

The pickling solution is typically a mixture of solid acids, such as hydrochloric or sulfuric acid, diluted with water to the desired strength.

3. Immersion

Immersed in the pickling solution for a period, typically ranging from a few minutes to several hours, depending on the type and thickness of the metal.

4. Neutralization

Rinsed with water to remove any remaining acid, then neutralized with sodium bicarbonate or other alkaline substances to prevent further corrosion.

5. Waste treatment

The spent pickling solution containing acids and metal impurities is typically treated before disposal to prevent environmental contamination.