

## Water Treatment in the Industry

In manufacturing companies, waste water occurs during the manufacturing process which is significantly contaminated and polluted, as for example:

- ▶ waste water from stainless steel pickles
- ▶ polluted drilling emulsions
- ▶ galvanic or cyanide-containing waste water

Especially in the metal processing industry, companies are constantly faced with the challenge of the disposal of the water from the metal pickling which means considerable effort.

Here are innovative, economic and sustainable solutions important.

### Solution

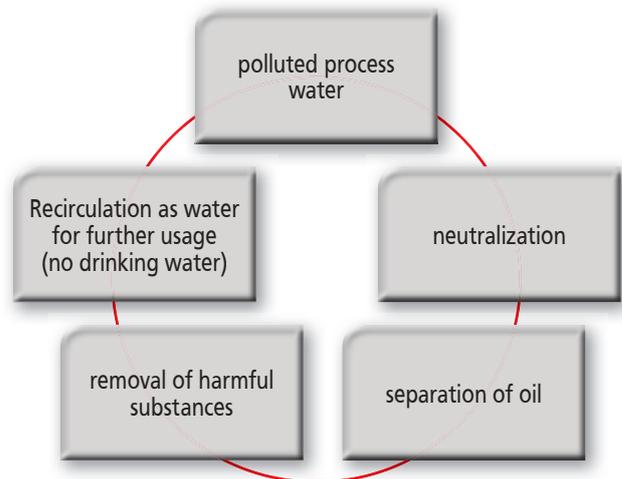
As specialists in development, manufacture and commissioning of industrial waste water treatment plants, we are able to design customized solutions that enable secure purification and recirculation of process water into the production cycle.

The modular construction ensures a system which is specifically tailored to the pollution or contamination level. By fully automatic dosing the right amount of substances is always used, and operator errors avoided - the basics for optimal results.



### The operating principle

The cleaning principle is presented on the example of waste water treatment from weld seam cleaning by metal pickling. Depending on the requirements it can be adjusted to each individual production line.



The raw water at the end of a metal pickling tracking contains also hydrofluoric acid and oil. The pH is between 1.5 and 3.0 – it means it is acidic. Therefore, each contact must be avoided.

#### 1. Treatment Stage: Neutralization

In the section of the neutralization, the waste water is pumped from the raw water tank in the neutralization tank. Lime milk is added to raise the pH to about pH 7 (= neutral). If the pH rises too high, raw water is replenished.



The newly formed flakes will then be separated in the following settling process of the raw water. These flakes are filtered by emptying the container and the water is returned in the raw water tank.

#### 2. Treatment Stage: Separation of oil

The pH-neutral raw water is directed into the oil separator by gravity drain. The oil from the production process is then separated from the raw water. After the passage of the oil separator, the absorption takes place.

#### 3. Treatment Stage: Absorption

In the absorption cycle free fluoride ions are bound first and then the heavy metals are removed.

#### 4. Treatment Stage: nitrate/nitrite exchanger

In the last stage, the water is treated in a nitrate/nitrite exchanger and can now be directed back into the production process as industrial water. Absorber and exchanger are partially regenerative.



## Kunststofftechnik Weißbach GmbH

For 20 years, the medium-sized family company manufactures customized plastic solutions.

Based on the highly trained professionals as well as the constantly modernized machinery manufacturing could be continuously expanded. Originally specialized in plants and swimming pool applications, the processing of semi-finished plastics to technical parts, vessels and equipment for the manufacturing industry was driven forward.

Today, more than 50 employees produce in Gornau a wide range of components, containers up to complex large-scale systems for machine and plant engineering, medical and environmental technology and the semiconductor industry.

Our own development department is working on innovation and efficiency. This know-how, the internal design office as well as the technically and technologically advanced manufacturing guarantee a comprehensive and high quality service to customers. Also more and more international customers rely from the idea to the finished product „made by KTW“.

## Advantages

- ▶ Creation of closed material cycles through the recirculation of process water in production cycle
- ▶ Protection of the environment
- ▶ Reduction of the disposal expenses by about 90 % at medium load
- ▶ Consistently high water quality
- ▶ Reduction of health risks for employees
- ▶ Time and cost savings
- ▶ Saving of resources

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