

Very
CONTAMINATED
WATER

+

Our MAGIC
(Patented cleaning
process)

=

CLEAN DRINKING
WATER



WATER FOR EVERYTHING

INDUSTRY ° AGRICULTURE ° PHARMACY ° FOR LIFE

- mine waters
- cooling waters
- washing boxes (car and machine washes)
- petrochemical industry
- pharmaceutical industry
- synthetic fibers and textil
- leather industry
- for production of beer
- energy sector
- **clean quality drinking water**





Water for industry, energy and agriculture

Introduction

As with any product, the quality of treated water depends on the quality indicators feedstock to the raw water. The resource requirements of water, with respect to their qualitative indicators are difficult to formulate, especially because they interrelation determining quality of the surface. The groundwater is very complex. When assessing the quality of the raw water is measured not only in terms of technology, but also of hygienic. This is the point of view in terms of the consequences of technological overlap. In terms of technological achievements effects and requirements for quality parameters of treated water can estimate the effectiveness of individual files and finishing parts.

Natural water therein include a wide variety of materials of different properties and characteristics. These can be present both in the liquid or solid phase and both organic and inorganic origin. Natural water creates in the physical dispersion systems. According to the particle size of these divided into coarse, colloidal dispersions and analysis. In terms of degree of dispersion systems are divided into monodisperse and polydisperse.

Inorganic substances in natural waters occurring clays, bentonite, kaolin and other minerals. The particles of minerals is characterized by a negative electric charge. It increases with increasing pH of the reaction water.

Organic natural substances often found in the waters. It is all about living or dead organisms and filamentous organisms. Of the organic compounds are found in natural waters humic substances.

Water management of industrial plants

Water belongs to essential means of industrial production. To produce the required different amounts of water of different qualities. Also, the use of water for industry varies. According to the application for individual purposes we distinguish water:

- Cooling (plants, energy)
- Operating Technology
- Power (boiler plants, heating plants, energy)
- For health purposes





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- Fire
- For other unspecified purposes

As water resources are used most sources of surface and ground water or water taken from the public water supply.

The amount of water

Specific operating water needed is the amount of water required to produce a unit amount of the goods or raw materials. Water management balance in terms of processed goods are specified requirements for water resources in terms of possible donations.

The quality of water needed

Quality of water for industry depends on the type of production and its use. For some industries, it is necessary that the water in the final product was bacteriologically safe (food), others require water to the defined chemical composition, other then the corresponding quality such distilled water (pharmaceuticals, electronic industry, the production of certain chemicals).

Water demand for the petrochemical industry

When processing oil is high consumption of water both for cooling and one for technological purposes. Water has its qualitative indicators conform to the requirements of not only production, but also the requirements for cooling water.





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Water for pharmaceutical industry

The required amount of water and its quality indicators are quite different. For some production of the water must be distilled water clarity.

Synthetic fibers

The water consumption for the production of synthetic fibers is significant. It is not only about water technology directly associated with the production, but also for water cooling. Water quality indicators in their composition must be conformed to specific production.

Water for textile industry

The amount of water is determined by the nature of the textile operation of its complexity, the nature of the feedstock and the requirements for the final product. Water quality indicators of their composition should correspond to the requirements which are imposed on the operating procedures and the purposes for which water is to be used.

Water for leather industry

Water consumption and the quality depends on the processing of hides and skins

Water for starch plants

The amount of water consumed corresponds to the individual production stages. Water quality must comply not only health, but also its composition is the production.





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Water consumption for the production of beer

These are separate processes, namely:

- Malting
- Production of beer

Specific water consumption for malt quality is adequate based on the unit of measurement of the processed barley. Water is required of a high quality. Water quality for beer production is very important, since water forms 85 to 95% of the product. Particularly high requirements are imposed on the composition of the water and its quality characteristics

The quantity and quality of water for the meat industry

Water consumption for the industry fluctuates considerably. Water is used to clean animal, a steaming, washing, processing, and is also part of the product. Quality indicators on the health of water depends on the specific manufacturing process and its use.

The quantity and quality of water for canning

Water consumption depends on processing operations on the raw materials. Also quality indicators and wholesomeness of water must meet the requirements and purposes.

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The demands for quality of water

An essential role for the supply of industrial water has the quality of water used for manufacturing processes. Depending on the desired quality and characteristics of the water, the water for its use in industry divided into the following categories:

- Water cooling - the temperature is crucial. The water within the recirculation circuit cools. Cooling circuits include water fountain recirculation and complementary.
- Water in this category is used in indirect contact such as cooling or transport medium. The water may contain a reasonable amount of suspended solids and the corresponding temperature. The permissible amount of suspended solids in the water and its temperature is determined for each product.
- This category is comprised of water supply for complex industrial plants. In such water and decomposition processes underway.

For that category of water quality, the water may be corrosive to the construction and construction materials.

In terms of the needs of water for industrial plants of various quality indicators for various uses are for water treatment is carried out in several stages. Water from the source (raw water) is adjusted to a quality that meets their indicators predominating specific needs of consumption. Requirements for the subsequent treatment of the water, based on specific requirements of use, cleanliness and safety.

Water for Energy sector

Water for these sectors is drawn primarily from surface water sources. The composition of these waters especially in terms of organic matter, suspended solids of different origins and dissolved salts is inappropriate. For such a treatment the desired water quality is required by a multistage finishing equipment.





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Pre-treatment

For pre-treatment of the water are selected such technologies and methods for separation of ensuring the separation of solid phase from the liquid phase. For the separation of the solid phase, depending on its nature can occur either way without the use of chemical reagents - mechanical means or by suitable methods using suitable chemicals, which are pollutants forming colloidal dispersion is transferred to a separable solid phases.

Pretreatment of raw water to the layout of these connected in sequence following:

- Raw water (solved consumption of resources and water transport)
- Preliminary treatment
- Coagulation process

- Flocculation
- Separation
- Accumulation modified (for more specific regulations - make-up water)
- Oxidation Potential

Auxiliary equipment for technological line Water Treatments include:

- Heating of the raw water
- Lime economy
- Lime saturation water
- Economy clots

Operational control processes Water Treatments:

- Mechanical filtration of surface water





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- Coagulation Filtration in the acidic environment
- Sour clarification with two-stage separation
- Clarification to the pre-flocculation
- Decarbonisation lime
- Deironing and manganem
- Alkalic clarification

Transport water exchangers

Water entering the ion exchangers has to be clean, free from mechanical impurities, suspended solids and colloidal particles.

IONEX - ion exchangers

A suitable combination of ion exchangers is achieved by deionization and desalination of water. Ion exchangers are divided into active groups according to their fiction:

- Cationites - weakly acidic (carboxylic acid or strongly acidic)
- Anionites - weakly or strongly basic, strongly basic

Water softening:

To soften the water used strong acid cation exchanger.





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Decarbonization of water:

Decarbonization includes removing ionic and nonionic forms of carbon dioxide.

Deionization and demineralization of water:

Deionization means the removal of all cations of strong acids. Weak acids are not removed. Water treatment is a two-staged. The first stage employs strong acid cation exchanger which removes any water from the cations exchange for hydrogen ions. The water after treatment contains a mixture of free mineral acids. At the second stage of water treatment on a strongly basic type is a mixture of free acid is neutralized.

When demineralisation as a second stage of water treatment is used strongly basic anion exchanger in hydroxide form.

Demineralization station concept is based on the composition of the input - the clarified water requirements for the final quality of the treated water.

Water for agriculture

This is mainly for the treatment of water used to disperse and drip irrigation in confined spaces - greenhouses. The degree of modification is determined by the desired quality and purity of water based on the technical requirements for irrigation systems and cultivation requirements for a specific production. In addition to requirements for qualitative indicators of irrigation water is also treated water for hydroponics.





Thank you for the
opportunity to present.
Contact our company.

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