Innovation expert clean rooms

DESIGN AND INSTALLATION OF CLEAN ROOMS

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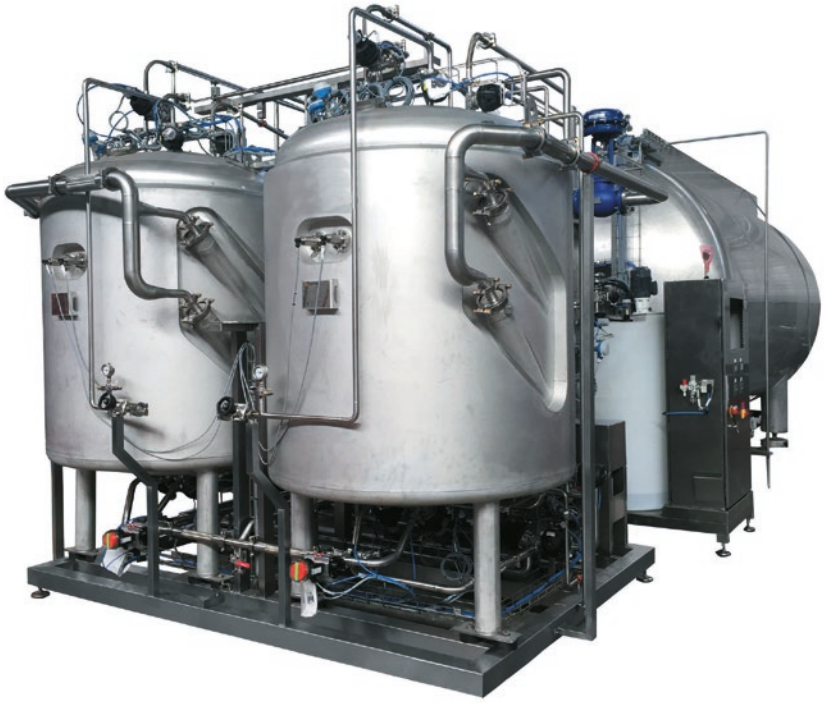
WASTEWATER DECONTAMINATION DEVICE

Biologically hazardous wastewater is generated during research in various research centers and laboratories, medical institutions, vaccine production, etc. In all such cases, there is a risk of contamination of the wastewater by pathogenic microorganisms. In accordance with the requirements of the legislation, infected wastewater must be treated at thermal wastewater disinfection plants before being discharged into the sewer. For these purposes, it is optimal to use installations for thermal sterilizing wastewater treatment. Such installations are designed for wastes contaminated with biological agents of I-IV pathogenicity groups to ensure the operation of:

- Veterinary institutions, vivariums;
- Infectious diseases hospitals and departments;
- Microbiological laboratories for product quality control;
- Research centers and production facilities dealing with virology, bacteriology, epidemiology, biotechnology, genetic engineering, vaccine and serum production; The design, composition and operation of the unit comply with the requirements of the following regulatory documents of the Russian Federation:
- SP 1.3.3118-13 "Safety of work with microorganisms of I-II groups of pathogenicity (hazard)";
- SP 1.3.2322-08 "Safety of work with microorganisms of III-IV groups of pathogenicity (danger) and pathogens of parasitic diseases";
- TR CU 032/2013 "On safety of equipment operating under excess pressure";
- as well as most of the sections and points of GOST 31598-2012 “Large steam sterilizers. General technical requirements and test methods".

The design and principle of operation of the decontamination unit completely exclude any contact of contaminated wastewater with the premises and personnel, as well as the possibility of draining untreated wastewater into the sewer. Contaminated wastewater is fed into a storage tank designed for the daily volume of wastewater and equipped with control sensors for filling. Then, in an automatic mode, fixed doses are fed into the sterilization container. The organic residues contained in the effluent are disintegrated in the grinder. The sterilization cycle includes filling the sterilization container, heating the liquid by direct steam injection to the sterilization temperature, holding at the sterilization temperature and pressure (135°C, 3.5 atm, 90 minutes), cooling to a temperature of no more than 35°C, and draining the sterilized effluent. The process of accumulation of effluents, filling the sterilization container, sterilization, cooling and draining is carried out automatically, according to a given program. The control system monitors the operating state of all elements of the installation, documents the process, and stops it in case of emergency situations. If necessary, it is possible to switch to manual control of the process. The process of wastewater treatment is visualized in the form of diagrams and graphs on the control room monitor. Wastewater decontamination units supplied by INEX provide guaranteed decontamination of hazardous liquid biological waste. The supplied system is simple and safe to operate, the equipment is fully automated, performing full control of cleaning cycles with self-diagnostics. To increase reliability, the decontamination unit consists of two parallel complete cycle lines, which can be controlled and operated independently or together. In the normal mode, the lines work, periodically changing each other. The equipment, which has been tested in our factory, can be put into operation immediately upon switching on. The installation is quite compact and can be equipped with additional technical options depending on the work task.



Designed for disinfection of biological waste and waste water before discharge into the sewer - the destruction of pathogenic microorganisms of I-IV hazard groups. Sterilization of effluents is carried out by heat treatment, varying the process time and heating temperature. Wastewater decontamination plants consist of:

- Storage capacity;
- Block of pumps for wastewater injection;
- A holding tank for keeping hazardous waste at a given temperature and under a certain pressure;
- Heat exchangers;
- Set of pipelines;
- Control devices;
- Control panels. The models of the devices differ in the operating mode (continuous or intermittent) and the volume of productivity (from 70 liters to 12,000 liters of wastewater per day).

Here you can order a waste decontamination system according to an individual project, which takes into account:

- Type of institution;
- Type of contamination;
- Volumes of incoming wastewater per day;
- Group of pathogenicity of microorganisms;
- Uniformity of wastewater flow;
- Location of equipment.