

Rules for handling water, wastewater and substances hazardous to water

Preamble

Water protection is operational environmental protection. As an indirect discharger, the Leibniz University Hannover is obliged to keep the wastewater it produces clean from substances hazardous to water.

Economical use of water

Everyone is obliged to use water sparingly for economic and ecological reasons. Thanks to numerous technical saving opportunities, water consumption at Leibniz University Hannover has been significantly reduced in recent years and kept at this level.

In addition to the measures for saving water that everyone is familiar with from their private household, additional measures are taken at the university:

- Check water-consuming devices regularly for leakages. Water losses due to technical defects are avoidable.
- Report defects such as dripping taps, non-functioning toilet flushes, defective seals and valves immediately to the fault reporting center ☎ 4440 if you are unable to rectify the defects yourself.
- Cooling circuits must be used for cooling (if available). When purchasing new appliances, look out for integrated cooling systems. Devices with air cooling are preferable for cost reasons. If you wish to cool or already cool with fresh water on a regular basis, please contact the Facility Management Department. The possibility of installing a cooling circuit will then be checked.

Behaviour in case of malfunctions and emergencies

☎ 4440	Fault reporting center for technical services	Malfunctions and breakdowns
☎ 3925	Central Operating Unit Waste Management (ZBE)	Binding agent for leaked substances (for emergencies only)
☎ 112	Fire department	If required, notify the authorities in the event of a leak of substances hazardous to water

Preventive measures against damage caused by lack of water or water leaks

To prevent damage to and by water-consuming devices, equipment and systems etc., the following instructions should be observed:

- If possible, valuable devices that could be damaged by a lack of water should be equipped with low-water cut-outs or similar devices that switch them off when the water pressure drops or there is no water.

- Likewise, systems that are connected to the water network and run unsupervised, especially as an endurance test, must be secured against unintentional leakage of water at the water supply. This can also be achieved, for example, by moisture sensors on the floor in conjunction with magnetic valve control on the water supply.
- Users of rooms with a water connection are jointly responsible for the water pipes. In the event of frost, precautions must be taken to prevent the water pipes from freezing (e.g. close windows and do not turn off the heating).
- Water connections must be of a permanently fixed type. Hose installations are only permitted with hose clamps. Installation with garden hoses and corresponding connections is not permitted and will be considered gross negligence in the event of damage.

In an emergency, it can be helpful if the user knows where the gate valves for the water pipe are located and how access is possible so that the fire department, for example, can be given information.

If you suspect that disproportionately high water consumption is occurring in your area, please also contact the Facility Management Department. The same applies if you discharge large quantities of unpolluted water (e.g. cooling water) or if a lot of water evaporates or seeps away. This information is important for calculating the wastewater price, which can be significantly reduced as a result.

Installations

Installation work on all water pipes may only be carried out by the Facility Management Department or on its behalf, as this is the only department that has the necessary concessions.

An improper connection to the pipe system is punishable, as used water can enter the drinking water network due to possible suck-back processes from the connected systems, resulting in dangerous contamination. For this reason, service water pipes were created in individual buildings, which may only be used as such and do not have guaranteed drinking water quality.

Wastewater system at Leibniz University Hannover

Usually, the university's rainwater and wastewater are mixed and fed into the municipal sewer system and then into the sewage treatment plant.

The wastewater from some chemical laboratories first flows into neutralization plants. In these systems, only the pH value of the wastewater is adjusted to a pH value between 6.5 and 10 by adding acid or lye. Neutralization systems cannot "neutralize" heavy metal contamination such as lead, cadmium and nickel or solvents. It is, therefore, strictly forbidden to contaminate the laboratory wastewater with such substances.

The neutralization systems are usually equipped with solids and light liquid separators in which contaminated material settles as sludge. These sludge traps must be emptied at regular intervals. If the sludge is too contaminated, it must be disposed of in a complex and expensive process.

Do not dispose of solid or liquid waste in wastewater – not in the laboratory basin or floor drain, not in toilets and not in rainwater gullies!

Substances hazardous to water

Substances hazardous to water are defined as solid, liquid and gaseous substances that can cause permanent or significant adverse changes to water quality.

The potential water hazard of a substance is indicated by its classification in the water hazard classes (WGK) nwg (not hazardous to water) via WGK 1 (slightly hazardous to water) to 3 (highly hazardous to

water). The water hazard class is indicated in the safety data sheets and sometimes also on the labels of the containers. Examples of substances that are highly hazardous to water (WGK 3) are mercury, waste oils of unknown origin and silver nitrate.

If water-polluting substances are stored in quantities that exceed manual use (e.g. over 200 liters of heating oil or fuel), this must be reported to the Central Environmental Protection Officer (Tel. 3989, petra.schmiedner@zuv.uni-hannover.de). They will then check whether a report or a suitability assessment by the authorities responsible is required.

This applies both to systems in which substances hazardous to water are only stored, e.g. in heating oil tanks, as well as to systems in which a substance hazardous to water is used as a medium, e.g. in large hydraulic systems. It should be noted in particular that the hydraulic hoses usually have to be replaced after 6 years.

The following minimum requirements always apply:

- The retention capacity must be 10% of the storage quantity or at least the volume of the largest container must be able to be collected.
- No collection volume is required for storage units whose largest container does not exceed a volume of 20 l. Nevertheless, it must be possible to retain drip losses. However, the substances must be stored either indoors or outdoors in permanently tightly sealed containers that are protected against damage and resistant to the effects of the weather. Damage repair must be possible with simple operational means and must be set out in the operating instructions.
- Storage on drip pans approved under water legislation (test mark important!) can prevent water-polluting substances from leaking into the sewage system.

Regular inspections are important for the safety of systems and machines. This is regulated in the German Ordinance on Industrial Safety and Health (BetrSichV) as well as in the German Occupational Health and Safety Act (ArbSchG). Here, the risk assessment to be prepared by the facility determines when which work equipment is to be inspected.

Compliance with maximum concentrations in wastewater

Non-degradable substances such as heavy metal compounds, various poorly degradable organic compounds and other non-biodegradable substances cannot be eliminated from the water by conventional wastewater treatment plants as they are usually only present in very low concentrations and can accumulate. Pollution of the water with such substances must therefore be prevented at the point of origin. It is prohibited to dilute or mix wastewater in order to circumvent the discharge bans or to comply with the limit values (dilution ban).

The limit values of the wastewater regulations of the State Capital of Hanover in the valid version must be complied with. Exceeding limit values is not permitted and will be prosecuted under regulatory or criminal law.

In particular, according to the regulations, the following may not be discharged:

Sand, rubble, slag, ash, sweepings, coffee grounds, cat litter, garbage, textiles, plastic films, coarse paper or other solid materials, even if they are shredded; synthetic resin, latex, latex residues, cement, hydrated lime, plaster, mortar, bitumen, tar, liquid or later hardening waste, suspensions, dispersions;

Phenols, solvents, petrol, minerals, animal and vegetable oils and fats, liquid manure, slurry, dung, silage leachate, cold cleaners containing halogenated hydrocarbons or which cannot be retained in the light material separator, emulsions, kitchen and slaughterhouse waste, blood and whey;

Rules for handling water, wastewater and substances hazardous to water

Acids and alkalis, halogenated hydrocarbons, cooling liquids and agents, photo bleaching baths, photo developers, photo fixers, hydrogen sulphide, hydrocyanic acid, hydrocyanic acid and its salts, carbides that form acetylene, zinc, heavy metals and their salts, pesticides, pharmaceuticals, infectious substances and genetically modified material.