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Safe handling of hazardous substances

Every day, countless quantities of cutlery, crockery, pots and pans are used and hygienically cleaned afterwards. Special cleaning agents are required for this purpose, but special attention must be paid to them because they are often hazardous substances.

Hazardous substances are substances or mixtures that can be dangerous to humans or the environment or have harmful effects.

There are some basic rules to follow when handling hazardous substances:

For on-site implementation, a workplace analysis or a hazard analysis must be carried out. The latter can be carried out as part of a HACCP concept. In addition, there are numerous supporting materials available, e.g. from Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (BAuA). Technischen Regeln für Gefahrstoffe (TRGS) also supports the evaluation of the hazard potential.

When handling the corresponding cleaners, the safety-relevant information is to be taken from the respective safety data sheet and the operating instructions.

For the application, it is decisive whether and how the concentrates are worked with, for example when changing containers, or with the application solutions prepared from them. In the safety data sheet, a distinction is made in this respect in chapter 8.2 and the respective safety-relevant information is provided. This includes, for example, the use of chemical-safe protective gloves (EN 371) and the wearing of safety goggles.

In the case of mechanical dishwashing, the container change of the cleaner can be used as an example: At the beginning, chemical-resistant gloves (EN 371) are to be put on and protective goggles, if necessary an apron. When removing the suction lance from the cleaning agent container, make sure that no splashing occurs. If drops of the concentrate have got onto the canister and onto the floor when changing the container, the residues must be immediately removed with a damp cloth. If drops have even reached the user, utmost haste is required to reduce this chemical attack as intensively as possible with the use of water on the corresponding body surface. An immediate visit to the doctor - especially in the case of an injury to the eyes or generally to the facial area - is urgently recommended. It is obligatory to carry the corresponding safety data sheet with you!

The hazard pictograms on the first page of the safety data sheet are supplemented by the respective signal words. For commercial dishwashing detergents, these are usually "Danger" or "Caution". The signal word "Danger" generally indicates a particularly high hazard potential. The operating instructions also provide important information on the handling of the respective products. Here, additional information is provided on how the user is to behave if an accident actually occurs.

Products containing hazardous substances may only be stored in the containers provided and approved for this purpose.

When preparing application solutions (unless mixed automatically with dosing equipment), the water must always be added first and then the product concentrate, as otherwise explosive splashing could occur as a result of the reaction heat generated.

As a matter of principle, different products must never be mixed:

A very well-known and also dangerous example is the pouring together of chlorine-containing products and acids. This produces extremely toxic chlorine gas!

With organic substances, sulfuric acid and nitric acid react with strong heat development, which can lead to coking or spontaneous combustion (fire hazard!). This releases highly toxic nitrous gas or toxic sulfur dioxide.

Caustic soda and sodium bisulfite solutions can also form highly toxic gas.

Concentrated acids and alkalis are highly corrosive to the skin, eyes and mucous membranes, causing, among other things, irreparable eye damage, rupture of the stomach and esophagus (if ingested orally), irritable cough and vomiting. Vapors are generally highly irritating to mucous membranes of the eyes and respiratory system. In higher concentrations, they may cause choking due to swelling of the larynx and cause injury to the lungs.

Reactions with metals or other substances can produce highly toxic gas, e.g. brown nitrogen oxides, sulfur dioxide or chlorine gas. Solvents are primarily absorbed through the respiratory tract and the skin and have an irritating effect on the skin, eyes and mucous membranes. They also have a strong skin-degreasing effect. In the case of solvent poisoning, intoxication, nausea, vomiting, drop in blood pressure, lung injuries, respiratory paralysis and even death are typical consequences.

With various solvents, special toxic and/or long-term effects such as blindness (methanol), liver and kidney damage, cardiac arrhythmias, damage to the blood and nervous system, fruit damage and allergies can occur.

When inhaled, fine dust enters the bronchi and lungs unhindered.

In addition to the marked hazardous properties corrosive, toxic, oxidizing, etc., solids can react in many ways with acids, alkalis or combustible substances. This can cause very toxic gases and fires.

When storing hazardous substances, it is forbidden to pour chemicals into drinking vessels, beverage bottles and vessels or containers that are intended for the storage of food or luxury goods or that can be confused with such.

The doors of the storage rooms (where hazardous substances are to be stored separately from other items) must be permanently marked with appropriate information. Access for unauthorized or untrained persons must not be possible!

Conclusion: The use of hazardous substances is necessary in view of the high levels of soil that will be generated, but anyone who works with such cleaning agents in the commercial sector must be aware of the danger - separate training courses are offered by the respective cleaning agent suppliers - and the appropriate safety precautions for cleaning. For the sake of your own health, it is imperative that you comply with this – no matter how hectic it may be in the kitchen!

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