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## ENVIRONMENTAL PROTECTION & WORK SAFETY

### SAFE COLLECTION AND DISPOSAL OF HAZARDOUS LABORATORY WASTE.

#### 10 THINGS TO LOOK OUT FOR!

Many laboratories work with hazardous substances. Waste with a hazardous content will therefore accumulate and must be collected and disposed of properly.

Our checklist gives you 10 important requirements to consider.

#### 1. PREPARE A RISK ASSESSMENT

Laboratory waste with a hazardous content is also a hazardous substance within the meaning of the Hazardous substance regulation (GefStoffV). This means it is mandatory to carry out a risk assessment. Activities involving hazardous substances, including the handling of laboratory waste, may not be commenced without a prior risk assessment, preparation of operator's instructions, and training of employees. Even before using a hazardous substance in the laboratory, its disposal must be considered, and appropriate safety measures are taken.

##### A standardized procedure for risk assessment:

- Obtain information
- Identify and assess hazards
- Determine suitable protective measures
- Check effectiveness
- Permanent consistent implementation
- Documentation

Pay particular attention to the specific instructions on risk assessments for laboratories according to section 3 of the Technical Rule for Hazardous Substances TRGS 526 "Laboratories". This Rule addresses special points for determining information and special requirements for laboratory personnel qualifications for example.

➔ [WWW.DENIOS-US.COM/FAQ-RISK-ASSESSMENT](http://WWW.DENIOS-US.COM/FAQ-RISK-ASSESSMENT)



#### 2. CHECK MEASURES FOR THE AVOIDANCE OF HAZARDOUS LABORATORY WASTE

In accordance with the requirement to minimize waste as well as for reasons of sustainability, you should try to reduce or avoid the generation of hazardous laboratory waste. In addition to a reduced risk of exposure, less storage space will be required, and disposal costs will be lower.

##### Possible approaches to waste prevention:

- Check whether substitution is possible, i.e., whether the hazardous substance used can be replaced by a substance with a lower hazard.
- Carry out laboratory activities on the smallest possible scale.
- Design experiments accurately to determine the quantities of chemicals needed.
- Only purchase the quantities of chemicals that are absolutely necessary.
- Consider waste when making investments.



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### 3. ALWAYS WEAR THE PRESCRIBED PERSONAL PROTECTIVE EQUIPMENT (PPE)

Do not carry out any activity with hazardous substances without suitable PPE. This also applies to the handling of hazardous laboratory waste. TRGS 526 prescribes the following minimum standards for laboratories depending on the exposure risk:

- Eye protection
- Protective gloves
- Respiratory protection
- Protective clothing

[WWW.DENIOS-US.COM/PPE-PERSONAL-PROTECTIVE-EQUIPMENT](http://WWW.DENIOS-US.COM/PPE-PERSONAL-PROTECTIVE-EQUIPMENT)

### 4. KEEP SUITABLE COLLECTION CONTAINERS AVAILABLE

Collection containers for hazardous laboratory waste must meet the following criteria:

- Warning, mixing is prohibited: hazardous waste must be collected separately so that hazardous reactions are excluded. A separate collection container must be kept for each type of waste.
- Only containers that are suitable in size and design for the collection of each type of waste and that can be safely transported by employees should be provided.
- Select the containers about the material, tightness, and basic suitability for the respective waste characteristics. The containers must withstand the chemical and mechanical stresses expected from the contents.

- Pointed, sharp or breakable objects may only be placed in puncture-proof and dimensionally stable containers. (Note: these containers may only empty by tipping them. Suitable protective gloves must be worn.)
- Do not use containers normally intended to hold food or drink for storing chemicals. Food and drinks must not be stored together with chemicals.
- Waste bins for off-site transport must comply with the regulations on the transport of dangerous goods (UN transport approval).
- Also think about the disposal of contaminated aids: for example, cleaning cloths can take on the hazardous properties of the absorbed liquid and must be disposed of accordingly.

[WWW.DENIOS-US.COM/DISPOSAL-EQUIPMENT](http://WWW.DENIOS-US.COM/DISPOSAL-EQUIPMENT)

### 5. MARK THE COLLECTION CONTAINERS

- Mark the collection containers in the laboratory permanently and clearly according to chemical legislation (hazard designation and hazard symbols).
- It is also advisable to list exactly which chemicals must not be placed in the collection containers.



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## 6. CHECK WHETHER WASTE MATERIALS CAN BE PRE-TREATED

For some wastes, a simple treatment (e.g., neutralization) can reduce the hazard potential. Caution: neutralization of reactive chemicals may only be carried out by qualified personnel and in strict compliance with the respective safety measures at a laboratory workstation or hazardous substance workstation.



## 7. CARRY OUT DISPENSING OPERATIONS SAFELY

- When filling collection containers, ensure that no dangerous concentrations of hazardous gases or vapors can enter the laboratory air. As with other laboratory work, a fume cupboard or hazardous substance workstation must be used when dispensing hazardous substances from drums, carboys, canisters, and other containers.
- Use funnels when dispensing into narrow-necked containers.
- Work over a laboratory spill tray and / or use a DENSORB absorbent fleece mat as a work surface to prevent any leakage that occurs from spreading freely on the work surface.
- Connect the collection container and funnel to equipotential bonding when dispensing flammable liquid hazardous waste. This avoids electrostatic discharge.

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[WWW.DENIOS-US.COM/DRUM-SPILL-CONTAINMENT](http://WWW.DENIOS-US.COM/DRUM-SPILL-CONTAINMENT)

[WWW.DENIOS-US.COM/SPILL-CONTROL](http://WWW.DENIOS-US.COM/SPILL-CONTROL)

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### 8. STORE THE LABORATORY WASTE SAFELY

- Position hazardous waste collection containers so that they do not interfere with normal laboratory work or create a hazard.
- Store the laboratory waste so that no dangerous reactions are possible if the containers are damaged. For example, depending on the risk assessment, space-saving fire-rated under bench cabinets can be used as temporary storage. Use an acid-resistant plastic inlay spill pallet if acids or alkalis are to be stored in hazardous material cabinets.
- Observe the requirements for combined storage according to TRGS 510.

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### 9. DISPOSE OF LABORATORY WASTE REGULARLY

- The disposal of hazardous waste must be carried out at intervals so that the storage, transport, and destruction of these substances cannot lead to a hazard. According to TRGS 526, workplaces must be checked regularly, but at least once a year, for hazardous waste and this must be disposed of to prevent the formation of contaminated sites.
- Waste that cannot be disposed of by third parties due to its chemical properties must be safely destroyed in the laboratory or converted into a form suitable for transport. Special operator's instructions must be drawn up for this purpose.

### 10. CLEAN EMPTIED CONTAINERS THOROUGHLY

- Before you can reuse empty containers that contained hazardous substances, they must be carefully cleaned.
- If possible, only reuse containers with similar substances to counteract potentially dangerous reactions.
- Pre-clean containers and utensils sufficiently before placing them in the sink. This prevents people carrying out rinsing work from meeting dangerous residues.
- Before using the cleaning agent, make sure that no dangerous reactions can occur with the residual contents of the containers.

## FURTHER INFORMATION – LINKS.

### LABORATORY EQUIPMENT: WORKING SAFELY IN THE LABORATORY

Laboratories work with a wide variety of hazardous substances in a wide variety of ways. The right combination of measures can reduce hazards effectively. DENIOS offers an extensive and comprehensive product range for laboratory safety.

[WWW.DENIOS-US.COM/LABORATORY-SUPPLIES](http://WWW.DENIOS-US.COM/LABORATORY-SUPPLIES)

### SAFELY STORING DISINFECTANTS AND SANITISERS

Laboratories often work with disinfectants and sanitizers. Most disinfectants are flammable liquids due to their ingredients. These must be stored in accordance with fire protection regulations and to ensure water protection. DENIOS offers the right solutions.

[WWW.DENIOS-US.COM/DISINFECTANTS](http://WWW.DENIOS-US.COM/DISINFECTANTS)