

Chapter 5 Use of Chemical Substances

1. Use of general chemical substances

Article 13 of the University Rules stipulates the use of chemical substances as follows.

Article 13 of the Rules (Use of Chemical Substances)

1. When using a Chemical Substance, Chemical Substance Managers shall carry out the following matters.
 - (1) Chemical Substance Managers shall inform Chemical Substance Handlers that it is necessary to obtain information about toxicity and hazards of chemical substances from Safety Data Sheets (SDSs), etc.
 - (2) If a Chemical Substance is determined to be extremely toxic or hazardous, the Chemical Substance Manager shall endeavor to replace the Chemical Substance with any other chemical substance that is less toxic and hazardous.
 - (3) Chemical Substance Managers shall implement measures (e.g., personal protective equipment, local exhaust ventilation) to prevent people's exposure to, and airborne contamination by, Chemical Substances and inspect local exhaust ventilation before Chemical Substances are put into use.
 - (4) Chemical Substance Managers shall prohibit smoking and consumption of food and beverages at operation sites and place relevant notices in conspicuous locations.
 - (5) Chemical Substance Managers shall prohibit any person except authorized personnel from entering operation sites and place relevant notices in conspicuous locations.
2. When using or handling Chemical Substances, Chemical Substance Handlers shall fulfill the following requirements.
 - (1) Check the Safety Data Sheet (SDS), etc. and understand the toxicity, hazards, etc. of the Chemical Substance before using it; and
 - (2) Avoid handling Chemical Substances in poorly ventilated areas.

When using and handling chemical substances, it is necessary to understand their toxicity and hazards. Read Chapter 3 carefully and understand the toxicity and hazards of chemical substances before handling and use. The hard-and-fast rule is "ensure safety by yourself."

At the University, the sign below must be displayed on the entrance side of rooms where chemical substances are used. Only authorized personnel can enter such rooms to prevent health impairment. Take care when entering the rooms.



Fig. 5-1 Sign of authorized personnel only

(1) Handling of general chemical substances

Regardless of requirements of laws and regulations, the following rules must be observed basically when handling chemical substances.

- [1] Carefully check SDSs, etc. to determine the properties of chemical substances before use.
- [2] Wear a white robe and protective equipment (e.g., glasses, mask, gloves).
- [3] When taking out a chemical substance from a container, hold the label side (on which the chemical name is indicated) so that the chemical name does not fade.
- [4] Handle chemical substances that emit toxic vapors in a fume hood. If a fume hood is unavailable, ventilate the laboratory properly.
- [5] If a chemical substance taken out from a bottle, etc. remains unused, do not return such chemical substance into the bottle, etc. to prevent contamination. Dispose of the leftover chemical substances. When taking out a chemical substance, avoid leftovers as far as possible.
- [6] After taking out a chemical substance, close the lid of the container each time.
- [7] If a chemical substance drips down the surface of the container, make sure to clean the container immediately (e.g., wipe off the chemical substance).
- [8] In principle, do not leave a reagent bottle, etc. on the table unless it is being used. Return an unused bottle to the storage location.
- [9] Do not leave a medicine spoon, glass rod, pipette, etc. in a container that contains chemical substances.
- [10] Do not touch or smell chemical substances directly. Perform wafting to smell a chemical substance.
- [11] Select an appropriate type of apparatus depending on the chemical substance (e.g., glass, plastics, stainless steel).
- [12] Do not eat, drink, or smoke near chemical substances.
- [13] Monitor the status of use of chemical substances in the surrounding environment.