

Experimental Liquid Waste [Liquid waste produced by education and research activities]

Items such as laboratory liquid waste resulting from educational, research, etc., activities containing chemical substances and liquid used to rinse containers containing laboratory liquid waste are to be treated as experimental liquid waste.



<Points to be aware of regarding washing containers>
Rinse containers containing hazardous solvent with methanol or acetone. For details, refer to Cleaning Manual.

The following chemical substances cannot be collected.

Contact the Environmental Safety Center.

Experimental liquid waste containing gunpowder, narcotics, radioactive substances, and with a risk of infection.

* Hazardous solvents: Any experimental liquid waste containing trichloroethylene, tetrachloroethylene, dichloromethane, carbon tetrachloride, 1,2-dichloroethane, 1,1-dichloroethylene, 1,1,1-trichloroethane, 1,3-dichloropropene, benzene, 1,4-dioxane

* If mixed with solid waste, filter out first. * When discharging liquid waste, be sure to measure the pH. * Store experimental liquid waste in a white two-way polyethylene container with the capacity of 10L or 20L designated according to categories of liquid waste.

Does it contain hazardous substances?

Containing hazardous substances

Hazardous substances are defined as those:

- Not allowed to be discharged into sewers by "Precautions in disposal" in SDS
- Subject to laws and regulations on chemical substances (refer to the designated laws and regulations concerning chemical substances management).
- Cannot be determined their harm or danger
- With $\text{pH} \leq 5$, or ≥ 9

*SDS stands for "Safety Data Sheet"

Not containing hazardous substances

To Sewer

Can be detoxified? • Neutralization

Perform detoxification processes.

After detoxified, disposed to Sewer

Is it classified as special waste liquid?

YES

Cyan Liquid Waste

Cyanide or cyanogen compound including heavy metal cyan complex salt should be alkalinized ($\text{pH} \geq 10.5$) and stored.

10 L

NO

Does it contain cyanogen?

YES

Mercury Compound Liquid Waste

Mercury compound other than that containing cyanogen compound. (Mercury compound liquid waste containing cyanogen compound should be treated as cyan liquid waste.)

10 L

NO

Does it contain inorganic mercury?

YES

Special Waste Liquid

Ethidium bromide, heavy metal liquid waste mixed with organic compound; liquid waste containing osmium, thallium, beryllium, organic phosphorus compound, organic mercury compound, PCB, dioxin, fluorine compound; concentrated acid (e.g. hydrochloric acid with a density greater than 6mol/L); concentrated alkali (e.g. sodium hydroxide with a density greater than 6mol/L) Should be individually stored

10 L

Special Treatment

Does it contain heavy metal other than mercury?
With $\text{pH} \leq 5$, or ≥ 9 ?

NO

Does it contain toxic solvent?

YES

Toxic Solvent Liquid Waste

Experimental liquid waste containing any of the following substances: trichloroethylene, tetrachloroethylene, dichloromethane, carbon tetrachloride, 1,2-dichloroethane, 1,1-dichloroethylene, cis-1,2-dichloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, 1,3-dichloropropene, benzene

10 L

NO

Is it categorized as special inflammable material?

YES

Special Inflammable Material

Experimental waste containing liquid whose ignition point is 100 degrees or lower at one atmospheric pressure, or, whose flash point is minus 20 degrees or lower and boiling point is 40 degrees or lower at one atmospheric pressure (They are restricted by Fire Service Act to be stored up to 10L per laboratory. e.g. diethyl ether, carbon disulfide, acetaldehyde, propylene oxide)

10 L

NO

Is it categorized as waste oil, or is it viscous?

YES

Waste Oil

Experimental waste with viscosity including heavy oil, machine oil, oil extracted from animals and plants. (light oil and kerosene should be treated as flammable liquid waste.)

10 L

NO

Does it contain flammable substances, and is the content 40% or more?

YES

Flammable Liquid Waste

Experimental waste containing flammable or inflammable liquid (excluding toxic solvent liquid waste, special inflammable materials, and waste oil) and the content is 40% or more.

10 L

NO

Non-Flammable Liquid Waste

Experimental waste containing flammable or inflammable liquid (excluding toxic solvent liquid waste, special inflammable materials, and waste oil) and the content is less than 40%.

10 L

[Incineration Treatment]

Does it contain toxic heavy metal?

YES

Toxic Heavy Metal Liquid Waste

Experimental liquid waste containing any of the following substances: chromium, arsenicum, selenium, cadmium, or lead

20 L

Does it contain heavy metal?

YES

Heavy Metal Liquid Waste

Experimental liquid waste containing heavy metal (other than those are classified as toxic heavy metal liquid waste, mercury liquid waste, or special liquid waste)

20 L

Does it contain heavy metal?

NO

Is it used as photographic developer?

YES

Photographic Developer

Experimental liquid waste used as photographic developer

20 L

Is it used as photographic fixer?

YES

Photographic Fixer

Experimental liquid waste used as photographic fixer

20 L

With the $\text{pH} \geq 9$?

YES

Alkaline Liquid Waste

Alkaline experimental liquid waste with the $\text{pH} \geq 9$

20 L

With the $\text{pH} \leq 5$?

YES

Acid Liquid Waste

Acid experimental liquid waste with the $\text{pH} \leq 5$

20 L

[Reduction, Neutralization, Coagulating Sedimentation] → Incineration Treatment