Handling Laboratory Waste

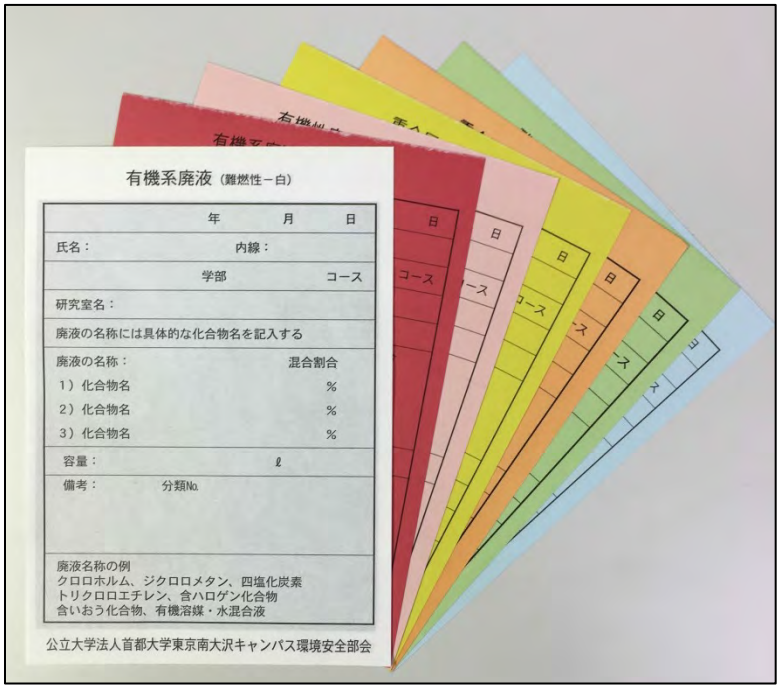
● Liquid waste

Do not pour waste solvents down the drain.

Store the waste solvents in the plastic tank.

Separate the waste solvents according to the flowchart (see p.5)

Waste tags



Waste tags

You need to fill out a waste tag to dispose of waste solvents. There are 7 types (colors) of tags.
Choose the correct tag according to the flowchart.

Waste tags and vinyl bags are distributed at the Environmental Protection Facilities.

- White: Halogen-containing liquid waste or Flame retardant organic liquid
- Red: Flammable organic liquid waste1
- Pink: Flammable organic liquid waste2
- Yellow: Liquid waste containing TOXIC heavy metals
- Orange: Liquid waste containing heavy metals
- Green: Acidic/Alkaline liquid waste
- Light blue: Cyanide containing liquid waste

Put the tag into the vinyl bag and tie it to the tank.

How to fill out waste tags

有機系廃液（可燃性１－赤）
Organic liquid waste (Flammable 1 – red)

① 2016 年 Year 1 月 Month 7 日 Day

② 氏名：Name XXXX 内線：Extension XXXX

③ XXXXX Urban Liberal Arts 学部 Faculty Division of Chemistry コース Division

研究室名：Laboratory name Laboratory of XXXXXXXXX

廃液の名称には具体的な化合物名を記入する
Provide specific compound names for the liquid waste to be disposed of.

④ 廃液の名称：Name of liquid waste 混合割合 Mixing ratio
１）化合物名 Compound name Acetone 60 %
２）化合物名 Toluene 20 %
３）化合物名 Hexane 10 %

⑤ 容量：Content 10 ℓ

備考：Remarks 分類No. Classification No. 5

⑧ Contains Pd, Ti, Ni

廃液名称の例
ベンゼン、ヘキサン、エーテル、アセトン
メタノール、エタノール、ブタノール
酢酸エチル、二硫化炭素、灯油、軽油

公立大学法人首都大学東京南大沢キャンパス環境安全部会

重金属廃液（橙）
Liquid waste containing heavy metals (Orange)

① 2016 年 Year 1 月 Month 7 日 Day

② 氏名：Name XXXX 内線：Extension XXXX

③ XXXXX 所属：Section Urban Environmental Sciences, Division of Applied Chemistry

研究室名：Laboratory name XXXXXXXXX Laboratory

廃液の名称には具体的な元素名を記入する
Provide specific compound names for the liquid waste to be disposed of.

④ 含有元素名を記入（含有量順に３種類）
３種類以上の場合は備考欄へ記入する
１）元素名：Element name Fe
２）元素名：Cu
３）元素名：Zn
Write names of elements contained. (3 types in the order of content)
If there are more than 3 types, write in the remarks section.

⑤ 容量：Content 9 ℓ

⑥ 濃度：Concentration Fe: 20mg/L, Cu: 10mg/L, Zn: 10mg/L

⑦ 廃液のｐＨを必ず記入する Be sure to indicate pH of liquid waste
ｐＨ：2

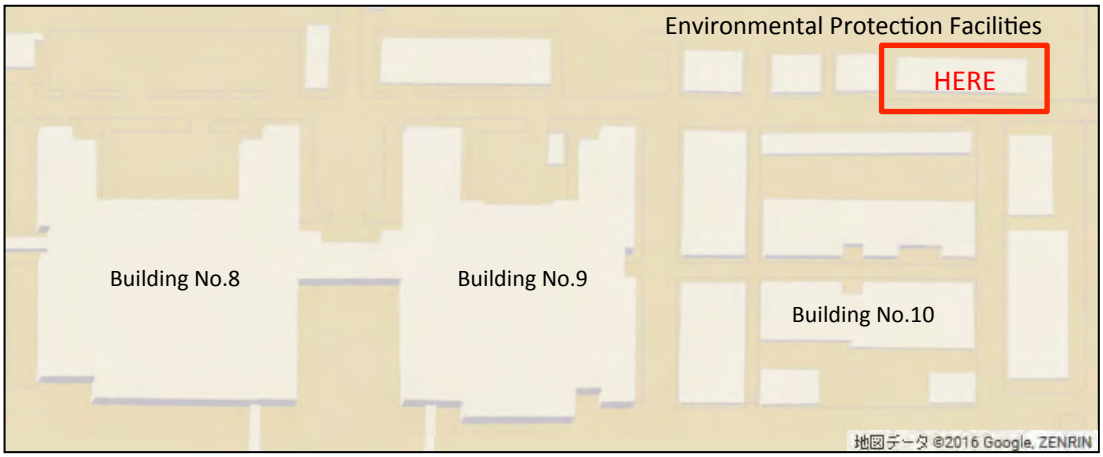
備考：Remarks 分類No. Classification No. 11

⑧ Contains HCl, H_2SO_4

廃液名称の例
Mn、Cu、Zn

公立大学法人首都大学東京南大沢キャンパス環境安全部会

① Date of carrying-in
② Name and Extension number
③ Your affiliation
④ Name of compounds or elements contained in the waste solvent
⑤ Amount of the solvent in the tank
⑥ Concentration of the waste solvent , if you know
⑦ Be sure to indicate pH of the waste solvent.
⑧ Classification no. (see pp.5-6) If there are more than 3 types of compounds or elements in the waste solvent, write in the column.



Bring laboratory wastes to the Environmental Protection Facilities between 2:00 pm and 4:00 pm on Thursdays.

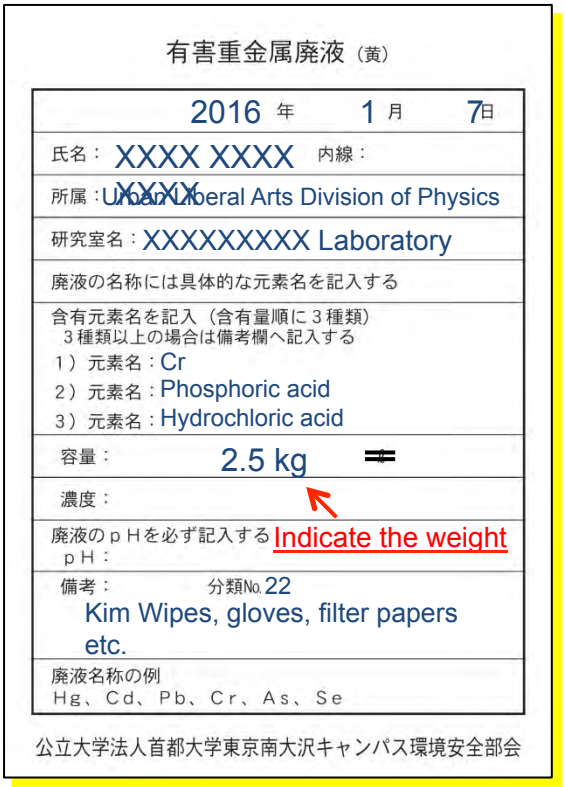
Handling Laboratory Waste

● Solid waste

Solid wastes are collected in the same manner as liquid wastes.

○ Filter papers, rubber gloves, etc., contaminated with chemical substances

Put the contaminated wastes in clear garbage bags to allow visual inspection.



有害重金属廃液（黄）

2016 年 1 月 7日

氏名：XXXX XXXX 内線：

所属：Urban Liberal Arts Division of Physics

研究室名：XXXXXXXXX Laboratory

廃液の名称には具体的な元素名を記入する

含有元素名を記入（含有量順に３種類）
３種類以上の場合は備考欄へ記入する

1）元素名：Cr

2）元素名：Phosphoric acid

3）元素名：Hydrochloric acid

容量：2.5 kg

濃度：

廃液のｐＨを必ず記入する Indicate the weight

ｐＨ：

備考： 分類No. 22

Kim Wipes, gloves, filter papers etc.

廃液名称の例
Hg、Cd、Pb、Cr、As、Se

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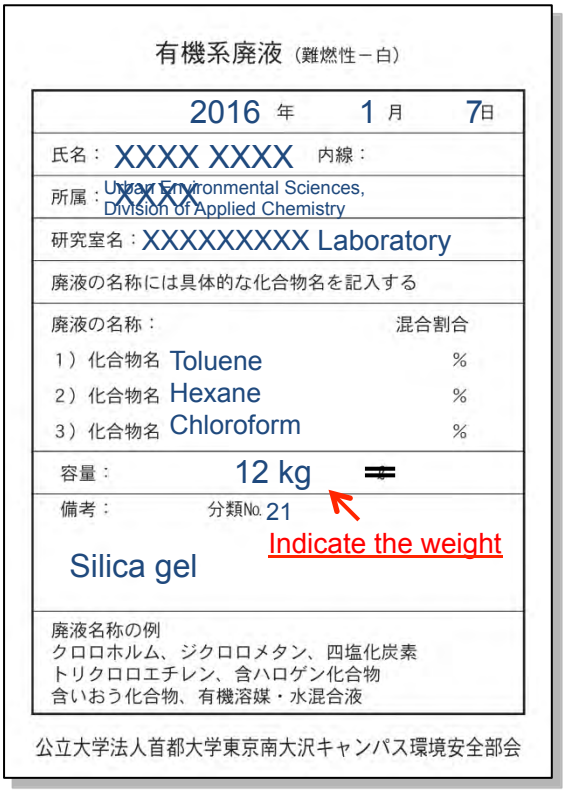
○ Desiccants such as silica gel, alumina, sodium sulfate, etc.

Separate the desiccants into types of substances and store them in the rigid containers respectively.



有機系廃液（難燃性－白）

2016 年 1 月 7日

氏名：XXXX XXXX 内線：

所属：Urban Environmental Sciences, Division of Applied Chemistry

研究室名：XXXXXXXXX Laboratory

廃液の名称には具体的な化合物名を記入する

廃液の名称： 混合割合

1）化合物名 Toluene %

2）化合物名 Hexane %

3）化合物名 Chloroform %

容量：12 kg

備考： 分類No. 21

Indicate the weight

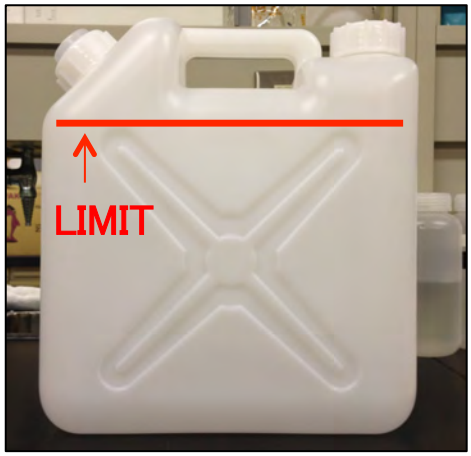
Silica gel

廃液名称の例
クロロホルム、ジクロロメタン、四塩化炭素
トリクロロエチレン、含ハロゲン化合物
含いおう化合物、有機溶媒・水混合液

公立大学法人首都大学東京南大沢キャンパス環境安全部会

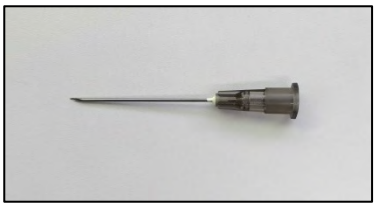
Points to Note

- Do not pour the liquid waste into the container more than eight tenths.
- Do not mix solids with liquid wastes.
- Organic acids like acetic acid are classified as inorganic liquid waste.
- Do not mix acid and alkaline solvents.



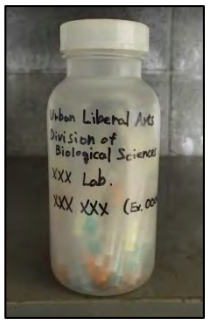
Needles and Syringes Disposal

Do not mix needles and syringes in solid wastes.
The waste tag is unnecessary to dispose of needles and syringes.
Indicate your section and name on the container.
Bring the container to the Environmental Protection Facilities for disposal.



Place the needles in a rigid container

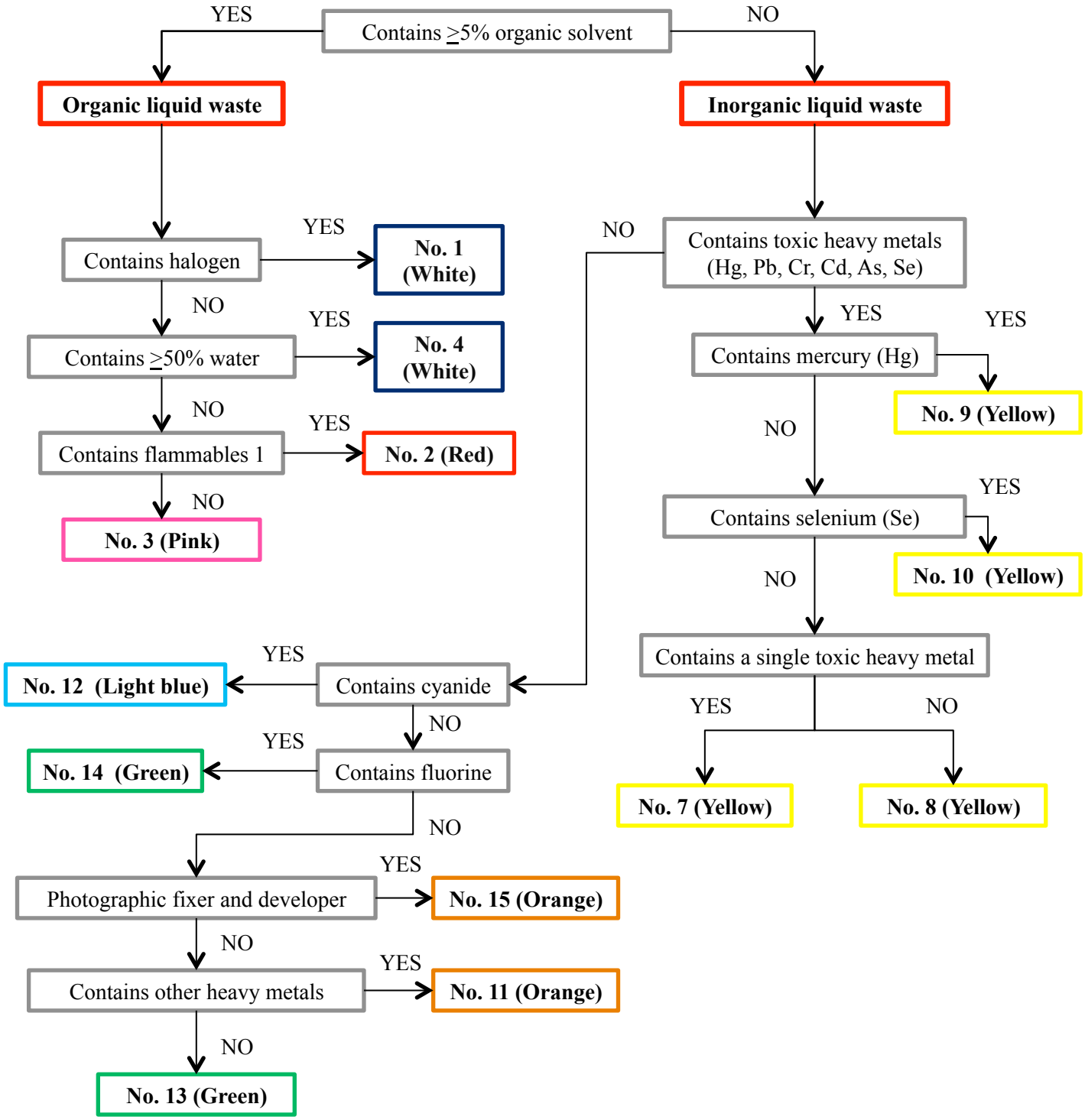
Sharps disposal container (infectious)



Plastic chemical bottle (non-infectious)

Place the syringes in a clear plastic bag

Classification chart for laboratory liquid waste



Caution!! Classification no. changes in the following instances:

*Organic liquid waste containing toxic or other heavy metals → No. 5
*Organic liquid waste with particularly strong odor → No. 6
*Nos. 7-10 mixed with organic solvent, etc. → No. 16
*No. 11 mixed with organic solvent, etc. → No. 17
*Nos. 13 and 14 mixed with organic solvent, etc. → No. 18
*Inorganic liquid waste with particularly strong odor → No. 19

Waste list and Tag colors

Large classification	Classification no.	Classification category	Tag color	Specific example
Organic waste	1	Halogen-containing solvent	White	Chloroform, dichloromethane, halogen-containing compounds
	2	Class 1 flammable solvent	Red	Benzene, ether, acetone, methanol, ethyl acetate, carbon disulfide, kerosene, light oil, other flammable solutions
	3	Class 2 flammable solvent (Waste oil)	Pink	Machine oil, cutting oil, grinding oil, heavy oil, vegetable oil
	4	Flame-retardant organic solvent	White	Organic solvent-water mixture, sulfur-containing compounds
	5	Toxic heavy metal contamination	White, red, or pink depending on the main constituent	Liquid waste containing toxic heavy metals or other heavy metals (with percent order)
	6	Malodorous		Liquid waste with particularly strong odor (especially acetic acid odor, pyridine odor, and putrid odor)
Inorganic waste	7	A single toxic metal containing	Yellow	Liquid waste containing either Cr, As, Pb, or Cd only
	8	Mixed toxic metal containing	Yellow	Liquid waste containing two or more toxic heavy metals
	9	Mercury-containing	Yellow	Liquid waste containing mercury
	10	Selenium-containing	Yellow	Liquid waste containing selenium
	11	Other heavy metal containing	Orange	Liquid waste containing manganese, copper, zinc, nickel, or other heavy metals
	12	Cyanide-containing	Light blue	Liquid waste containing sodium cyanide or cyanogen complex, etc.
	13	Acidic/alkaline	Green	Acidic or alkaline liquid waste (Do not mix acids with bases.)
	14	Fluorine-containing	Green	Liquid waste containing fluorine compounds
	15	Photographic fixer and developer	Orange	Liquid waste containing photographic fixer solution or developing solution
	16	Solution containing toxic heavy metals mixed with organic solvent, etc.	Yellow	Liquid waste containing toxic heavy metals mixed with organic solvent, etc.
	17	Solution containing other heavy metals mixed with organic solvent, etc.	Orange	Liquid waste containing other heavy metals mixed with organic solvent, etc.
	18	Acidic, alkaline, or fluorine-containing solution mixed with organic solvent, etc.	Green	Acidic, alkaline, or fluorine-containing liquid waste mixed with organic solvent, etc.
	19	Malodorous	Yellow, orange, light blue, or green depending on the main constituent	Liquid waste with particularly strong odor (especially acetic acid odor, pyridine odor, and putrid odor)
Solid waste	20	Materials contaminated with chemicals	Select from the tags shown above depending on the adsorbed/attached materials	Filter paper, gloves, and paper contaminated with chemicals
	21	Silica gel, etc.		Silica gel, alumina, sodium sulfate, molecular sieves, etc. (Do not mix.)