

## General rules for working with chemicals

Hazardous chemicals (toxic, corrosive, flammable etc.) are frequently used in the lab and are labeled with hazard symbols:



compressed gas



corrosive



explosive



environmentally damaging



irritant



oxidizing



flammable



health hazard

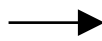


toxic

## General rules for working with chemicals

- Before you start working with a chemical substance, **inform yourself** about possible hazards and necessary precautions.
  - Read the material safety data sheets (**MSDS**).
  - A list of frequently used hazardous chemicals can be found in the **Institute's Laboratory Safety Guidelines**.
  - Additional information about hazardous substances can be found on the **SGU website**:

[www.sicherheit.ethz.ch](http://www.sicherheit.ethz.ch)



Documents:

factsheets on e.g. acrylamide, cryogenic liquids...

## General rules for working with chemicals

- Perform work with hazardous chemicals in a **fume hood** and wear a lab coat, safety glasses and gloves.
- **Organic solvents and acids** must be stored separated from each other in ventilated cupboards or in fume hoods.

## Disposal of hazardous chemicals

- **Organic solvents:** Chlorinated and non-chlorinated solvents must be collected separately in labeled containers.
- **Very toxic chemicals** (mercury, arsenic compounds, ethidium bromide etc.), acids, bases and heavy metals are collected in separate, properly labeled containers.

## Disposal of hazardous chemicals

- Full containers are brought to the **Special Waste Disposal Center:**

<b>HCI D276</b>	Tuesday, Thursday, Friday	1 – 4 pm (during semester)
	Tuesday, Thursday	2 – 4 pm (semester break)

<b>HPL D15.2</b>	1 <sup>st</sup> Tuesday each month	9 – 11 am
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**no flammable chemicals**

for on-demand appointments contact [sgu-sonderabfall@ethz.ch](mailto:sgu-sonderabfall@ethz.ch)

- If you are uncertain how to dispose of your chemicals, contact the Special Waste Disposal Team via [sgu-sonderabfall@ethz.ch](mailto:sgu-sonderabfall@ethz.ch)

## Shopping of chemicals in the D-BIOL shop (HPM) and the D-CHAB shop (HCI)

- Use a shopping basket to transport dangerous or liquid chemicals.

## First aid procedures for chemical emergencies

- **call 888**

### Contact with skin:

- Immediately remove contaminated clothing & flush skin with water for at least 15 min.
- Inform yourself about delayed effects (MSDS). Seek medical attention if necessary.

### Contact with eyes:

- Immediately flush eyes with water for at least 15 min using the eyewash station located at each sink. A second person should keep the eyes of the affected person open.
- Seek medical attention regardless of the severity of the incident. Go directly to the ophthalmic clinic of the University Hospital Zurich.

### Accidental injection:

- Wash area of injection with water and soap and seek medical attention.

## **First aid procedures for chemical emergencies**

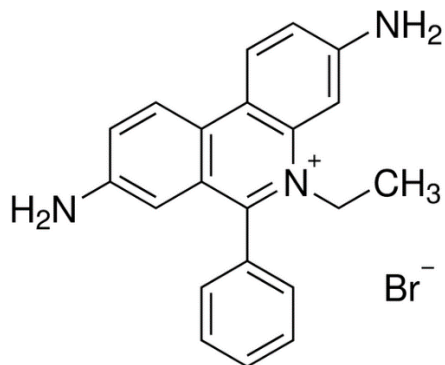
### **Inhalation:**

- If possible, close containers; increase ventilation of the area and move to fresh air.
- Seek medical attention if symptoms (e.g. dizziness, irritation of respiratory tract, headache) persist.

### **Ingestion:**

- Do not induce vomiting.

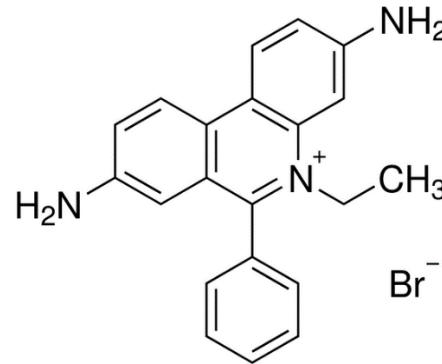
## Ethidium bromide (EtBr)



### When working with EtBr, follow these rules:

- All containers and dishes containing EtBr have to be **properly labeled**.
- EtBr working areas have to be clearly labeled and cleaned after each use.
- Wear disposable **nitrile gloves**.
- When carrying EtBr-containing gels around, you have to use a **closed plastic container**.
- The closed plastic container must be placed in a **tray**, which is labeled correspondingly.
- The **transport** of these trays is done **without gloves**.

## Ethidium bromide (EtBr)



- In every group one designated person is ensuring that all group members follow these rules.

**Group**

**Responsible person**

Ban

Marc Leibundgut

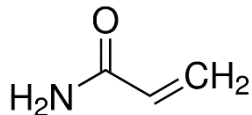
**Gels, buffers, consumables,... contaminated with EtBr or any other nucleic acid-binding dye (GelRed, SYBR Safe, ...)**



Special waste



## acrylamide



- is considered to be carcinogenic, mutagenic and toxic for reproduction.
- Measurements at the Universities of Heidelberg and Freiburg i.Br. have shown that when preparing acrylamide gels, the ambient air exhibits a significant contamination.
- Rules for working with acrylamide:
  - Handle acrylamide, and pour acrylamide gels, only in the fume hood.
  - Always wear gloves, lab coat and safety glasses.
  - Fully polymerized gels may be used outside the fume hood (provided that no other hazardous substances are used).
  - Store acrylamide stock solutions in ventilated cabinets.