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# *Health and safety Guide*

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For the Department of Green Technology

Faculty of Engineering, University of Southern Denmark

Information for employees and students

Please read this guide carefully

Further information is available on [www.sdu.dk/IGT](http://www.sdu.dk/IGT)

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### Alarm in case of fire or other accidents

In the event of an accident at IGT which requires assistance from the fire service, ambulance, or police follow the emergency plan's alert instructions, which are listed below:

- If possible, stop the accident
- Call 1-1-2 and state the following:
  - What is your name
  - What happened
  - Where do you to call from
- Evacuate the area if necessary
- Call 6550 8888 - Technical Service at SDU and inform about what has happened.

**The address of the TEK building is Moseskovvej 67, building 42 or Pavilion 5.**

For minor problems, such as lack of power, lack of ventilation, locked doors, stopped drains or similar problems, contact Technical Service at phone no 6550 8888.

If the problem is acute, call 6550 8888 else send an e-mail to [8888@sdu.dk](mailto:8888@sdu.dk)

Before starting work in the laboratory you must get an good overview of the room, the location of emergency showers, eyewash, and the firefighting material. Please note that fire hoses are located in the hallway.

Also check out the possible escape routes before starting work.

#### Other useful phone numbers

Poison information: Call Giftlinjen, phone no: 82 12 12 12

Chemical Emergency Response Guard: Phone no: 72 85 20 00 (24-hour)

Chemical Laboratory: Phone no:45 82 54 00

Odense Taxi: Phone no: 66 15 44 15

### Work-related injuries

Work-related injuries can be harmful effects of both a physical and a mental nature.

## SAFETY RULES

All work-related injuries must be reported to the Health and Safety Management on special forms provided upon request. The forms are forwarded to the National Board of Industrial Injuries and, if necessary, the Danish Working Environment Authority.

### Personal protective equipment

The department has:

- Gloves
- Hearing protection
- Safety glass
- respiratory protection

If special protective equipment's are needed, these can be requested. However, students must acquire their own lab coat and safety glasses. These can be purchased from the SDU Student Book shop.

The departments protective equipment's can be found in room no Ø32-508b-1, Chemical storage.

## Chemicals

All chemicals at IGT are registered in the online database Kemibrug, which can be found at [kemibrug.dk](https://kemibrug.dk). The database provides access to information on a wide range of chemicals for the preparation of the chemical risk assessment. In addition, labels for manufactured solutions can be printed.

All chemicals must be returned to the chemical collection. Toxic chemicals (labelled with Acute Toxicity, GHS06) must be stored in a locked cabinet or returned to the chemical collection immediately after use.

Remember to notify the lab technicians in case of lack of Chemicals.

The amount of flammable material (including solvents) must comply with the applicable Atex rules. In most cases, this means that you are allowed to work with up to 1L of flammable solvent in an **open** bottle. Larger volumes need to be handled in fume hood of ATEX class 2 where up to 5L can be handled. Those will be marked with an ATEX class 2 sign.

Before working with chemicals, you need to collect information about the danger of the substance and how to handle the substance.

A risk assessment shall be prepared for all processes and equipment **before the experiments are performed**. For students, the chemical risk assessment must be approved by the supervisor before starting work in the laboratory.

Material safety data sheets (MSDS) can be found online at: [www.kemibrug.dk](https://www.kemibrug.dk)

### General chemical management

Chemicals, materials, and other equipment are purchased by TEK Indkøb. Requests for purchases must be sent to [order@tek.sdu.dk](mailto:order@tek.sdu.dk).

The purchase must be approved beforehand by the supervisor before ordering. When ordering, please provide product no., product name, cas. no., the amount requested, and an account number.

**All solutions obtained must be marked with the following information:**

- Content
- Concentration specification
- Production date
- Warning symbol
- Name
- Class
- Responsible supervisor

Labels can be made with the help of Kemibrug.

All experimental set-ups shall be marked with identification notes located in all laboratories.

You are obliged to comply with the instructions given by the head of department or one of the health and safety representatives.

Glasses, either your own glasses or safety glasses, must be worn in all laboratories where chemicals are handled.

Smoking as well as eating and consuming beverages in the laboratory is prohibited and it is not allowed to bring these into the laboratory in bags or similar.

Do not store chlorinated compounds close to flammable solvents.

### Work in the laboratory

All tables and fume cupboards must be daily cleaned, and equipment and materials that are not used frequently must be removed.

Dirty glass equipment must be rinsed and placed in the dishwashing room.

Dirty glass equipment containing volatile chemicals must be stored in a fume cupboard.

## SAFETY RULES

Bags and outdoor jackets of any kind are not allowed in the laboratories.

Openable windows are escape routes and must not be blocked by large furniture or experimental setups.

At the end of a workday, make sure that the fume hood doors are closed, lights are out and all windows are closed and doors locked.

For students to access the laboratories, they must have passed the security course and completed the access note with the signature of all relevant laboratory responsible. Once obtained, the student card is activated with access to the relevant laboratories. The access runs for 1 semester.

The test must be passed once per semester.

It is not allowed to work alone in IGT laboratories outside normal working hours.

In addition, it is also recommended that you do not work alone in the laboratory during normal working hours. If you work in a laboratory with no view from outside or it is placed solitary it is also recommended to be two people in the laboratory.

For tasks with greater risk, e.g., working with explosives, toxic gases, larger quantities of acid or base, working on ladders, moving heavy things or similar, there must always be two people in the room.

It is important that these tasks/works are planned so that they can be carried out during normal working hours (8 AM - 5 PM).

If any questions or doubt please contact the IGT's [working environment committee](#).

## Waste

### **Wastepaper:**

Belongs in the ordinary office paper bins or black garbage bags.

### **Glass waste:**

Empty glass packaging, bottles etc. must be cleaned from chemical residues and hereafter placed in the glass waste containers placed in Affaldsskur Ø35-600-1. Hazardous chemical residues must immediately be properly destroyed by the user before the empty packaging is placed in the glass waste containers in Ø35-600-1.

Glasses and bottles of toxic chemical residues are collected together with laboratory waste and placed on the blue pallet in Ø35-600-1. Waste cans must be marked with waste group and check mark in pH value.

REMEMBER to state everything you know about the waste, i.e., all components are written in the components of the waste field.

## SAFETY RULES

When you are finished with the waste can, place it on the blue pallet in Affaldsrum Ø36-5-600-1, Door marked C.

**Needles, scalpels, and other pointed objects:** Must be placed in the yellow needle containers.

## SAFETY RULES

All chemical waste is sent for destruction at FORTUM. The waste is sorted by Fortum's sort key ([fortum.dk](https://fortum.dk)):

### Sort key

## Waste groups

O

Reactive waste (e.g. Hydrogen peroxide, Borate and perborate)

K

Waste containing mercury

Z

Waste not belonging in other groups (e.g. batteries, spray cans)

T

Pesticides

X

Inorganic waste (e.g. Hydrochloric acid, Potassium hydroxide)

A

The waste only contains oil (e.g. Fuel oil, Motor oil)

B

Waste containing halogens and sulphur (e.g. Chloroform, perchlorate)

C













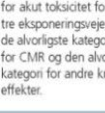





Waste with high content of energy (e.g. acetone, methanol)

H

Waste with a low content of energy (e.g. Varnish, lubricants and mixed organic and anorganic)



# SAFETY RULES

"GAMLE" FARESYMBOLER	GHS NR.	PIKTOGRAM CLP-FORORDNING	FORKLARING AF PIKTOGRAM	FAREKATEGORIER I CLP SOM ANVENDER PIKTOGRAMMET		
				FYSISK FARE	SUNDHEDSFARE	MILJØFARE
 <b>Eksplisiv</b>	GH501		Eksploderende bombe	De værste eksplosiver – faste, flydende og gasser, og visse organiske peroxider.		
 <b>Yderst og meget brandfarlig</b>	GH502		Flamme	De værste kategorier af brandfarlige faste stoffer, gasser og væsker, og visse organiske peroxider.		
 <b>Brandnærende</b>	GH503		Flamme over en cirkel	Alle brandnærende stoffer og væsker, og gasser i værste kategori.		
 <b>Ingen</b>	GH504		Gasflaske	Gasser under tryk (flydende nedkølede og opløste og kombinationer heraf).		
 <b>Ætsende</b>	GH505		Ætsning	Metalætsende.	Hudætsende – alvorligste kategori (og underinddelinger). Alvorlig øjenskadende – værste kategori.	
 <b>Meget giftig og Giftig</b> Den alvorligste kategori for akut toksicitet for de tre eksponeringsveje, samt de alvorligste kategorier for CMR og den alvorligste kategori for andre kroniske effekter.	GH506		Dødningshoved og korslagte knogler		De tre alvorligste kategorier for akut giftighed for alle eksponeringsveje (oral, dermal, ved indånding).	
 <b>Sundhedsskadelig eller Lokalirriterende</b> Alvorlig øjenskadende, hud- og åndedrætssensibilisering, de laveste kategorier af CMR, akut toksiske og irriterende stoffer.	GH507		Udråbstegn		Akut giftighed – laveste kategori. Hud- og øjenirritation – laveste kategori. Hudsensibilisering – alvorligste kategori. Specifik organotoksicitet, enkelt eksponering – kategori 3 (luftvejsirritation og narkotiske virkninger).	
 <b>Ingen</b>	GH508		Sundhedsfarer (menneske med skade)		Kroniske sundhedsskader, såsom: Kræft, DNA-skader og skader på forplantningsevnen (CMR) – alle kategorier. Specifik organotoksicitet, enkelt og gentagen eksponering – kategori 1 og 2. Respiratorisk sensibilisering – alvorligste kategori. Akutte: Aspirationsfare – alvorligste kategori.	
 <b>Miljøfarlig</b> Farlig for vandmiljøet: Akut – alvorligste kategori. Kronisk – 2 alvorligste kategorier. Ozonlagsnedbrydende stoffer.	GH509		Miljø (dødt træ og død fisk)			Farlig for vandmiljøet: Akut – alvorligste kategori. Kronisk – 2 alvorligste kategorier.

### The Working Environment Committee at the Department of Green Technology



Head of The Working Environment Committee

**Jens Ejbye Schmidt**

Tel: +45 6550 7364 / 9350 7202

[jesc@igt.sdu.dk](mailto:jesc@igt.sdu.dk)



Selected Working Environment Committee Representative

Purchaser/Laboratory technician

**Hanne V. Hemmingsen**

Phone: 6550 9542 / 2135 5993

[hvh@igt.sdu.dk](mailto:hvh@igt.sdu.dk)



Selected Working Environment Committee Representative

Special consultant

**Lars Duelund**

Phone: 6550 2588

[lad@igt.sdu.dk](mailto:lad@igt.sdu.dk)

### The laboratory Team at the Department of Green Technology



Laboratory technician

**Rikke Klindt Muller**

Tel: +45 6550 3207

[rikm@igt.sdu.dk](mailto:rikm@igt.sdu.dk)



Purchaser/Laboratory  
technician

**Hanne V. Hemmingsen**

Phone: 6550 9542 / 21355993

[hvh@igt.sdu.dk](mailto:hvh@igt.sdu.dk)



Special consultant

**Lars Duelund**

Phone: 6550 2588

[lad@igt.sdu.dk](mailto:lad@igt.sdu.dk)



Laboratory technician

**Alberte Sofie Rasmussen**

Phone: 6550 3214

[asra@igt.sdu.dk](mailto:asra@igt.sdu.dk)