

Decided by head of department 2019-06-11

Responsible for updating: Head of department and head of Administration

Safety regulations

Department of Geological Sciences

(IGV)

The following text is a translation of the Swedish text 'Säkerhetsföreskrifter'. In the case of any discrepancies between the Swedish and English versions, the Swedish text has precedence.

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Decided by head of department 2019-06-11

Responsible for updating: Head of department and head of Administration

Responsibilities	3
Responsibility of the Head of Department (HoD)	3
Supervisor's responsibilities	3
The individual's responsibility	3
It's everyone's right	3
It is the duty of each employee:	3
Regulatory framework	4
Pregnancy and breast-feeding (see also AFS Gravida och ammande arbetstagare)	4
Working alone (see also AFS Ensamarbete)	4
Fire protection	4
Work order (Working Environment Act)	5
Work with chemicals	5
Purchase of Chemicals	5
Risk Assessment of chemicals	6
Storage of chemicals	6
Chemical spill	7
Other general rules when working with chemicals	7
Protective equipment when working with chemicals	7
Air Pollution of hazardous substances	8
Organic solvents	8
Gas cylinders	8
Flammable gas or liquid	8
Liquid nitrogen	8
Internal transport	9
Transport	9
Exposure/work with CMR substances	9
Hazardous work that does not involve chemicals	9
Safety regulations for field work	9
Work with radioactive isotopes/radiation sources	10
Transport of Dangerous Goods	10
Waste management	10
Hazardous waste, packaging of hazardous wastes	10
Incidents and occupational injuries and notification of work injury	11

Appendix 1, List of responsible persons for key functions

Appendix 2, List of AFS's mentioned in the regulations

Appendix 3, Risk Assessment for excursions and field work

Decided by head of department 2019-06-11

Responsible for updating: Head of department and head of Administration

Everyone who has permanent employment or has an employment lasting more than 6 months at the Department of Geological Sciences (IGV) is required to read, approve and comply with the regulations. Approval is made in writing on the last page of this document. For students and short-term employees (shorter employment than 6 months) it is the responsibility of 'Supervisor' (see next paragraph who is considered supervisor) to communicate the content of these regulations and ensuring that they are complied with. This regulation document is based on the work Environment Agency's regulations (AFS documents) and the Work Environment Act.

Responsibilities

Responsibility of the Head of Department (HoD)

Safety is ultimately the responsibility of the HoD

Supervisor's responsibilities

Supervisors at IGV include; the HoD, the deputy HoD, course leaders (including PhD students).

- That each one takes part of, understands and applies the safety regulations
- That each one takes part of the chemical management routine and that the necessary risk assessments are carried out
- To provide support and information so that work can be carried out safely
- To ensure that instructions are given so that appliances and other equipment are used properly

The individual's responsibility

It's everyone's right

- To inform newly recruited staff, new students and temporary staff that the safety regulations are available from protection officers ('skyddsombud'), on the IGV website and on the obligation to take part of them.
- To point out perceived shortcomings in the application of the safety regulations

It is the duty of each employee:

- To read and understand the safety regulations
- To inform themselves of the following:
 - locations of safety equipment such as eye showers etc. Maps on each floor show their locations
 - location of fire safety equipment
 - location of first aid equipment
 - locations of defibrillator equipment (available on level 2 outside caretaker's office as well as in the U and Y House)
 - escape routes in the house in the case of evacuation
 - locations of information posters showing contact telephone numbers to be used in case of an accident or acute danger
- To ensure that you leave the work place in a safe and in a good state, with all equipment used returned to its correct place

Decided by head of department 2019-06-11

Responsible for updating: Head of department and head of Administration

- To ensure that visitors whom you do not know, are personally escorted to the person they are visiting
- To use hearing protection when working in noisy environments
- To notify a colleague before you go to refrigeration or freezing rooms and when you are back
- To report work injuries and incidents in SAMIR (University's reporting system for safety, work environment and environment). In SAMIR, it is also possible to report crimes (theft, burglary, threats and harassment, etc.) and environmental deviations and to make suggestions for environmental improvements. SAMIR should also be used to point out risks with the working environment and when registering work-related illness.

Regulatory framework

The Swedish Work Environment Authority is a governmental agency that has the government's and the parliament's (the riksdag) commission. This is to ensure that the working environment meets the requirements of the Swedish Health and Safety Act which states that everyone should have a good and stimulating working environment. The Working Environment Act and the Regulations of the Swedish Work Environment Agency's statutes (AFS) can be found on the Swedish Health and Safety Agency's website <http://www.av.se/arbetsmiljoarbete-och-inspektioner/publikationer/foreskrifter> and is the basis for these internal safety regulations. There is also a list of links to relevant documents at the end of this document.

Pregnancy and breast-feeding (see also AFS Gravida och ammande arbetstagare)

In order to protect the employee and the unborn child, a female employee who works in a laboratory environment is responsible for informing the employer of pregnancy as soon as it is known, and also if she is breastfeeding. The employer shall immediately carry out a thorough investigation into the employees work environment and return with the results of the risk assessment within 10 working days. Notify the HoD/administrative chief for further information.

For free advice Contact the Centre for Occupational and Environmental Medicine, 08-123 37 222.

Working alone (see also AFS Ensamarbete)

Work alone in a laboratory environment should be avoided if there is a significant risk of bodily injury by accident. As a general principle, working alone in a laboratory environment is only allowed during weekdays, office hours (8-17). Working alone in a laboratory environment may only be performed with permission from the head of department/deputy head of department if the work is to be done outside office hours (8-17) during weekdays or weekends.

Fire protection

The fire protection of the IGV is organized as follows:

Fire protection manager: responsible for fire safety at IGV and monitors the fire protection organisation, including that relevant trainings have followed, that fire protection checks are made regularly according to SU guidelines. If you have questions about fire safety at IGV, please contact the fire protection officer.

Decided by head of department 2019-06-11

Responsible for updating: Head of department and head of Administration

Fire protection controller: checks two times per year fire safety equipment, fire doors and general fire safety at IGV.

Evacuation leaders: There are 2 evacuation leaders on each floor (see the appendix). The role of the evacuation leader is to check that the building is evacuated in the event of fire.

The following applies to all employees at IGV:

- In case of fire alarms, all employees and students at IGV should go to the gathering area south of Geovetenskapens hus and Greens villa. Do not use the elevators.
- Free passage must always be at escape routes and around fire equipment
- Combustible material must not be stored in corridors and stairwells
- All employees are encouraged to undergo a fire protection course every fourth year. Courses are organised centrally 2 times per year for all employees. Announcements via SAMIR (www.su.se/samir see trainings)

Work order (Working Environment Act)

Each employee is responsible for keeping their workplace clean and tidy and to take good care of the interior and equipment in office rooms and in laboratories. It should be easy for cleaning staff to daily clean office/spaces at IGV.

- The workplace must always be kept free from bottles, glass objects, appliances, tools, chemicals, etc. Put them away in the appropriate place. General good order should prevail in employees' offices, which allow for daily cleaning without hindrances due to a lack of order on the floor or desk.
- Floors and escape routes must be kept free of objects that can be a tripping hazard or which otherwise impede evacuation.
- Windows and doors shall be closed/locked after the end of the working day.
- Clean workbenches and fume hoods after finishing work.
- Electrical wiring and temporary electrical devices must be safe to use and only be used for a limited period of time.
- Chemicals and liquids that may have been spilled onto the floor and benches are disposed of by means of using absorbents (e.g. vermiculite) available in all laboratories, or wiped up immediately.
- Show consideration for our cleaners by keeping the floor free.
- Smoking is prohibited within the university's premises, and outdoors within 15 meters of the building.

Work with chemicals

Work with chemicals is regulated in the 'Arbetsmiljöverkets föreskrift; Kemiska arbetsmiljörisker' (Work Environment Agency's regulations; Chemical safety and health risks). See also SU environmental web; www.su.se/miljo/sa-gor-du/kemikaliehantering.

Purchase of Chemicals

- Notify any of the KLARA administrators when you buy chemicals, including solvents and gases, so that they can be registered in the chemical handling system KLARA and get a unique barcode label. In this way, the department always has an updated list of chemicals. Always write arrival date and signature on new chemicals.

Decided by head of department 2019-06-11

Responsible for updating: Head of department and head of Administration

- Put clear labels on all chemicals and your own mixed solutions. The label shall show the content (not only abbreviation or formula), the date and a contact name at IGV. In addition, faropictograms with text shall be provided and information in cases where the product may cause cancer, cause allergies, damage the genome or interfere with reproduction and if the contents are flammable, explosive, environmentally harmful, toxic or corrosive. Please note that hazardous waste containers must also be labelled with content and faropictogram.
- Before the purchase of new chemicals, it must be ensured that no permit is required, (www.su.se/klara). If authorization is required, this purchase shall be decided by the head of department. Then contact the research engineer for registration when the chemical arrives, attach a copy of the safety data sheet (SDB).
- Prior to the purchase of CMR substances (carcinogenic, mutagenic and reprotoxic) that do not require authorisation, there is a requirement for a documented investigation to replace the substance with another substance. Contact the research engineer for further information.
- When buying hazardous chemicals under CLP outside the EU's borders, you are obliged to ensure that there is a safety data sheet or obtain and compile written risk and protection information! In addition, there is a requirement to notify the European Chemicals Agency ECHA of the purchase. For more information, contact the environmental administrator at SU for such purchases.

Risk Assessment of chemicals

- Work may not commence before an investigation and risk assessment have been carried out and the necessary measures have been taken to prevent illness and accidents at work. See policy at IGV on risk assessment of chemical safety and health risks.
https://www.su.se/polopoly_fs/1.379835.1522674281!/menu/standard/file/Reviderad-Policy-riskbedomning-kemiska-arbetsmiljorisker-vid-IGV-19feb2018.pdf
- Everyone should take note of the risk assessments relevant to their work and participate when new risk assessments are to be carried out. The head of department approves the risk assessment.
- At Stockholm University, risk assessments are made in KLARA, www.su.se/KLARA.
- If there is a previously established risk assessment, it may be possible to add its name to the previous risk assessment after careful examination, if no other changes are made, the head of department will not need to approve it again.
- Always consider the risks and consequences a laboratory experiment may entail and plan countermeasures in advance. This should be clearly stated in the risk assessment.

Storage of chemicals

- Always keep chemicals in a safe manner.
- Solvents, hazardous chemicals and acids should be stored embarked, i.e. in a trough/tray, so that they cannot be spread uncontrollably.
- If storage or work takes place in rooms with a sink or in fume hood with a sink, bottles and cans should be placed in a trough/tray that can catch the spill if the bottle is to break.
- For solvents, hazardous chemicals, acids and alkalis are specially ventilated storage cabinets should be used.
- Fume hoods must not be used as permanent storage places. Chemicals that are not being used at the moment should be set aside in the ventilated storage cabinets. The hazardous

Decided by head of department 2019-06-11

Responsible for updating: Head of department and head of Administration

chemicals temporarily handled must be stored and handled in such a way as to prevent discharges into the sink.

- Chemical products that need a special permit should be stored so that unauthorized persons cannot access them.
- Plastic containers have a guaranteed shelf life of five years. Therefore, any hazardous or flammable chemicals in plastic containers over five years old should be cleaned out. This is best done in connection with the chemical inventory done in January-February each year.
- Chemicals in containers other than plastics should be investigated if they are to be cleaned out or not. This is best done in connection with the chemical inventory done in January-February each year.

Chemical spill

- Always have appropriate countermeasures, e.g. vermiculite to absorb toxins or corrosive substances when spilled. Used absorbents should be treated as hazardous waste. For larger spillages, the laboratory safety coordinator at SU should be contacted. Notification of incidents shall be made in SAMIR.

Other general rules when working with chemicals

- Children are not allowed in the laboratories.
- Food, drink and snuff must not be consumed in the laboratories.
- Chemicals must not be stored in corridors or in offices.
- Pipetting must not be done by mouth.
- When working in the fume hood, the hatch should be pulled down as far as practically possible – and as far down as possible when no one is working there.
- Note that the ventilation stops working during power failure. In the event of a power failure, the work should be finished, bottles and cans etc. closed and the laboratory left.
- Safety officer monitors that control measurement of fume hoods are carried out. Research engineer at the respective laboratory monitors that emergency and eye showers in the laboratories and corridors are tested, and that the first aid boards are ready to use.
- Special protective equipment shall be used if this is not clearly unnecessary.

Protective equipment when working with chemicals

- Goggles are mandatory when working with chemicals in laboratories and when working with corrosive acids, bases, compressed air, liquid nitrogen and other substances that may damage the eyes. Goggles should be used when working with pressurised glass.
- Protective gloves should be used if there is a risk of hazardous substances being absorbed through the skin or causing skin damage. The gloves must be of the right variety and quality for the purpose and used properly.
- Laboratory coats are to be used in laboratories but not in offices, and must not be used in lunch or coffee room.
- Contaminated protective equipment is removed after work has been completed and cleaned or packed as hazardous waste.
- For work with chemicals in air that over a critical level can cause health problems hygienic limits apply; see AFS exposure about hygienic limit values. Substances listed in Group A or group B (carcinogenic, sensitising and/or reprotoxic) in AFS chemical Safety

Decided by head of department 2019-06-11

Responsible for updating: Head of department and head of Administration

and health risks require permission from 'Arbetsmiljöverket' (the Swedish Work Environment Authority). If necessary, contact the laboratory engineer at IGV for more information.

Air Pollution of hazardous substances

Work on substances which may cause air pollution shall be carried out in fume hoods or another equivalent device. The same applies to substances whose health hazards are insufficiently known.

Organic solvents

Organic solvents are dangerous to health and flammable and work with these must be carried out in fume hoods or another equivalent device and not near hot objects or open flames, because of the risk of explosion.

Gas cylinders

Gas cylinders must be anchored so that they cannot fall and shall be handled in such a way as to avoid accidental hazards, through operation or heat, shock or impact.

Flammable gas or liquid

Open handling of flammable gas or liquid must be carried out in fume hoods or another equivalent device. Refrigerators and freezers where flammable liquids are stored shall be spark-proof.

Flammable liquids that are to be held cold must only be stored in a refrigerator with encapsulated thermostat, i.e. explosion secured version.

Liquid nitrogen

Work with liquid nitrogen may only be carried out by those who have sufficient knowledge of the risks that may arise from handling and use and how these risks can be avoided. The manager shall ensure that documented risk assessments have been carried out prior to handling of liquid nitrogen, that adequate protective measures have been taken and that local handling and safety instructions have been done. When handling liquid nitrogen, the low temperature means the risk of frostbite if unprotected body parts and skin come into direct contact with the cold liquid. Materials (e.g. plastics) that are not suitable for use at low temperatures may also pose risks. At room temperature (20 ° C), nitrogen gas takes 694 times more volume than the liquid. For gas transformations of liquid nitrogen there is therefore a risk of displacement of atmospheric oxygen with oxygen deficiency as a consequence. There is particularly high risk of this in enclosed and smaller spaces such as lifts and in areas where liquid nitrogen is stored or used.

- Due to phase transformation (liquid to gas), pipes and containers containing liquid nitrogen must never be closed as there is a risk of explosion. This also applies to very small amounts because liquid nitrogen in a sealed tube/vessel can cause high pressure. For the same reason, larger containers (such as transport containers) without a safety valve may never be completely closed.
- If a container is not possible to open and the gas is not able to get out of the container, help via SOS should be immediately called (call 112). Liquid nitrogen is classified as dangerous goods which means specific requirements for transport on public roads, airplane etc. Questions concerning the transport of dangerous goods are referred to SU's safety adviser for the transport of chemicals.

Decided by head of department 2019-06-11

Responsible for updating: Head of department and head of Administration

Internal transport

When transporting chemicals through corridors, they must be carried in appropriate bags or on chemical wagons. These bags and trolleys should always be returned to their proper place as soon as possible after use.

Transport

If dangerous Goods (chemicals and/or cylinders) need to be transported off-campus, SU's safety adviser for the transportation of chemicals must be contacted. This is to ensure that we comply with the law on the 'transport of dangerous goods SFS 2006:263'.

Exposure/work with CMR substances

For working with chemicals, hygienic limit values apply; See AFS about exposure limit values. Substances listed in Group A or group B (carcinogenic, sensitising and/or reprotoxic) see AFS 'Kemiska arbetsmiljörisker' (Chemical safety and health risks) where those substances require special permission from 'Arbetsmiljöverket' (the Swedish Work Environment Authority). If you need more information, contact SU's laboratory safety coordinator. When working with CMR substances, which are not part of group A or group B, there is a requirement for a documented study of the possibility of substituting a substance with another that poses less risk.

Hazardous work that does not involve chemicals

Anyone who is to carry out a risky work shall carry out a risk assessment. The risk assessment shall be written and signed by the head of department and contain the following:

- Description of the risk
- Description of possible consequences of the risk
- Description of the preventive measures taken to avoid the risk

Any person who exposes himself to risk is obliged to take the necessary protective measures and to use the necessary protective equipment.

Safety regulations for field work

Checklist for field work is available on IGV's website.

Everyone working in the field shall inform the supervisor/employee/relative of the location, duration and purpose of the field work and have access to the mobile phone during the field work and travel to and from the field work.

Everyone who is to carry out fieldwork must consider in advance the high risk operations involved, carry out a risk assessment and take the necessary protective measures and use the necessary protective equipment. First aid equipment must always be included and available.

For the transport of chemicals when working in the field see also 'regulations for working with hazardous substances' and the section on 'Transport'.

If soil, peat or other growing medium is to be brought into Sweden after field work from another country, a permit from 'Jordbruksverket' (the Swedish Board of Agriculture) is required. For more information, see SJVFS 2000:88, 'Jordbruksverkets' regulations on imports from third countries or movements within the European Union (EU) of plants etc. for scientific purposes.

Decided by head of department 2019-06-11

Responsible for updating: Head of department and head of Administration

Work with radioactive isotopes/radiation sources

All work on ionizing radiation, as well as possession of and trade in radioactive material, is subject to permit requirements under the 'strålskyddslagen' (radiation act). Stockholm University has a framework permit for ongoing operations.

- Before starting work with radioactive substances, you must contact the head of department and 'strålskyddsansvarig' (radiation protection manager).
- All those who are to work with radioactive isotopes must attend basic radiation protection training.
- Any incidents must be reported via SAMIR.

Transport of Dangerous Goods

In the transport of dangerous goods on public roads, the ADR-S regulations shall be followed. Many chemicals and chemical products are dangerous goods. Information if this is the case can be found in the safety data sheet at point 14. This means special rules for, among other things, packaging, labelling, documentation and transporter. If you handle dangerous goods, you must know and comply with the regulations in case that you do not know then contact the university's security advisor.

Waste management

The person who produces waste at work is required to dispose of the waste in an adequately manner. Sorting of waste, for example paper, cardboard, styrofoam and electronic waste are available on floor 1 (T135).

Hazardous waste, packaging of hazardous wastes

Hazardous waste must be sorted, packaged and labelled in accordance with the applicable regulations. The used containers should not be affected by its content. The containers shall normally be labelled 'hazardous waste' containing the declaration of contents and the correct signs (faropictogram). Hazardous waste must be left to room M212 Svante Arrhenius väg 16 F. Opening hours are Wednesdays and Fridays 10:30-11:00. Strong smelling or toxic substances and chemicals are considered to be hazardous waste.

- Suitable cartons and other packaging can be ordered from the SU store. Labels can be picked up in the hazardous waste room.
- Chemical residues or waste which are temporarily stored in laboratories with floor sinks or another type of sink must be stored in trough/trays. The trough/tray must be a plastic back that holds at least 10% of the volume or the volume of the largest container, alternatively it could be a sealed lid over the floor sink.
- Biological waste is left to room M212. The day the carrier has a pickup, if refrigeration or freezing is required (which it normally does). Contact the waste contractor before drop-off. Labelled as bio-waste on the label.
- Other non-liquid hazardous wastes are collected in cartons for hazardous waste. Clearly label the contents.
- Organic solvents or liquid chemical residues must not be poured out in the sink! Exceptions are allowed for e.g. solvents that are completely mixable with water, such as ethanol or similar, unless they are dangerous to health or otherwise dangerous to

Decided by head of department 2019-06-11

Responsible for updating: Head of department and head of Administration

the environment. In some cases, exceptions are allowed, for very low concentrations. Contact SUs safety advisor.

- Laboratory glass is sorted in the fractions contaminated (chemical residues, microorganisms or radioactive) and non-contaminated. The contaminated glass is handled from the contamination, packed and labelled as hazardous waste. The uncontaminated glass shall be packaged and labelled with laboratory glass (non-contaminated bottles and cans used as packaging must be evaporated and emptied. And can then be sorted for recycling at the environmental stations).
- Syringes, needles, razor blades, scalpels and the like are packaged in intended cans or in plastic containers packed in labelled cardboard.
- Radioactive waste is to be left in the A205 (opposite the SU store). Opening hours are Wednesdays at 9:45-10:15. The waste shall be left correctly packed and labelled with the disposal label and the symbol for ionizing radiation and with the necessary documentation, see SU instruction <http://www.su.se/miljo/så-gör-du/avfallshantering/labavfall/Radioactive>.
- Contact the goods reception (goods@su.se) for removal of goods and transport to recycling (<http://www.su.se/miljo/så-gör-du/avfallshantering/labavfall/intyg-för-inlämning-av-laborativ-utrustning>, this may apply to laboratory equipment such as refrigerators, freezers and instruments and non-contaminated equipment.
- For equipment with radiation sources: contact our waste contractor.

Incidents and occupational injuries and notification of work injury

Occupational injury or incident notification. Occupational injury means:

- Injury as a result of an accident or other detrimental effect at work
- Accident on the way to or from work
- Work related illness, e.g. stress diseases, load-related injuries, etc.
- Infection for example, when staying abroad at work
- An incident means an undesirable event that could lead to illness or accident.
- In case of work-related injury, the employer and the safety representative must be notified as soon as possible. Notification of work-related injury or incident (including environment-related incidents) is done in the security unit's report system SAMIR (<http://www.su.se/samir>).
- In case of serious injury or serious incident, the employer must submit a report to the 'Arbetsmiljöverket' (Swedish Work Environment Authority (<https://anmalarbetsskada.se/>)) within 24 hours of the accident. It is important that the employee contacts the administrative manager or head of department to ensure that this is done, especially during weekends and holiday periods.
- Sick leave report is done as usual if the employee is unable to work. If you are injured at work or on the way to or from work, you can get compensation from the work injury insurance. More information about work injury insurance
 - <http://www.afaforsakring.se/Forsakringar/Arbetskada/> (employees)
 - <http://www.kammarkollegiet.se/forsakringar/student/student> (students)

Decided by head of department 2019-06-11

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I, the undersigned, certify that I have read and therefore taken note of these regulations. This sheet is left to the head of department at IGV after completion of date and signature including name clarification.

Date: _____

Signature: _____

Printed name: _____