

Code of conduct in laboratory and production areas

Access and conduct rules and specific safety policies of your own organisation apply.

Ensure that you are up to date with¹:

- The dangers of the substances you work with:
 - ✓ the potential risks associated with this work (see RI&E, exposure assessment, and health and safety information on the hazardous substances);
 - ✓ the mandatory measures that have to be taken in this work to prevent these risks or to limit their consequences (see RI&E, this KAM-rule, organisation- specific procedures);
 - ✓ if one of the measures is to wear personal protective equipment: the purpose, the operation and the method of use, and that the employer provides the personal protective equipment;
 - ✓ the rules for safe storage of hazardous substances;
 - ✓ the rules for labelling hazardous substances (meaning of pictograms, H- and P-phrases, self-labelling);
 - ✓ the rules for the safe disposal of hazardous substances;
 - ✓ measures to be taken when a (sudden) unintended event with a hazardous substance occurs;
 - ✓ the general control measures in laboratory and production areas;
 - ✓ the way in which compliance with instructions and regulations is monitored.

At least the following:

APPLIES:

- ✓ wear protective clothing (e.g. lab coat) in a laboratory or production area;
- ✓ keep the work table, fume cupboard and work area orderly and clean;
- ✓ keep doors to corridors closed with regard to ventilation of space;
- ✓ keep forearms and hands free of jewellery and watches and keep long hair tied back;
- ✓ use a pipetting aid, such as a pipetting balloon or automatic pipette;
- ✓ Add the Acid! When diluting, pour concentrated acid into water (and never water into concentrated acid);
- ✓ Always add boiling rods and boiling stones prior to distillation and evaporation to prevent delayed boiling;
- ✓ Prevent fumes from being emitted unnecessarily in the work area: Close containers and bottles, avoid spills, work neatly. Remember that vapours can be heavier than air and as such 'creep' over the work table and collect in lower places.
- ✓ Prevent combustible substances, solvents and explosive vapour/air mixture from coming into contact with hot surfaces, such as hot plates, ovens, pipes etc. Only work with (very) (light) flammable substances after extinguishing an 'open fire' such as pilot lights, Bunsen burners and so on.

DOES NOT APPLY:

- ✗ Removing or inserting contact lenses during laboratory or production work;
- ✗ Eating and drinking in laboratories and production areas, including storage of food and/or drinks;
- ✗ Using bottles/jars for substances other than those indicated on the original label;
- ✗ Pipetting with your mouth.

¹ See also KAM-rule 03 Hazardous substances, Information and instruction section

Working with source extraction is mandatory when:

- Working with undissolved solid Carcinogenic, mutagenic and reprotoxic substances (CMR-substances). In this case, the source extraction is a glove box, or a fume cupboard reserved for CMR-substances. Weighing can be done as follows:
 - weigh an empty sealable container outside the fume cupboard;
 - add the solid substance in question in the fume cupboard and close the container;
 - re-weigh the container outside of the fume cupboard;
 - then prepare the solution by adding the correct amount of liquid based on the solid's weight in the fume cupboard.
- working with Sensitizing substances (SENS-substances; substances that can cause hypersensitivity). These substances contain the Hazard-phrase H317 and/or H334;
- working with (lightly) flammable substances;
- working with volatile hazardous substances, where the ratio 'maximum concentration to be reached in the air'/'limit value' is greater than 500. This ratio can be found in the overview of hazardous substances in your organisation. If not ask the expert in the field of hazardous (chemical) substances within your organisation (occupational safety expert/ safety expert) what the ratio is.

How to work safely in a fume cupboard:

The operation of the fume cupboard is influenced by the way in which the work is carried out.

As such please note the following for safe working within fume cupboards:

- Check whether the usual periodic inspection has been carried out in a timely manner. See the label or sticker on the fume cupboard.
- Do not place any other resources in the fume cupboard than those required for work to be carried out at that time. Pay particular attention to the suction plates at the rear. These cannot be obstructed.
- Place the installation as far as possible to the back of the cupboard. Ensure that there are no air obstructions. As a rule of thumb, the front 5 to 10 cm of the worktop are to be left unused.
- Do not remove flow baffles. Large installations should be set up in walk-in cupboards;
- Place large installations that hinder air flow on to blocks, so that air can flow comfortably underneath (at least 10 cm).
- When working with (very) (light) flammable substance indicate that no open fires or electrical equipment may be used. Electrical equipment may only be used in these cases if the need to do so is justified and documented. The electrical equipment must be non-sparking (integrated explosion protection), in accordance with the [ATEX directive](#).
- A fume cupboard must not be used for the storage of hazardous substances, not even for a work stock. For storage rules see the chapter Storage in KAM-rule 03.
- Keep the sliding window closed where possible and the head positioned outside of the cupboard. Use the safe working position of the sliding window when performing work in the fume cupboard.
- Don't make any sudden movements when in front of or in the cupboard to ensure safe airflow.
- Limit people traffic to the fume cupboard. This disrupts airflow and as such the effective functioning of it.
- It's better not to use a burner in the fume cupboard, but rather a heating element (ceramic plate or heating mantle), and only if absolutely necessary. Burners and heating elements disrupt the airflow and as such effective functioning of it.
- Do **not** use the fume cupboard as a disposal means for gaseous contaminants.
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- Neutralise released gases or use a gas scrubber or suitable filter.
- Clean the fume cupboard after each use thoroughly according to the specific procedure applicable to the laboratory/production area.

Compulsory use of suitable gloves:

- According to the policy and regulations within your own organisation.
- Wearing **suitable chemical resistant gloves** is mandatory when working with:
 - ✓ Substances with at least one H-phrase beginning with H31 (hazards when in contact with the skin), with the exception of H318 and H319;
 - ✓ Substances where it has been assessed in the RI&E that these can be absorbed through the skin;
 - ✓ CMR-substances;
 - ✓ SENS-substances.

For CMR substances: Carefully follow each action so that spilled droplets or particles are detected. If the glove has become contaminated, dispose of it immediately in the appropriate waste container at the workplace, and then replace the glove with a new one.

- Wearing **heat-resistant gloves** is mandatory when working with materials hotter than 60°C. These gloves must comply with NEN-EN 407: Protective gloves against thermal hazards (heat and/or fire);
- Wearing **cold-resistant gloves** is mandatory when working with cryogenic substances and when working with materials colder than -20°C. These gloves must comply with NEN-EN 511: Protective gloves against cold.

Wearing eye and/or face protection:

- According to the policy and regulations within your own organisation.
- Wearing a **face shield is mandatory** when working with cryogenic substances;
- Wearing **safety goggles is mandatory** in the event of risk of spitting, such as:
 - ✓ working with corrosive substances outside of the fume cupboard;
 - ✓ working under increased or reduced pressure;
 - ✓ removing hot viscous liquids from the microwave where there is risk of spitting due to delayed boiling;

In the above cases, you can also opt for a face shield. A shield often offers better protection than a pair of glasses.

- Wearing **safety goggles is recommended** when:
 - ✓ Working with eye irritants (H-phrases 318 and 319) outside of the fume cupboard;
 - ✓ Removing all hot liquids from the microwave.