
Safety regulations for contractors

KRONOS EUROPE pursues a policy in which the environmental protection, as well as the safety and health of its own employees, the contractor's employees and the people living in the neighbourhood, are essential.

To avoid incidents it is necessary that all persons present on our factory site comply with the statutory regulations. The safety regulations for contractors are included in this document. If you should have any more questions, please get in touch with your contact person.

The safety instructions are also available on the website of Kronos

<https://www.kronosww.com/>

The website will be updated after every revision of the safety regulations for contractors.

Responsibility

All legal regulations, with regard to safety and environment, are to be observed.

The contractor's employees are in the obligation to observe the safety regulations valid at KRONOS EUROPE s.a./n.v.

KRONOS has the right to take strict action if the "KRONOS Rules of Conduct" or the "ONE KRONOS Safety Rules" are violated, including denying access to company premises.

KRONOS Rules of Conduct



I always address unsafe behaviors.



I always hold the handrail on stairs.



I always look where I am going to avoid slips, trips and falls.



I always keep my workplace tidy and free from obstructions.



I always attend work fit for duty.



I always follow all local rules and procedures in addition to the ONE KRONOS Safety Rules.

ONE KRONOS safety rules.



The contractor must train the employees he hires to work at KRONOS EUROPE S.A./N.V. so they can do their tasks safely and in accordance with the statutory safety regulations.

Access.

Contractor's employees themselves report at the reception desk or his contact person when arriving or leaving the plant. It is strictly forbidden to station/park vehicles on the shaded parts all over the factory site.

Every contractor's employee personally fills in the log [Form/PA/64](#) : company name, first name, surname, license plate number and signature to acknowledge the basic safety regulations

Every contractor's employee obtains a KRONOS badge at the reception desk.

The standard safety regulations for visitors, contractors and truck drivers are available at the reception desk (see [WI/PA/REC-07](#)).

Daily, before the start and at the end of the work, the contractor's representative checks in and out with his contact person. The contact person gives the necessary instructions and relevant information concerning the tasks that have to be done and the risks involved and fills in the necessary data on form SAFF021 "Checklist werknemers derde firma's".

Every contractor's employee always has to be in possession of form SAFF021 "Checklist werknemers derde firma's" [SAFF021](#)

Every person entering the B3 building must always have a Wifi tag with him. This is to make it possible to locate every person present in this building.

The number of vehicles admitted to the plant and the use of vehicles inside the plant area is restricted to a minimum. The vehicles that are admitted need to park (with the exception of loading and unloading) within the indicated parking zones at all times so the passage way for emergency services never is obstructed.

Persons less than 18 years old and animals are not allowed entry to the plant.

For specific works a VCA*/** certificate is required. The employees of the company will have to be VCA-certified.

Alcohol/Drugs

Alcoholic drinks are not allowed to be taken in nor consumed on the premises. Persons being obviously intoxicated have no access to the plant. A breath test can be imposed.

Smoking

Smoking is strictly forbidden all over the plant, as well as at the plant installations, as on the roads (except at designated smoke shacks).

Traffic Rules.

The maximum speed of vehicles within the plant amounts to 20 km/hr. Violations can lead to exile.

The maximum speed for fork-lift trucks amounts to 10 km/hr.

Exploration of the workplace

Before starting the work, the workplace always needs to be explored.

The following things have to be examined :

- location of the emergency showers, the eye-rinsing showers (yellow shaded areas) and the testing of these.
- location of fire extinguishers and check how they have to be used.
- location of intercom
- all possible escape routes (at least 2 in different directions).
- Yellow flight lines in the B3 building
- location of the nearest or most appropriate evacuation point
- Explosion zones (yellow shaded zones)
- Transport of installation parts to be installed/removed (secure cargo)

Contractor site F10

On (the production site, contractor site F10 is at the disposal of contractors. This can be used in agreement with your contact person. The infrastructure of the contractor site exists of:

- 2 refectories:
2 refectories are at the disposal of the contractors, namely refectory number 20 and refectory number 21.
- Changing room and shower area 15:
A key of a wardrobe can be obtained in the maintenance department. After the end of the works, the key has to be given back.
- Lavatory
There is a lavatory container for contractors in the vicinity of the contractor site. The exact location is indicated on SAFF021 "Checklist werknemers derde firma's" [Notes Link](#) and on FORM/PA/35 "Basisveiligheidsinstructies TiO2 NFEDS" [Notes Link](#)
- Yard containers:
Kronos has provided for the possibility to connect to the electricity grid and the **non-potable** city water system.

Following rules are to be observed when using these facilities:

- Permission has to be asked at all times to the contractor site administrator for placement, transfer or removal of yard containers.
- Telephone connection is provided; costs for this connection are at the expense of the contractor.
- Outlets for sanitary water are provided; connection has to be provided by the contractor. It is forbidden to drain substances other than sanitary water.
- The installation has to meet AREI. Before the installation is taken into service, it has to be tested by a certified authority. The reports have to be presented to the contractor site administrator. The installations have to be tested every 5 years and the report has to be presented.
- Fire safety: at least 1 powder extinguisher ABC has to be available.
- It is forbidden to store dangerous products or gas cylinders in the yard containers.

Orderliness and tidiness

At each moment during work the traffic signs, the stairs, the intercoms, the emergency exits, the emergency showers, the eye-rinsing showers, the eye-rinsing bottles, the first aid-boxes, the fire protection equipment, the self-contained breathing apparatus, the emergency stops, the electrical - and operational boxes and the passage ways need to be free and unobstructed.

Used or disassembled equipment, wastes, etc. have to be stored in such way that no one in the neighbourhood can be hampered or hurt by it.

The working area needs to be protected (screened off) as much as possible.

After finishing, the (daily) work, all equipment has to be put safely away and 'locked up'. Kronos can not be held responsible for loss of equipment.

Wastes must be regularly evacuated in accordance with your contact person.

At the end of the activities, the whole working area has to be completely restored again.

KRONOS EUROPE S.A./N.V. has the right to have the working area cleaned up at the contractor's charge, in case the latest might fail.

The contractor will comply with the statutory (legal) storage demands for dangerous products (transport, troughs, labeling, MSDS, fire safety).

Use of KRONOS material/property

For the use of extinguishing water for purposes other than extinguishing fire, an authorization from your contact person is required.

Overhead cranes, cherry pickers or fork lifts can only be used with permission of your contact person. Contractors have to prove their contact person they received the necessary training, are medically fit and are competent to use these means of equipment

Machinery in the work area may only be operated by :

- maintenance personnel of Kronos Europe
- contractor's employees mentioned on the list "competent contractor's employees allowed to use the machinery in the central workshop" (D10)

Theft of KRONOS material is prohibited. An unannounced exit check may be performed by a specialist firm.

General safety regulations

Contractor's employees are allowed to execute only those tasks given by their contact person.

Contractor's employees are not allowed to operate production equipment.

Foreign speakers always have to be accompanied by a guide who masters one of the following languages: Dutch, English, German or French.

The third firm maintains a list of each subcontractor with associated information: activity of the subcontractor, number of employees, date of work, location of work, purpose of work.

The wearing of a long pair of trousers is compulsory.

T-shirts without sleeves are forbidden. T-shirts should at least have short sleeves. When loading/unloading dangerous products or executing tasks at machines that contain dangerous products, long sleeves are mandatory.

Within the production buildings and in the vicinity of process installations safety shoes are mandatory (also see 5. 'Personal protective equipment'). Elsewhere at the plant area, closed shoes are mandatory

Requirement for a safe work permit include among other things the following activities:

- works in tanks, tubs, pits and confined spaces
- works in areas where fire, burning and/or danger for explosion can occur
- works at which pipes or equipment containing dangerous liquids need to be opened
- works with a crane in the vicinity of pipes containing liquid Cl₂, liquid TiCl₄ or liquid NH₃
- hoisting works
- digging works
- works in the vicinity of radio-active sources
- works at high levels (> 2 meter)
- works in the vicinity of underground gas pipes (natural gas of FLUXYS & hydrogen of AIR LIQUIDE & nitrogen or oxygen of AIR PRODUCTS)
- works in the vicinity of high-voltage cables
- works at aerosol producing installations (e.g. cooling towers)
- works at safety installations (e.g. hydrants, fire alarm panel, wall reels, sprinklers, water curtain, gas detectors)
- other works requiring certain precautions and for which there are no work instructions available.

Without the safe work permit, such activities cannot be started.

The safe work permit is provided by your contact person. All people involved must examine the instructions in the safe work permit and sign it.

In case of emergency, all safe work permits expire.

The safe work permit is described in procedure OP/4.09-03.

Driven machinery always needs to be locked off before starting reparation works. The switch-off must be carried out in accordance with your contact person.

Activities at a height of more than 2 m need to be carried out according to the regulations of ARAB (= General Regulations on Work Protection).

The most important stipulations are :

- Working-platforms and gang-platforms of 2 m and more, have to be equipped with handrails or equivalent means of protection.
- Floors, nets or equivalent collective protective elements are necessary where adequate hand-rails cannot be placed.
- Safety belts or equivalent protections are necessary when no other adequate collective protective equipment can be applied.

Only adequate personnel can carry out works at electrical installations.

Circumstances involving dangerous situations always have to be reported to your contact person immediately.

The instructions indicated by pictograms or traffic signs are to be observed at all times.

The use of the internal compressed air network as supply for respiratory protection is forbidden. The reason is that during a pressure drop, the pressure is taken over by the nitrogen network, with risk of suffocation as a consequence.

All equipment and material in use need to be in good state and be of no risk whatsoever for persons or installations.

All material needs at least to fulfil the legal requirements. The use of unsafe material is forbidden.

Quality certificates or training certificates required for the performance of a specific task must be kept available for verification:

- Certificate for the operation of overhead cranes or cranes
- Forklift driver certificate
- Welding certificate
- Breathing Apparatus Certificate
- Certificate of watchman or gas analyst
- Industrial Helper Certificate
- Test certificates of material to be used
- ...

Personal protective equipment

Following personal protective equipment has to be worn at any time :

- **Safety shoes** : in all production buildings and during activities at installations or machinery (maintenance works, checks, sampling...)
- **Safety spectacles** : all over the plant area and in all production buildings.
- **Safety helmet** : all over the plant area and in all production buildings.

During works at which :

- the statutory tolerated sound level is exceeded, adequate ear protection must be worn (e.g. during grinding).
- there is an increased risk at eye injuries, "splash" spectacles or goggles have to be worn (e.g. during grinding).

The contractor himself is responsible for putting the safety shoes, safety spectacles, safety helmet and ear protection at the disposal of his personnel.

The respiratory protection is provided by KRONOS. The user of this respiratory protection has to be trained for this material and medically fit.

For specific tasks, KRONOS can require the wearing of other personal protective equipment.

Which specific respiratory protection has to be worn by exposure to dangerous products is described in the general safety instruction VI/6.-603.

6. Medical assistance in case of accidents

Any accident involving physical or material damage, and any incident involving emissions to the environment, must be reported immediately to the contact person.

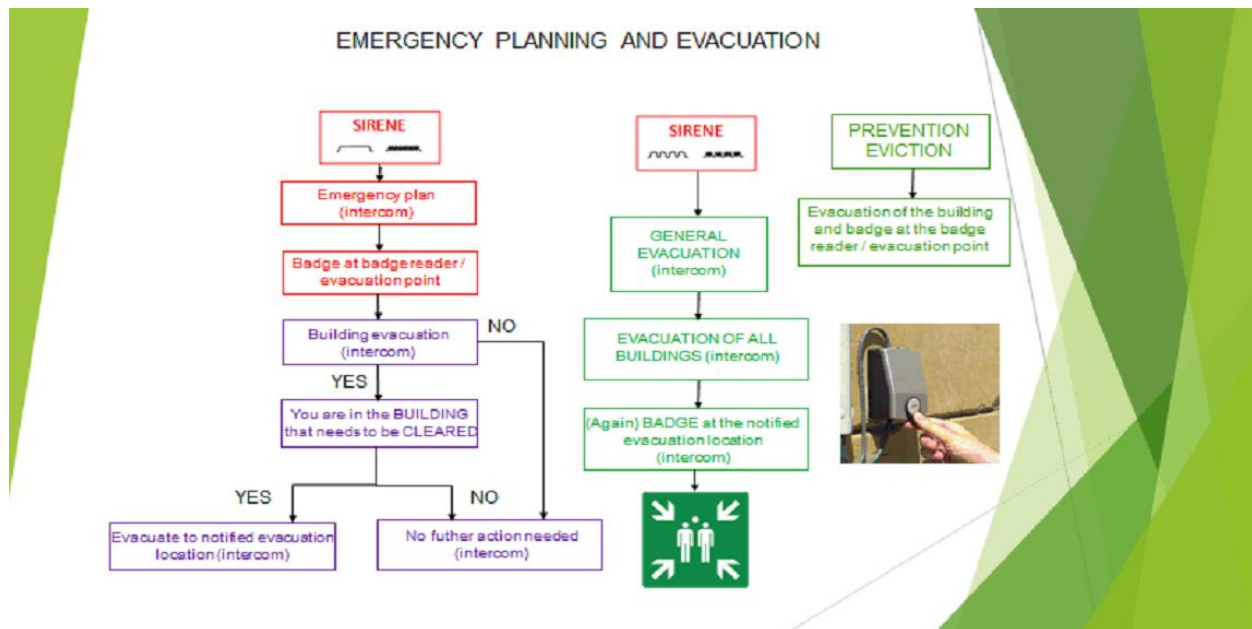
The contractor firm is responsible for the legally required reporting of an accident at work with absenteeism to the government and/or insurance company. KRONOS will be involved in the investigation of the incident.

In case of an accident (incident, first aid, ...) your contact person always needs to be contacted immediately.

The KRONOS-first aid assistants :

- will take care of small injuries.
- will organize transfer to the hospital in case of more serious injuries, without prior consultation with the contractor.
- will take care of the transportation.

Plan for emergency situations



In case of emergency, the contractor's employees must follow the KRONOS-emergency plan.

The most important stipulations are:

- emergency situations (such as fire, gas leak, ...) must be immediately reported to the CP control room :
 - via the emergency telephone number 777 (from the inside)
 - via telephone number 09/254.04.62 (e.g. from a cell phone)
 - via intercom.
- no use of elevators in case of danger.
- during emergency situations all traffic has to be stopped (keep the passage ways free).
- emergency situations are announced by means of sirens and intercom. By means of the intercom accessory information will be announced.

Alarm signals:

Alarm: continue sirene



Large sirens



Small sirenes

Evacuation: in- and decreasing siren



Alarm test (siren and water curtain)

Each first Thursday of the month at 12.00 hrs.

Instructions in case of alarm (siren)

When hearing the siren, abandon your work area via a safe route. Leave it behind in a safe way.

Following message will be announced in 4 languages: "Attention, attention... all contractors please proceed to an evacuation point immediately and use your badge at the badge reader".

The 3 evacuation points are marked on form SAFF021 "Checklist werknemers derde firma's" [SAFF021](#)

If you are not able to report physically to an evacuation point, you have to report, from where you are at that moment, as soon as possible to :

1. your contact person (telephone number see SAFF021)
2. the CP control room:
via telephone number 09/254.04.62 (e.g. from a cell phone)
via the emergency telephone number 777 (from an internal telephone)
via intercom.

Instruction in case of evacuation (announcement by intercom)

Go to an evacuation point again and use your badge at the badge reader. Follow the instructions of a KRONOS employee.

Guidelines in case of gas escape:

- gas escape on the outside of a building :
Go to a safely reachable evacuation point and use your badge at the badge reader. A KRONOS employee will accompany you inside. Close all doors and windows. The safest place in a building is always there where the wind can't reach and as high as possible.
- gas escape on the inside of a building :
Leave the building as soon as possible, go to a safely reachable evacuation point and use your badge at the badge reader. A KRONOS employee will accompany you to a safe location inside.

Always try not to end up in the gas cloud. If you find yourself in a gas cloud, flee in the opposite direction of the wind.

The wind direction is announced via intercom. The North is marked on the evacuation plans, which are present at each floor at the staircase of the production buildings.

Preventive evacuation

In case an area has to be evacuated due to a dangerous situation or to the execution of a dangerous work, e.g. when an escape of chemicals is probable, the following procedure will be pursued :

- there will be announced in Dutch by intercom that the danger zone will be evacuated.
- Following message will be announced in 4 languages:
"Attention, attention...Preventive evacuation B3 building: all contractors please proceed to an evacuation point immediately and use your badge at the badge reader"
- Foreign speakers will be informed of the situation by their guide.

Detections: carbon monoxide (CO), hydrochloric acid (HCl), ammonia (NH₃) and chlorine (Cl₂)

- The entrances of the production buildings (A3-B3-B4-B8-E5-F5) and the Cl₂-park are equipped with signalisation lights (red/green).
- The building or the Cl₂-park can only be entered when the green light is ON.
- When the RED light is ON, the building can not be entered and you need to inform your supervisor.

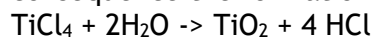
-
- When neither the green nor the red light is on, you may not use this entrance and you need to make use of another entrance with signalisation.
 - The exits of the production buildings (A3-B3-B4-B8-E5-F5) are equipped with flash lights. These are activated when chemicals are detected.
 - When the flash lights are active, you need to leave the building via a safe route

Most important dangerous products and their properties

During works at installations containing dangerous products, your contact person will provide all necessary information concerning the products involved. The most important products are listed hereafter :

1. Titanium Tetrachloride (TiCl₄)

Titanium Tetrachloride is the intermediary product of the production process. It is present in a large part of the installations, mainly as a liquid. When airborne, it will react with the atmospheric humidity that is present, following the formula mentioned below, with as a consequence the formation of a compact white irritating mist.



The allowed concentration of HCl is 5 ppm. This limit is reached as soon a visible mist is formed. Above this limit, respiratory protection is necessary.

2. Chlorine (Cl₂)

Chlorine is a yellow-green poisonous gas. The short term exposure limit (TLU-STEL) is 0.5 ppm. The smell value lies beneath this limit. Above this limit, respiratory protection is necessary.

3. Ammonia (NH₃)

Ammonia has an allowed concentration limit of 25 ppm. Above this limit, respiratory protection is necessary.

4. Carbon monoxide (CO)

Carbon monoxide has an allowed concentration limit of 25 ppm. Above this limit, respiratory protection (compressed-air mask) is necessary.

Environmental regulations

- The third company must check whether a (temporary) environmental permit is required for the execution of the work and must report this to its contact person.
- Wastes of wood, iron, paper and carton have to be collected in the corresponding trash bins.
- For other waste materials (solids as well as liquids) your contact person has to be contacted first so a proper removal in accordance with the environmental legislation can be organised.
- Activities requiring a safe work permit (eg. metalworking, storage of gas cylinders, storage of dangerous products (eg. inflammable products), movement or drainage of soil) have to be reported to your contact person.
- Calamities (loss of dangerous chemicals in soil, water or air) have to be reported to your contact person immediately. The necessary precautions have to be taken to restrict the pollution.

Business Security

Use of cameras is forbidden. If necessary for professional reasons, permission of a KRONOS department head has to be granted