


<b>VV 23 SAFETY REQUIREMENT</b>  <b>Use and storage of hazardous substances</b>	 Balen/Pelt
---	---

<b>Last modified date:</b>	3 Aug 2023
<b>Nature of last modification:</b> checked	<b>CHANGES SEE BLUE TEXT AND TABLES</b>

<b>1</b>	<b>PURPOSE .....</b>	<b>2</b>
<b>2</b>	<b>TAPPLICATION AREA.....</b> ERROR! BOOKMARK NOT DEFINED.	
<b>3</b>	<b>DEFINITIONS .....</b>	<b>2</b>
<b>4</b>	<b>PRESCRIPTION.....</b>	<b>3</b>
<b>4.1</b>	<b>Requirements for the use of dangerous substances .....</b>	<b>3</b>
<b>4.2</b>	<b>Storage of hazardous solids in bulk.....</b>	<b>5</b>
<b>4.3</b>	<b>Storage of hazardous liquids .....</b>	<b>5</b>
4.3.1	Tank requirements .....	5
4.3.2	Distance rules .....	6
4.3.3	Pitch for tankers.....	6
4.3.4	Inspection obligation .....	7
<b>4.4</b>	<b>Storage of gases (incl. mobile containers) .....</b>	<b>7</b>
4.4.1	Distance rules .....	7
4.4.2	Inspection obligation .....	9

## VV 23 SAFETY REQUIREMENT

### Use and storage of hazardous substances



## 1 PURPOSE

This regulation describes the requirements associated with the (temporary) use and (temporary) storage of hazardous substances in the execution of activities.

## 2 SCOPE

The requirements of this safety regulation apply on the premises of Nyrstar Belgium.

## 3 DEFINITIONS

SDS: Safety Data Sheet

Carcinogen: A **carcinogen** is a substance that can cause cancer or increase the frequency of cancer in a population exposed to this substance.

Mutagenic: A **mutagenic** (amalgamation of mutation and genesis) is a chemical that damages DNA and can cause hereditary changes

Reprotoxic: **Reprotoxic** substances are chemicals that can have a detrimental effect on the fertility and reproductive system of workers.

According to Vlarem, a "storage facility" is the place where "dangerous products" are stored in fixed containers or in mobile containers in a quantity that exceeds the daily consumption (24 hours); The following definitions apply:

- fixed containers: containers that are filled or refilled at the place of use.
- mobile containers: containers which are filled or refilled in a place other than the place of use.

Transport vehicles and appliances in which the hazardous substance is present to undergo an operation (e.g. production) do not count as storage facilities.

An open storage facility is a storage facility in the open air or in a space that is closed for a maximum of 3/4 of the perimeter. The other repositories are closed repositories.

## VV 23 SAFETY REQUIREMENT

### Use and storage of hazardous substances



## 4 PRESCRIPTION

### 4.1 Requirements for the use of dangerous substances










Hazardous substances are the substances marked in KB 11.1.93 and later amendments with a symbol as below.

- The use of dangerous substances should be avoided as much as possible.
- The use of dangerous substances is only permitted if:
  - the Safety Data Sheet (SDS) is available;
  - the substances are labelled with the indications of danger
  - The people who have to work with the substance are aware of the risks and they observe the recommended precautions.
- In case hazardous substances are used in a **confined space**, a risk analysis must be carried out in which the dangers and precautions to prevent fire/explosion or poisoning or other injuries are specifically stated.
- The 'points of attention for use' mentioned in the table below must be taken into account.
- Substances classified as (very) toxic and substances that can cause long-term health damage are only permitted after explicit approval by the Nyrstar Medical department. This includes, in particular, substances known to be **carcinogenic, mutagenic or reprotoxic**. In order to obtain that approval, it will have to be demonstrated that there are no alternatives.
- The use of **HF (hydrogen fluoride)** (e.g. as passivation liquid or paste) is not permitted.
- Acetylene/oxygen bottles on welding carts should always be driven to a safe location after work has been completed due to the risks for emergency responders.
- Only the daily supply of the dangerous substance may be present at the workplace. Other stock must be stored as described below.

## VV 23 SAFETY REQUIREMENT

### Use and storage of hazardous substances



Hazard label		Point of attention when using
CLP marking		
 GHS01	Explosion	
 GHS02	Incendiary	In combination with fire-hazardous work: <b>MEDIUM-HIGH RISK ZONE</b> for both present work and adjacent works
 GHS03	Oxidizing	In combination with fire-hazardous work: <b>MEDIUM-HIGH RISK ZONE</b> for both current work and adjacent works
 GHS04	Pressurized holder	
 GHS05	Corrosive	Follow Safety Instructions VV04, keep <b>BUMB</b> nearby.
 GHS06	Poisonous	Only after explicit permission by <b>Nyrstar MEDICAL department</b>
 GHS07	Harmful	
 GHS08	Long-term healthis harmful	Only after explicit permission by <b>Nyrstar MEDICAL department</b>
 GHS09	Environmentally hazardous	Take precautions against spills.

## VV 23 SAFETY REQUIREMENT

### Use and storage of hazardous substances



## 4.2 Storage of hazardous solids in bulk

Solids in bulk, which contain leachable substances, are stored on a liquid-tight surface, equipped with a collection system.

## 4.3 Storage of hazardous liquids

### 4.3.1 Tank requirements

Above-ground tanks and/or vessels containing hazardous liquids must be placed in a bund that meets the following conditions:

- the floors and walls must be resistant to the effects of the stored liquids and must be able to withstand the liquid mass which, in the event of leakage, can escape from the largest tank and/or vessel placed in the bund
- Pipes or pipes may be passed through the walls only if adequate seals are used.
- Movable receptacles and tanks
  - *As a general rule, it is assumed that the receptacle of movable vessels/tanks must have a capacity of at least 25% of the total capacity of the vessels placed in it; This receptacle must also be able to absorb at least the capacity of the largest vessel placed above it.*

In addition, for tanks and vessels with a water capacity of more than 220 litres:

- a minimum distance equal to half the height of the tanks and/or vessels shall be left between the tank and the inner bottom of the walls.
- a passage of at least 1 meter width between the tanks, the barrel storage and the walls are completely released

In the event of repair of one of the tanks belonging to a group of tanks and/or vessels arranged in the same bund, this tank must be surrounded by a liquid-tight wall throughout the repair period, the height of which is equal to that of the raised edge and/or walls surrounding the whole group.

The substances present in one bund must not be capable of giving rise to dangerous reactions between them (e.g. no acids and bases together in one bund).

Single-walled storage tanks are placed inside a bund. Double-walled holders are equipped with a permanent leak detection system.

The container must be equipped with an overfill protection .

## VV 23 SAFETY REQUIREMENT

### Use and storage of hazardous substances



#### 4.3.2 Distance rules

	heeft voorrang op		heeft voorrang op		heeft voorrang op		heeft voorrang op		heeft voorrang op	
GHS02		GHS06		GHS05		GHS08		GHS07		GHS09

Bepaal scheidingsafstanden volgens onderstaande tabel  
a.h.v. gevarenpictogrammen die voorrang hebben

	GHS02	3 m	1 m	3 m	1 m	1 m
	3 m	GHS06	1 m	0 m	0 m	0 m
	1 m	1 m	GHS05	1 m	1 m	1 m
	3 m	0 m	1 m	GHS08	0 m	0 m
	1 m	0 m	1 m	0 m	GHS07	0 m
	1 m	0 m	1 m	0 m	0 m	GHS09

#### 4.3.3 Pitch for tankers

The pitch for tankers:

- be sufficiently load-bearing and liquid-tight;
- be provided with the necessary slopes and possibly raised edges, so that all spilled liquids drain into a collection system;
- The disposal of the collected liquids shall be carried out in accordance with the regulatory provisions, in particular as regards the disposal of the waste.

## VV 23 SAFETY REQUIREMENT

### Use and storage of hazardous substances



#### 4.3.4 Inspection obligation

After installation, but before the container is put into service, it shall be checked that the container, the pipes and accessories, the overfill warning or protection system, the bund and the fire-fighting equipment and, where appropriate, the leak detection system and the vapour recovery devices present comply with the requirements of this Regulation.

It must also be ensured that the periodic inspection obligation is met.

All documents (including inspection reports) must be kept available and also transmitted to the Reliability Department.

### 4.4 Storage of gases (incl. mobile containers)

#### 4.4.1 Distance rules

This includes compressed, liquefied or dissolved gases in movable receptacle (gas cylinder).

For open and closed storage areas, gases of a different group must be stored in a separate compartment (indicated by markings, chains, walls...).

Gases from different groups may be stored in the same storage facility if distance rules are respected (see below). The distance rules differ depending on the nature of the storage facility (open/closed) and the gases stored.

Persons employed must be aware of the nature of products stored and of measures to be taken in the event of irregularities.

INDELING GASSEN			
Gassen worden ingedeeld in 4 groepen:			
Groep 1: ontvlambare gassen (bijv. acetyleen, propaan, butaan)	Groep 2: acuut toxische gassen (bijv. ammoniak)	Groep 3: oxiderende gassen (bijv. zuurstof)	Groep 4: overige gassen (bijv. argon, stikstof, helium)
			

## VV 23 SAFETY REQUIREMENT

### Use and storage of hazardous substances



#### MINIMALE SCHEIDINGSAFSTANDEN VOOR DE OPSLAG VAN GASFLESSEN (VLAREM II, BIJLAGE 1 - RUBRIEK 17.1.2.1.)

- Bepaal het prioritaire gevarenpictogram op basis van de volgende voorrangsregel:



heeft  
voorrang  
op



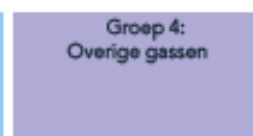
heeft  
voorrang  
op



heeft  
voorrang  
op

overige  
gevarenpictogrammen

- Deel de gasen in één van de volgende groepen in op basis van het prioritaire gevarenpictogram:



- Bepaal de minimale scheidingsafstand<sup>(1,2)</sup> aan de hand van onderstaande tabel:

gasen van:	groep 1	groep 2	groep 3	groep 4
gasen van groep 1	0 m	5 m / 0 m ***	2 m (C) / 5 m (G) 5 m * 7,5 m **	0 m
gasen van groep 2	5 m / 0 m ***	0 m	0 m	0 m
gasen van groep 3	2 m (C) / 5 m (G) 5 m * 7,5 m **	0 m	0 m	0 m
gasen van groep 4	0 m	0 m	0 m	0 m
limieten eigendom	3 m 5 m * 7,5 m **	7,5 m	2 m	2 m
lokalen zonder open vuurverbod	3 m 5 m * 7,5 m **	7,5 m	5 m	2 m
opslag brandbare stoffen	5 m	5 m/2 m***	5 m	2 m
opslag brandbare vloeistoffen bovengronds	5 m	5 m/2 m***	5 m	2 m
opslag vloeistoffen en vaste stoffen gekenmerkt door GH502 bovengronds	7,5 m	7,5 m/2 m***	7,5 m	2 m
opslag vloeistoffen en vaste stoffen gekenmerkt door GH502 ondergronds	2 m	0 m	0 m	0 m
tank vloeibare zuurstof	5 m 7,5 m * 7,5 m **	2 m	2 m	2 m
tank vloeibare stikstof of argon	2 m	2 m	2 m	2 m
tank vloeibare waterstof	5 m 7,5 m * 7,5 m **	7,5 m/2 m***	7,5 m	2 m

\* opslagcapaciteit meer dan 1.000 liter – \*\* opslagcapaciteit meer dan 5.000 liter  
\*\*\* acut toxic gasen gevaarcat. 1 / overige gevaarcat. 2 van groep 2  
(C) open opslagplaats / (G) gesloten opslagplaats

(1) De afstanden mogen verminderd worden door de constructie van een veiligheidscherm, op voorwaarde dat de afstand die horizontaal omheen dit scherm wordt gemeten minstens gelijk is aan de minimale scheidingsafstanden. Voor opslagplaatsen in open lucht t.e.m. 10.000 liter volstaat een dicht en onbrandbaar scherm.

Veiligheidscherm

= metaalwerk > 18 cm dikte of beton > 10 cm dikte of equivalente brandweerstandcoëfficiënt

= hoogte > 2m en minimaal 0,5 m boven recipiënt (open opslagplaats) of hoogte > 3m en minimaal 1m boven recipiënt (gesloten opslagplaats)

(2) De scheidingsafstanden zijn niet van toepassing bij opslag < 300 liter



## **VV 23 SAFETY REQUIREMENT**

### **Use and storage of hazardous substances**



#### **4.4.2 Inspection obligation**

After installation, but before the container is put into service, compliance with the requirements of these regulations must be checked.

It must also be ensured that the periodic inspection obligation is met.

All documents (including inspection reports) must be kept available and also transmitted to the Reliability Department.