

Klorgasutsläpp vid en offentlig simbassäng.

940222

Mycket kortfattad.

Vid förväxling av förpackningar av natriumhypoklorit och väteklorid kom dessa två kemikalier att blandas och klorgas att utvecklas. Vätekloridtanken i anslutning till simbassängen används för att kontrollera bassängens pH. Klorgasen spreds genom ventilationssystemet och nådde allmänheten. Åtta barn skadades lindrigt av klorgasen.

Inblandade ämnen och mängder

	CAS Nr.	Mängd
natriumhypoklorit	7681-52-9	okänt
väteklorid	7647-01-0	okänt
klorgas	7782-50-5	okänt

Skador:

Människor: Åtta barn skadades lindrigt av klorgasen.

Materiella: Inga rapporterade.

Miljö/ekologi: Inga effekter rapporterade.

Infrastruktur: Inga effekter rapporterade.

Erfarenheter redovisade (Ja/Nej): Nej

Report Profile

Identification of Report:

country: FA ident key: 1800_004_01

reported under Seveso I directive as major accident reports: SHORT+FULL

Date of Major Occurrence: Time of Major Occurrence

start: 22/02/1994 start: 08:55:00

finish: 22/02/1994 finish:

Establishment:

name:

address:

industry: 2022 fairgrounds/amusements

public swimming pool

Seveso II status: not applicable: Yes art. 6 (notification): No

art. 7 (MAPP): No

art. 9 (safety report): No

Date of Report:

short: full:

Authority Reporting:

name:

address:

Authority Contact:

rep_cont_name:

rep_cont_phone:

rep_cont_fax:

Additional Comments:

a) - not applicable -

b) - not applicable -

c) - not applicable -

d) - not applicable -

e) - not applicable -

Short Report

country: FA ident key: 1800_004_01

Accident Types:

release: Yes explosion: No

water contamination: No other: No

fire: No

description:

8 children affected

Substance(s) Directly Involved:

toxic: Yes explosive: No

ecotoxic: No other: No

flammable: No

description:

chlorine

Immediate Sources of Accident:

storage: Yes transfer: No

process: No other: No

description:

Erroneous mixture of inter-reacting products

Suspected Causes:

plant or equipment: No environmental: No

human: Yes other: No

description:

disregard of the risk

Immediate Effects:

material loss: No

human deaths: No

human injuries: Yes community disruption: No

other: No

ecological harm: No

national heritage loss: No

description:

8 children affected

Emergency Measures taken:

on-site systems: No **decontamination:** No

external services: No **restoration:** No

sheltering: No **other:** Yes

evacuation: No

description:

the 8 victims were hospitalised

Immediate Lessons Learned:

prevention: Yes **other:** No

mitigation: Yes

description:

Choice of different packaging of the products in order to avoid the risk of confusion (human error); sealing of the openings allowing toxic gas to diffuse from the operation room to the rooms which are open to the public.

A Occurrence Full Report

country: FA **ident key:** 1800_004_01

1 Type of Accident

remarks: - not applicable -

2 Dangerous Substances

remarks: An operator chose a wrong container and poured some litres of sodium hypochlorite in the hydrogen chloride tank.

3 Source of Accident

illustration: no attached materials

remarks: the hydrogen chloride tank is part of the equipment for controlling the pH of the swinging pool water.

4 Meteorological Conditions

precipitation none: fog: rain: hail: snow:

No No No No No

wind speed (m/s):

direction (from):

stability (Pasquill):

ambient temperature (°C):

remarks: - not applicable -

5 Causes of Major Occurrence

main causes

technical / physical - not applicable -

- not applicable -

- not applicable -

- not applicable -

- not applicable -

human / organizational 5401 person: operator error

5303 organization: organized procedures (none, inadequate, inappropriate, unclear)

- not applicable -

- not applicable -

- not applicable -

remarks: - not applicable -

6 Discussion about the Occurrence

- not applicable -

Type of Accident country: FA ident key: 1800_004_01

event:

major occurrence 1101 release: gas/vapour/mist/etc release to air

initiating event - not applicable -

associated event - not applicable -

Dangerous substances

country: FA ident key: 1800_004_01

a) total establishment inventory

CAS number: 7647-01-0 **identity:**

name from Seveso I Directive: Hydrogen chloride (liquefied gas)

name from Seveso II Directive: Hydrogen chloride (liquefied gas)

category from Seveso II: toxic

other hazards (1): - not applicable -

other hazards (2): - not applicable -

maximum quantity (tonnes): 0

use of substance as: starting material

b) substance belongs to relevant inventory directly involved: Yes

actual quantity: 0 **potential quantity:** 0

c) substance belongs to relevant inventory indirectly involved: No

actual quantity: 0 **indir_pot_quant:** 0

a) total establishment inventory

CAS number: 7681-52-9 **identity:** sodium hypochlorite

name from Seveso I Directive: - not applicable -

name from Seveso II Directive: - not applicable -

category from Seveso II: - not applicable -

other hazards (1): - not applicable -

other hazards (2): - not applicable -

maximum quantity (tonnes): -1

use of substance as: starting material

b) substance belongs to relevant inventory directly involved: Yes

actual quantity: -1 **potential quantity:** -1

c) substance belongs to relevant inventory indirectly involved: No

actual quantity: 0 **indir_pot_quant:** 0

a) total establishment inventory

CAS number: 7782-50-5 **identity:**

name from Seveso I Directive: Chlorine

name from Seveso II Directive: Chlorine

category from Seveso II: toxic

other hazards (1): - not applicable -

other hazards (2): - not applicable -

maximum quantity (tonnes): 3

use of substance as: starting material

b) substance belongs to relevant inventory directly involved: Yes

actual quantity: -1 **potential quantity:** -1

c) substance belongs to relevant inventory indirectly involved: No

actual quantity: 0 **indir_pot_quant:** 0

Source of Accident - Situation country: FA **ident key:** 1800_004_01

situation

industry

initiating event 2022 fairgrounds/amusements

associated event - not applicable -

activity/unit

major occurrence 3201 storage: process-associated (stockholding, etc. on-site of manufacture)

initiating event - not applicable -

associated event - not applicable -

component

major occurrence 4003 container; non-pressurised (hopper, tank, drum, bag, etc.)

initiating event - not applicable -

associated event - not applicable -

B Consequences Full Report

country: FA ident key: 1800_004_01

1 Area concerned

affected

extent of effects installation: Yes

establishment: Yes

off-site; local: No

off-site; regional: No

off-site; transboundary: No

illustration of effects no information is given

remarks the chlorine gas diffused into the rooms accessible to the public through the ve... see Appendix

Full Report B / area concerned - remarks

2 People

establishment popul. emergency personnel off-site population

total at risk 25 -1 0

immediate fatalities 0 0 0

subsequent fatalities 0 0 0

hospitalizing injuries 8 0 0

other serious injuries 0 0 0

health monitoring 0 0 0

remarks 25 high school students were in the swimming pool, 8 students were affected... see Appendix Full

Report B / people

3 Ecological Harm

pollution/contamination/damage of:

- residential area (covered by toxic cloud) No

- common wild flora/fauna (death or elimination) No

- rare or protected flora/fauna (death or elimination) No

- water catchment areas and supplies for consumption or recreation No

- land (with known potential for long term ecological harm or No

preventing human access or activities)

- marine or fresh water habitat No

- areas of high conservation value or given special protection No

remarks - not applicable -

4 National Heritage Loss

effects on:

- historical sites None - historic monuments None

- historic buildings None - art treasures None

remarks - not applicable -

5 Material Loss

establishment losses off site losses

costs (direct costs to operator) (social costs)

in ECU FFR ECU FFR

material losses -1 -1 -1 -1

response, clean up, restoration -1 -1 -1 -1

remarks - not applicable -

6 Disruption of Community Life

establishment/plant evacuated disabled/unoccupiable destroyed

- nearby residences/hotels No No No

- nearby factories/offices/small shops No No No

- schools, hospitals, institutions No No No

- other places of public assembly No No No

interruption of utilities etc. no / yes duration

- gas No

- electricity No

- water No

- sewage treatment works No

- telecommunications No

- main roads No

- railways No

- waterways No

- air transport No

significant public concern none local level national level

- off site populations No No No

- media interest No Yes No

- political interest No No No

remarks - not applicable -

7 Discussion of Consequences

- not applicable -

Ecological Components involved

country: FA ident key: 1800_004_01

type: - not applicable -

threatened: not applicable affected: No

C Response Full Report

country: FA ident key: 1800_004_01

1 Emergency Measures

taken - on site - not applicable - - not applicable -

- not applicable - - not applicable -

- not applicable - - not applicable -

- **off site** - not applicable - - not applicable -

- not applicable - - not applicable -

- not applicable - - not applicable -

still - on site - not applicable - - not applicable -

required

- not applicable - - not applicable -

- not applicable - - not applicable -

- **off site** - not applicable - - not applicable -

- not applicable - - not applicable -

- not applicable - - not applicable -

continuing contamination or danger

-**on site** not applicable

-**off site** not applicable

remarks - not applicable -

2 Seveso II Duties

pre-accident evaluation

Article item not due yet not done done/submitted evaluated

6 notification No No No No

7 policy (MAPP) No No No No

9 safety report No No No No

9, 10, 11 update No No No No

11 internal plan No No No No

11 external plan No No No No

13 informing public No No No No

9, 12 siting policy No No No No

post-accident evaluation

Seveso II duty was actual were actual compared with actual

contingency consequences consequences, the

addressed? addressed? predicted extent was?

Article item

7 policy (MAPP) not applicable not applicable not applicable

9 current safety report not applicable not applicable not applicable

11 internal plan not applicable not applicable not applicable

11 external plan not applicable not applicable not applicable

13 informing public not applicable not applicable not applicable

9, 12 siting policy not applicable not applicable not applicable

evaluation of safety organisation

organisational element element existed did element relate to actual circumstances of

yes / no no / partly / yes adequate?

- written policy objectives No

- specified management No

structure

- specified responsibilities No

- specified working procedures No

- specified procedures for No

assessment/auditing of

management system

- specified procedures for No

review and update of

management policy

- specified general training No

procedures

- specified emergency No

training procedures

evaluation of ecological impact control

organisational element element existed did element relate to actual circumstances of

yes / no no / partly / yes adequate?

- ecological status review No

before incident

- potential ecological No

consequences assessment

- ecological impact review No

after incident

- ecological restoration No

procedures

- subsequent review of No

restoration success

remarks - not applicable -

3 Official Action Taken

legal action

- not applicable -

other official action

- not applicable -

4 Lessons Learned

measures to prevent recurrence

use of different packaging for... see Appendix Full Report C / lesson learned - prevent

measures to mitigate consequences:

isolation of the ventilation s... see Appendix Full Report C / lesson learned - mitigate

useful references:

none mentioned

5 Discussion about Response

- not applicable -

Appendices for the FA / 1800_004_01 report

Appendix Full Report B / area concerned - remarks:

the chlorine gas diffused into the rooms accessible to the public through the ventilation system

Appendix Full Report B / people:

25 high school students were in the swimming pool, 8 students were affected

Appendix Full Report C / lesson learned - prevent:

use of different packaging for the chemical products in order to avoid confusion

Appendix Full Report C / lesson learned - mitigate:

isolation of the ventilation system of the swimming pool