

Giftig brandrökutveckling till följd av brand i ett lager för konstgödningsämnen.

860111 MARS 1800_001_004

Brand upptäcktes vid 5-tiden på morgonen i ett lager för konstgödningsämnen. Till följd av räddningstjänstens snabba ingripande begränsades branden till ett av åtta lagerutrymmen. Lagerlokalen var en träbyggnad indelad i åtta utrymmen för lagring av olika konstgödningsämnen och ammoniumnitrat. Det fanns 620 ton konstgödningsämnen (13% N, 13% P, 21% K) i det brandhärjade utrymmet. De utvecklade brandgaserna skingrades inom ett par timmar. Brandgaserna innehöll okända halter av toxiska förbränningsprodukter som nitrosera gaser, klorgas, ammoniak och salpetersyra. Evakuering av närliggande bebyggelse kunde undvikas till följd av gynnsam vindriktning.

Inblandade ämnen och mängder

	CAS Nr.	Mängd
Konstgödsel (13% N,13% P,21% K)		620 ton
Förbränningsprodukter:		
Kväveoxider	10024-97-2 [N ₂ O] 10102-43-9 [NO] 10102-44-0 [NO ₂]	Okänt
Salpetersyra	7697-37-2	Okänt
Klor	7782-50-5	Okänt
Ammoniak	7664-41-7	Okänt

Skador:

Människor:	Inga personskador.
Materiella:	Anläggningen skadades, men uppgifter om kostnader saknas.
Miljö/ekologi:	Inga skador rapporterade.
Infrastruktur:	Brandgaserna skingrades efter några timmar; ingen evakuering nödvändig pga gynnsam vindriktning.

Erfarenheter redovisade (Ja/Nej): Nej

Report Profile

Identification of Report:

country: FA ident key: 1800_001_04

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

Date of Major Occurrence: Time of Major Occurrence

start: 11/01/1986 start: 05:00:00

finish: 11/01/1986 finish:

Establishment:

name:

address:

industry: 2008 wholesale and retail storage and distribution (incl. LPG bottling & bulk distrib., more: F1!)

Chemical Fertilizers Storage

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_001_04

Accident Types:

release: Yes **explosion:** No

water contamination: No **other:** No

fire: Yes

description:

A fire occurred in a compartment of a storehouse for chemical fertilizers. The storehouse was a hangar subdivided into 8 compartments separated one from the other by wooden walls. In one of the compartment (Nø 5), where several hundreds ton... see Appendix Short Report / description of accident types

Substance(s) Directly Involved:

toxic: Yes **explosive:** No

ecotoxic: No **other:** No

flammable: Yes

description:

- Fertilizing Compounds (13% N,13% P,21% K): amount involved = 620 tonnes (this amount refers to the inventory of fertilizing compounds in compartment Nø 5 involved in the fire).... see Appendix Short Report / description of substances involved

Immediate Sources of Accident:

storage: Yes **transfer:** No

process: No **other:** No

description:

The accident occurred in a compartment (Nø 5) of a storehouse for chemical fertilizers. The storehouse was a hangar subdivided into 8 compartments separated one from the other by wooden walls. The compartments contained different compound f... see Appendix Short Report / description of immediate sources

Suspected Causes:

plant or equipment: No **environmental:** No

human: No **other:** Yes

description:

CAUSES:

The causes of the fire have not been identified.

Immediate Effects:

material loss: Yes

human deaths: No

human injuries: No **community disruption:** No

other: No

ecological harm: No

national heritage loss: No

description:

MATERIAL LOSS:... see Appendix Short Report / description of immediate effects

Emergency Measures taken:

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

external services: No **restoration:** No

sheltering: No **other:** No

evacuation: No

description:

INTERNAL TO THE ESTABLISHMENT:... see Appendix Short Report / description of emergency measures taken

Immediate Lessons Learned:

prevention: No **other:** Yes

mitigation: No

description:

When the Original Report was prepared, the manufacturer was proceeding to an investigation.

A Occurrence Full Report

country: FA **ident key:** 1800_001_04

1 Type of Accident

remarks: A fire (code 1201) occurred in one of the compartment (Nø 5) of a storehouse where several hundreds tonnes of fertilizers were stored. The rapid intervention of the fire brigade limited the fire to compartment Nø 5. The fire produced a smok... see Appendix Full Report A / type of accident

2 Dangerous Substances

remarks: The total establishment and the potential directly involved inventories of

fertilizing compounds (13% N, 13% P, 21% K) refer to the amount contained in compartment Nø 5. The amounts of ammonium nitrate and the others fertilizers refer to th... see Appendix Full Report A / dangerous substances

3 Source of Accident

illustration: - not applicable -

remarks: The accident occurred in a compartment (Nø 5) of a storehouse for chemical fertilizers (codes 2004 and 3202). The components involved were the fertilizers containers (code 4003). The storehouse was a hangar subdivided into 8 compartments se... see Appendix Full Report A / source of accident - remarks

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: The smoke produced by the fire (containing toxic combustion products such as chlorine, nitrogen oxides, ammonia, nitric acid) took some hours to disperse but the evacuation of the population was not necessary due to favourable wind directio... see Appendix Full Report A / meteorological conditions

5 Causes of Major Occurrence

main causes

technical / physical - not applicable -

- not applicable -

- not applicable -

- not applicable -

- not applicable -

human / organizational - not applicable -

- not applicable -

- not applicable -

- not applicable -

- not applicable -

remarks: The causes of the fire have not been identified (code 5501).

6 Discussion about the Occurrence

- not applicable -

Type of Accident country: FA ident key: 1800_001_04

event:

major occurrence 1401 other: combustion products into air

initiating event - not applicable -

associated event - not applicable -

event:

major occurrence 1201 fire: conflagration (a general engulfment fire)

initiating event 1201 fire: conflagration (a general engulfment fire)

associated event - not applicable -

event:

major occurrence 1201 fire: conflagration (a general engulfment fire)

initiating event - not applicable -

associated event - not applicable -

Dangerous substances

country: FA **ident key:** 1800_001_04

a) total establishment inventory

CAS number: identity: Nitrogen oxides

name from Seveso I Directive: Nitrogen oxides

name from Seveso II Directive: - not applicable -

category from Seveso II: very toxic

other hazards (1): - not applicable -

other hazards (2): - not applicable -

maximum quantity (tonnes): -1

use of substance as: ABNORMAL PRODUCT

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: -1 **indir_pot_quant:** -1

a) total establishment inventory

CAS number: 7697-37-2 identity: Nitric Acid

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: ABNORMAL PRODUCT

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: -1 **indir_pot_quant:** -1

a) total establishment inventory

CAS number: identity: Fertilizers(6% N,10% P,10% K)

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): 510

use of substance as: NORMAL FINISHED PRODUCT

b) substance belongs to relevant inventory directly involved: Yes

actual quantity: -1 **potential quantity:** 510

c) substance belongs to relevant inventory indirectly involved: No

actual quantity: -1 **indir_pot_quant:** -1

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): -1

use of substance as: ABNORMAL PRODUCT

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: -1 **indir_pot_quant:** -1

a) total establishment inventory

CAS number: 6484-52-2 **identity:**

name from Seveso I Directive: Ammonium nitrate

name from Seveso II Directive: Ammonium nitrate

category from Seveso II: oxidising

other hazards (1): explosive R2

other hazards (2): - not applicable -

maximum quantity (tonnes): 1280

use of substance as: NORMAL FINISHED PRODUCT

b) substance belongs to relevant inventory directly involved: Yes

actual quantity: -1 **potential quantity:** 1280

c) substance belongs to relevant inventory indirectly involved: No

actual quantity: -1 **indir_pot_quant:** -1

a) total establishment inventory

CAS number: 1336-21-6 **identity:**

name from Seveso I Directive: Ammonia

name from Seveso II Directive: - not applicable -

category from Seveso II: toxic

other hazards (1): flammable liquids

other hazards (2): - not applicable -

maximum quantity (tonnes): -1

use of substance as: ABNORMAL PRODUCT

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: -1 **indir_pot_quant:** -1

a) total establishment inventory

CAS number: identity: Lpg

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): 760

use of substance as: NORMAL FINISHED PRODUCT

b) substance belongs to relevant inventory directly involved: Yes

actual quantity: -1 **potential quantity:** 25

c) substance belongs to relevant inventory indirectly involved: No

actual quantity: -1 **indir_pot_quant:** -1

a) total establishment inventory

CAS number: (8006-61-9) identity: Gasoline

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): 500

use of substance as: STARTING MATERIAL

b) substance belongs to relevant inventory directly involved: Yes

actual quantity: -1 **potential quantity:** 300

c) substance belongs to relevant inventory indirectly involved: No

actual quantity: -1 **indir_pot_quant:** -1

Source of Accident - Situation country: FA **ident key:** 1800_001_04

situation

industry

initiating event 2008 wholesale and retail storage and distribution (incl. LPG bottling & bulk distrib., more: F1!)

associated event - not applicable -

activity/unit

major occurrence 3202 storage: distribution-associated (not on-site of manufacture)

initiating event 3202 storage: distribution-associated (not on-site of manufacture)

associated event - not applicable -

component

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

initiating event 4003 container; non-pressurised (hopper, tank, drum, bag, etc.)

associated event - not applicable -

situation

industry

initiating event - not applicable -

associated event - not applicable -

activity/unit

major occurrence - not applicable -

initiating event - not applicable -

associated event - not applicable -

component

major occurrence - not applicable -

initiating event - not applicable -

associated event - not applicable -

B Consequences Full Report

country: FA **ident key:** 1800_001_04

1 Area concerned

affected

extent of effects installation: Yes

establishment: Yes

off-site; local: Yes

off-site; regional: No

off-site; transboundary: No

illustration of effects - not applicable -

remarks The smoke produced by the fire (containing toxic combustion products such as chl... see Appendix

Full Report B / area concerned - remarks

2 People

establishment popul. emergency personnel off-site population

total at risk -1 -1 -1

immediate fatalities 0 0 0

subsequent fatalities 0 0 0

hospitalizing injuries 0 0 0

other serious injuries 0 0 0

health monitoring 0 0 0

remarks No people were injured by the fire. The smoke produced by the fire (containing t... see Appendix

Full Report B / people

3 Ecological Harm

pollution/contamination/damage of:

- **residential area (covered by toxic cloud)** Suspected
- **common wild flora/fauna (death or elimination)** Suspected
- **rare or protected flora/fauna (death or elimination)** Suspected
- **water catchment areas and supplies for consumption or recreation** Suspected
- **land (with known potential for long term ecological harm or** Suspected

preventing human access or activities)

- **marine or fresh water habitat** Suspected
- **areas of high conservation value or given special protection** Suspected

remarks In the Original Report there is no evidence of significant ecological harms.... see Appendix

Full Report B / ecological harm

4 National Heritage Loss

effects on:

- **historical sites** not applicable - **historic monuments** not applicable
- **historic buildings** not applicable - **art treasures** not applicable

remarks No data available.

5 Material Loss

establishment losses off site losses

costs (direct costs to operator) (social costs)

in ECU BFr ECU BFr

material losses -1 -1 -1 -1

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

remarks The fire caused damages to the installation but no data are available about the ... see Appendix

Full Report B / material loss

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 Yes No

- **media interest** No No No

- **political interest** No No No

remarks The smoke produced by the fire (containing toxic combustion products such as chl... see Appendix

7 Discussion of Consequences

Ecological Components involved

country: FA **ident key:** 1800_001_04

type: - not applicable -

threatened: not applicable **affected:** not applicable

C Response Full Report

country: FA **ident key:** 1800_001_04

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

When the Original Report was p... see Appendix Full Report C / lesson learned - prevent

measures to mitigate consequences:

When the Original Report was p... see Appendix Full Report C / lesson learned - mitigate

useful references:

not given

5 Discussion about Response

- not applicable -

Appendices for the FA / 1800_001_04 report

Appendix Short Report / description of accident types:

A fire occurred in a compartment of a storehouse for chemical fertilizers. The storehouse was a hangar subdivided into 8 compartments separated one from the other by wooden walls. In one of the compartment (Nø 5), where several hundreds tonnes of fertilizers were stored, a fire occurred at 05:00 a.m. The rapid intervention of the fire brigade limited the fire to compartment Nø 5. The smoke produced by the fire (containing toxic combustion products such as chlorine, nitrogen oxides, ammonia, nitric acid) took some hours to disperse. The evacuation of the population was not necessary due to favourable wind direction.

Appendix Short Report / description of substances involved:

- Fertilizing Compounds (13% N,13% P,21% K): amount involved = 620 tonnes (this amount refers to the inventory of fertilizing compounds in compartment Nø 5 involved in the fire).

No data are available about the amount of the combustion products of the fertilizing compounds involved in the fire.

- Nitrogen Oxides (C.A.S. CODE: 10024-97-2 [N₂O], C.A.S. CODE: 10102-43-9 [NO], C.A.S. CODE: 10102-44-0 [NO₂]): amount involved = not known.

- Nitric Acid (C.A.S. CODE: 7697-37-2): amount involved = not known.

- Chlorine (C.A.S. CODE: 7782-50-5, E.E.C. CODE: 017-001-00-7): amount involved = not known.

- Ammonia (C.A.S. CODE: 7664-41-7, E.E.C. CODE: 007-001-00-5): amount involved = not known.

Appendix Short Report / description of immediate sources:

The accident occurred in a compartment (Nø 5) of a storehouse for chemical fertilizers. The storehouse was a hangar subdivided into 8 compartments separated one from the other by wooden walls. The compartments contained different compound fertilizers and ammonium nitrate (27%). The compartment Nø 2 was containing 550 tonnes of fertilizing compounds (11% N, 7% P, 18% K). The compartment Nø 3 was containing 530 tonnes of ammonium nitrate (27%). The compartment Nø 4 was containing 550 tonnes of ammonium nitrate (27%). The compartment Nø 5 was containing 620 tonnes of fertilizing compounds (13% N, 13% P, 21% K). The compartment Nø 6 was containing 558 tonnes of fertilizing compounds (20% N, 10% P, 10% K). The compartment Nø 7 was containing 510 tonnes of fertilizing compounds (6% N, 10% P, 10% K). The compartment Nø 8 was containing 200 tonnes of ammonium nitrate (27%).

Appendix Short Report / description of immediate effects:

MATERIAL LOSS:

The fire caused damages to the installation but no data are available about the cost of the material losses.

COMMUNITY DISRUPTION:

The smoke produced by the fire (containing toxic combustion products such as chlorine, nitrogen oxides, ammonia, nitric acid) took some hours to disperse but the evacuation of the population was not necessary due to favourable wind direction.

Appendix Short Report / description of emergency measures taken:

INTERNAL TO THE ESTABLISHMENT:

The rapid intervention of the fire brigade limited the fire to compartment Nø 5.

EXTERNAL TO THE ESTABLISHMENT:

The smoke produced by the fire (containing toxic combustion products such as chlorine, nitrogen oxides, ammonia, nitric acid) took some hours to disperse but the evacuation of the population was not necessary due to favourable wind direction.

Appendix Full Report A / type of accident:

A fire (code 1201) occurred in one of the compartment (Nø 5) of a storehouse where several hundreds tonnes of fertilizers were stored. The rapid intervention of the fire brigade limited the fire to compartment Nø 5. The fire produced a smoke (containing toxic combustion

products such as chlorine, nitrogen oxides, ammonia, nitric acid) that took some hours to disperse (code 1401).

Appendix Full Report A / dangerous substances:

The total establishment and the potential directly involved inventories of fertilizing compounds (13% N, 13% P, 21% K) refer to the amount contained in compartment Nø 5. The amounts of ammonium nitrate and the others fertilizers refer to the inventories stored in the other compartments that were not involved in the fire. No data are available about the amount of the toxic combustion products (ammonia, chlorine, nitric acid, nitrogen oxides) of the fertilizing compounds involved in the fire.

Appendix Full Report A / source of accident - remarks:

The accident occurred in a compartment (Nø 5) of a storehouse for chemical fertilizers (codes 2004 and 3202). The components involved were the fertilizers containers (code 4003). The storehouse was a hangar subdivided into 8 compartments separated one from the other by wooden walls. The compartments contained different compound fertilizers and ammonium nitrate (27%). The compartment Nø 5 was containing 620 tonnes of fertilizing compounds (13% N, 13% P, 21% K).

Appendix Full Report A / meteorological conditions:

The smoke produced by the fire (containing toxic combustion products such as chlorine, nitrogen oxides, ammonia, nitric acid) took some hours to disperse but the evacuation of the population was not necessary due to favourable wind direction.

Appendix Full Report B / area concerned - remarks:

The smoke produced by the fire (containing toxic combustion products such as chlorine, nitrogen oxides, ammonia, nitric acid) took some hours to disperse but the evacuation of the population was not necessary due to favourable wind direction.

Appendix Full Report B / people:

No people were injured by the fire. The smoke produced by the fire (containing toxic combustion products such as chlorine, nitrogen oxides, ammonia, nitric acid) took some hours to disperse but the evacuation of the population was not necessary due to favourable wind direction.

Appendix Full Report B / ecological harm:

In the Original Report there is no evidence of significant ecological harms.

Appendix Full Report B / material loss:

The fire caused damages to the installation but no data are available about the cost of the material losses.

Appendix Full Report B / disruption of community life:

The smoke produced by the fire (containing toxic combustion products such as chlorine, nitrogen oxides, ammonia, nitric acid) took some hours to disperse but the evacuation of the population was not necessary due to the favourable wind direction.

Appendix Full Report C / lesson learned - prevent:

When the Original Report was prepared, the manufacturer was proceeding to an investigation.

Appendix Full Report C / lesson learned - mitigate:

When the Original Report was prepared, the manufacturer was proceeding to an investigation.