

## Explosion och brand på ett lager för jordbrukskemikalier.

960806

Branden startade på lagerområdet, förmodligen till följd av att natriumklorat blandats med tjära, trä, eller någon annan brännbar substans. Räddningstjänsten använde vatten för att begränsa spridningen och släcka elden. Omfattande skador på ett 2000m<sup>2</sup> stort område. Lagerbyggnaden där branden startade raserades av branden.

### Inblandade ämnen och mängder

	CAS Nr.	Mängd
tjära	8007-45-2	okänt
herbicer		okänt
pesticider		okänt
trä		okänt
kompost/gödsel		okänt
natriumklorat	7775-09-9	okänt

### Skador:

Människor:	Fem personer rökförgiftades lindrigt.
Materiella:	Omfattande skador på ett 2000m <sup>2</sup> stort område. Lagerbyggnaden blev raserad av branden.
Miljö/ekologi:	Släckningsvattnet förorenade ytvattnet i den närliggande floden. Det förorenade vattnet uppsamlades för behandling.
Infrastruktur:	Inga effekter.

### Erfarenheter redovisade (Ja/Nej): Ja

Information concerning the following accidents: Stockvick Sweden -1971, Braehaed GB (UK) - 04/01/1977, Barking GB (UK) - 21/01/81, Salford GB (UK - 25/09/82, Koping Sweden - 05/12/88, St Louis de Monferrand France - 23/04/90. Use of the TNT-equivalent methodology.

## Report Profile

### Identification of Report:

country: FA ident key: 1800\_058\_01

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

### Date of Major Occurrence: Time of Major Occurrence

start: 06/08/1996 start: 15:30:00

finish: 06/08/1996 finish: 17:30:00

### Establishment:

name:

address:

industry: 2008 wholesale and retail storage and distribution (incl. LPG bottling & bulk

distrib., more: F1! )

storage of agrochemicals

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\_058\_01

**Accident Types:**

release: Yes explosion: Yes

water contamination: Yes other: No

fire: Yes

**description:**

fire with some explosions. Contamination of natural waters (surface water, river) through the extinguishing water and rain water

**Substance(s) Directly Involved:**

toxic: Yes explosive: Yes

ecotoxic: Yes other: No

flammable: Yes

**description:**

herbicides and pesticides (6500 referenced products)

**Immediate Sources of Accident:**

storage: Yes transfer: No

process: No other: No

**description:**

storage facility (warehouse)

**Suspected Causes:**

plant or equipment: No environmental: No

human: No other: Yes

**description:**

The fire started at the sodium chlorate storage sector, probably due to the mixture of the sodium chlorate with a combustible substance (wood, tar...)

**Immediate Effects:**

**material loss:** Yes

**human deaths:** No

**human injuries:** Yes **community disruption:** Yes

**other:** No

**ecological harm:** Yes

**national heritage loss:** No

**description:**

the establishment has been destroyed over a surface of 2000 square metres (2000 m2). The extinguishing water polluted the river (surface water), 5 persons were slightly intoxicated.

**Emergency Measures taken:**

**on-site systems:** Yes **decontamination:** Yes

**external services:** Yes **restoration:** No

**sheltering:** No **other:** No

**evacuation:** No

**description:**

Confinement and then release of the extinguishing water. Elimination of the fire residues (waste).

**Immediate Lessons Learned:**

**prevention:** Yes **other:** No

**mitigation:** Yes

**description:**

Change in (modification of) the storage procedures for sodium chlorate, modification of the intervention (response) procedures of the personnel, reconsideration (analysis) of the storage rules.

## A Occurrence Full Report

**country:** FA **ident key:** 1800\_058\_01

### 1 Type of Accident

**remarks:** - not applicable -

### 2 Dangerous Substances

**remarks:** - not applicable -

### 3 Source of Accident

**illustration:** A map showing the lay-out of the establishment and of the immediate surroundings is attached

**remarks:** - not applicable -

### 4 Meteorological Conditions

**precipitation none:** **fog:** **rain:** **hail:** **snow:**

Yes No No No No

**wind speed (m/s):**

**direction (from):**

**stability (Pasquill):**

**ambient temperature (°C):** 25

**remarks:** the atmosphere was calm (no wind)

## 5 Causes of Major Occurrence

**main causes**

**technical / physical** 5107 operation: unexpected reaction/phase-transition

- not applicable -

- not applicable -

- not applicable -

- not applicable -

**human / organizational** 5308 organization: design of plant/equipment/system (inadequate, inappropriate)

5311 organization: installation (inadequate, inappropriate)

- not applicable -

- not applicable -

- not applicable -

**remarks:** - not applicable -

## 6 Discussion about the Occurrence

- not applicable -

**Type of Accident** country: FA ident key: 1800\_058\_01

**event:**

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

**initiating event** 1104 release: solid release to ground

**associated event** - not applicable -

## Dangerous substances

country: FA ident key: 1800\_058\_01

### a) total establishment inventory

**CAS number:** 8007-45-2 **identity:** tar

**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:** normal finished 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: 0 indir\_pot\_quant: 0

**a) total establishment inventory**

CAS number: identity: herbicides

name from Seveso I Directive: - not applicable -

name from Seveso II Directive: - not applicable -

category from Seveso II: toxic

other hazards (1): - not applicable -

other hazards (2): - not applicable -

maximum quantity (tonnes): -1

use of substance as: normal finished product

**b) substance belongs to relevant inventory directly involved:** No

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: identity: pesticides

name from Seveso I Directive: - not applicable -

name from Seveso II Directive: - not applicable -

category from Seveso II: toxic

other hazards (1): - not applicable -

other hazards (2): - not applicable -

maximum quantity (tonnes): -1

use of substance as: normal finished product

**b) substance belongs to relevant inventory directly involved:** No

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: identity: wood

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: normal finished 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: 0 indir\_pot\_quant: 0

**a) total establishment inventory**

CAS number: identity: compost / manure

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: normal finished product

**b) substance belongs to relevant inventory directly involved:** No

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: 7775-09-9 identity:

name from Seveso I Directive: Sodium chlorate

name from Seveso II Directive: - not applicable -

category from Seveso II: oxidising

other hazards (1): - not applicable -

other hazards (2): - not applicable -

maximum quantity (tonnes): -1

use of substance as: normal finished 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: 0 indir\_pot\_quant: 0

**Source of Accident - Situation** country: FA ident key: 1800\_058\_01

**situation**

**industry**

**initiating event** - not applicable -

**associated event** - not applicable -

**activity/unit**

**major occurrence** 3202 storage: distribution-associated (not 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\_058\_01

### 1 Area concerned

**affected**

**extent of effects installation:** Yes

**establishment:** Yes

**off-site; local:** Yes

**off-site; regional:** Suspected

**off-site; transboundary:** No

**illustration of effects** no information is given

**remarks** the metallic frame (structure , framework) of the warehouses (storage buildings)... 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** 1 5 0

**other serious injuries** 0 0 0

**health monitoring** 0 0 0

**remarks** - not applicable -

### 3 Ecological Harm

**pollution/contamination/damage of:**

- residential area (covered by toxic cloud) Suspected

- common wild flora/fauna (death or elimination) Yes

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

- water catchment areas and supplies for consumption or recreation Yes

- 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 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 Yes 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\_058\_01

type: 6203 freshwater: stream/tributary

threatened: not applicable affected: Yes

type: 6106 inland: arable land/crops/vineyards/orchards

threatened: not applicable affected: Yes

type: 6105 inland: grassland/pasture/meadow

threatened: not applicable affected: Yes

## C Response Full Report

country: FA ident key: 1800\_058\_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**

elaboration -(determining, fix... see Appendix Full Report C / lesson learned - prevent

**measures to mitigate consequences:**

no information is given

**useful references:**

Information concerning the fol... see Appendix Full Report C / lesson learned - references

### **5 Discussion about Response**

- not applicable -

## **Appendices for the FA / 1800\_058\_01 report**

#### **Appendix Full Report B / area concerned - remarks:**

the metallic frame (structure , framework) of the warehouses (storage buildings) collapsed. The deformations are typical for a fire (conflagration). The fire-breaking wall separating the storage (warehouse) from the neighbouring (adjoining) building collapsed partly but without showing evidence ( any clear indication) that an explosion occurred.

#### **Appendix Full Report C / lesson learned - prevent:**

elaboration -(determining, fixing) of rules more adapted (effective) for the storage of sodium chlorate

#### **Appendix Full Report C / lesson learned - references:**

Information concerning the following accidents: Stockvick Sweden -1971, Braehaed GB (UK) - 04/01/1977, Barking GB (UK) - 21/01/81, Salford GB (UK - 25/09/82, Koping Sweden - 05/12/88, St Louis de Monferrand France - 23/04/90. Use of the TNT-equivalent methodology.