

Explosion i en reaktor på en fabrik för produktion av farmaceutika.

970908

Explosionen uppstod i en reaktor där en mellanprodukt för framställning av antihistamin producerades. En felaktig tillsats av en reagent (paraklorbenzaldehyd) gjordes på grund av en felaktig etikettering. Räddningstjänsten tillkallades och 50 brandmän bekämpade branden. Fortlöpande mätningar av luftens renhet gjordes.

Inblandade ämnen och mängder

	CAS Nr.	Mängd
paraklorbenzaldehyd		ca 100 kg
ortoklornitrobensen		
klorosvavelsyra	7790-94-5	okänt

Skador:

Människor: Fyra personer drabbades av irritation i ögon och hals.

Materiella: Inga skador.

Miljö/ekologi: Inga effekter rapporterade.

Infrastruktur: 500 personer i närområdet evakuerades.

Erfarenheter redovisade (Ja/Nej): Ja

Mycket kortfattat anges förebyggande åtgärd.

Report Profile

Identification of Report:

country: FA ident key: 1800_308_01

reported under Seveso I directive as other event (non-Seveso) reports: SHORT+FULL

Date of Major Occurrence: Time of Major Occurrence

start: 08/09/1997 start: 13:55:00

finish: 08/09/1997 finish:

Establishment:

name:

address:

industry: 2004 pesticides, pharmaceuticals, other fine chemicals

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_308_01

Accident Types:

release: No explosion: Yes

water contamination: No other: No

fire: No

description:

Explosion of a reactor in a chemical plant.

Substance(s) Directly Involved:

toxic: Yes explosive: No

ecotoxic: No other: No

flammable: Yes

description:

Chlorosulphonic acid, orthochloronitrobenzen, parachlorobenzaldehyd

Immediate Sources of Accident:

storage: No transfer: No

process: Yes other: No

description:

Reactor to synthesise an intermediate compound for an antihistaminic medicine.

Suspected Causes:

plant or equipment: No environmental: No

human: Yes other: No

description:

Wrong loading of one drum of raw compound (wrong labelling)

Immediate Effects:

material loss: No

human deaths: No

human injuries: Yes community disruption: No

other: Yes

ecological harm: No

national heritage loss: No

description:

4 people suffering eye and throat irritation; Material damages.

Emergency Measures taken:

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

external services: Yes **restoration:** No

sheltering: No **other:** No

evacuation: Yes

description:

500 nearby people evacuated. 50 firemen fighting the blaze. Monitoring of the airborne pollution.

Immediate Lessons Learned:

prevention: Yes **other:** No

mitigation: No

description:

Attention for the safety in the fine chemistry.

A Occurrence Full Report

country: FA **ident key:** 1800_308_01

1 Type of Accident

remarks: Explosion following the mixing of 2 reactants.

2 Dangerous Substances

remarks: The quantity of sulfonic acide involved is not known. The quantity of parachlorobenzaldehyd involved (wrongly) is about 100 kg.

3 Source of Accident

illustration: Please specify the attached materials illustrating the location of the establishment, relevant installation(s) and relevant surrounding geographical features.

remarks: - not applicable -

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 5301 organization: management organization inadequate

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

5305 organization: supervision (none, inadequate, inappropriate)

5306 organization: staffing (inadequate, inappropriate)

5401 person: operator error

remarks: - not applicable -

6 Discussion about the Occurrence

- not applicable -

Type of Accident country: FA ident key: 1800_308_01

event:

major occurrence - not applicable -

initiating event - not applicable -

associated event - not applicable -

Dangerous substances

country: FA ident key: 1800_308_01

a) total establishment inventory

CAS number: identity: parachlorbenzaldEhyde

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: - not applicable -

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: Orthochloronitrobenzene

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: identity: acide chlorosulfonique

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

Source of Accident - Situation country: FA ident key: 1800_308_01

situation

industry

initiating event - not applicable -

associated event - not applicable -

activity/unit

major occurrence 3101 process: chemical batch reaction

initiating event - not applicable -

associated event - not applicable -

component

major occurrence 4001 reaction vessel; non-pressurised

initiating event - not applicable -

associated event - not applicable -

B Consequences Full Report

country: FA ident key: 1800_308_01

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 please specify the attached materials illustrating the geographical extent

of th... see Appendix Full Report B / area concerned - illustration of effects

remarks The cloud of toxic smoke drifted towards residential areas... 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 4 0 0

subsequent fatalities 0 0 0

hospitalizing injuries 0 0 0

other serious injuries 0 0 0

health monitoring 0 0 0

remarks 4 people were hospitalized because of eyes and throat pains.... 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 No other consequence on the environment was noticed.... see Appendix Full Report B / ecological harm

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 FRF ECU FRF

material losses -1 -1 -1 -1

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

remarks The cost of the accident is not known yet.

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 Yes No

- political interest Yes No No

remarks - not applicable -

7 Discussion of Consequences

Ecological Components involved

country: FA **ident key:** 1800_308_01

type: - not applicable -

threatened: not applicable **affected:** No

C Response Full Report

country: FA **ident key:** 1800_308_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

Attention for the risks of fin... see Appendix Full Report C / lesson learned - prevent

measures to mitigate consequences:

See recommendations attached.

useful references:

See 4b

5 Discussion about Response

- not applicable -

Appendices for the FA / 1800_308_01 report

Appendix Full Report B / area concerned - illustration of effects:

please specify the attached materials illustrating the geographical extent of the effects.

Appendix Full Report B / area concerned - remarks:

The cloud of toxic smoke drifted towards residential areas

Appendix Full Report B / people:

4 people were hospitalized because of eyes and throat pains.

Appendix Full Report B / ecological harm:

No other consequence on the environment was noticed.

Appendix Full Report C / lesson learned - prevent:

Attention for the risks of fine chemistry