

Utsläpp från en kemikaliefabrik.

950729

Under en polymerisationsreaktion skenade reaktionen och orsakade en tryckökning. Sprängblecket brast och reaktionsblandningen släpptes ut. Reaktionen syftade till produktion av fenol-formaldehyd-harts. Olyckan tillskrevs bristfällig processplanering.

Inblandade ämnen och mängder

	CAS Nr.	Mängd
natriumhydroxid	1310-73-2	okänt
fenol-formaldehyd harts		okänt
fenol	108-95-2	okänt
formaldehyd	50-00-0	

Skador:

Människor:	Inga skador rapporterade.
Materiella:	Inga skador rapporterade.
Miljö/ekologi:	Utsläppet drabbade närliggande grönsaksodlingar och parkerade bilar.
Infrastruktur:	Inga effekter rapporterade.

Erfarenheter redovisade (Ja/Nej): Nej

Report Profile

Identification of Report:

country: FA ident key: 1800_132_01

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

Date of Major Occurrence: Time of Major Occurrence

start: 29/07/1995 start: 15:00:00

finish: 29/07/1995 finish:

Establishment:

name:

address:

industry: 2001 general chemicals manufacture

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_132_01

Accident Types:

release: Yes **explosion:** No

water contamination: No **other:** No

fire: No

description:

A runaway reaction occurred in a polymerisation process causing an overpressure and the consequent rupture of a bursting disk. A part of the reaction mass was released. Pollution of vegetable gardens and of a corn field, damages to car bodi... see Appendix Short Report / description of accident types

Substance(s) Directly Involved:

toxic: Yes **explosive:** No

ecotoxic: No **other:** No

flammable: No

description:

Part of the reaction mass for the production of phenol-formaldehyde resins was released.

Immediate Sources of Accident:

storage: No **transfer:** No

process: Yes **other:** No

description:

Rupture of a bursting disk due to overpressure during the operational phase.

Suspected Causes:

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

human: Yes **other:** No

description:

Bad management of the chemical process and of the synthesising installations (inadequate procedures).

Immediate Effects:

material loss: Yes

human deaths: No

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

other: No

ecological harm: Yes

national heritage loss: No

description:

Fouling / contamination of the installation, of vehicles and neighbouring cultures.

Emergency Measures taken:

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

external services: Yes **restoration:** Yes

sheltering: No **other:** No

evacuation: No

description:

Cleaning of the fouled / contaminated areas.

Immediate Lessons Learned:

prevention: No **other:** No

mitigation: Yes

description:

The way of introduction of the reactants and the cooling capacity of the cooling system will have to be analysed. A risk assessment has to be performed.

A Occurrence Full Report

country: FA **ident key:** 1800_132_01

1 Type of Accident

remarks: A runaway reaction occurred in the polymerisation process causing an overpressure and the consequent rupture of the bursting disk. A part of the reaction mass was released.

2 Dangerous Substances

remarks: - not applicable -

3 Source of Accident

illustration: no attached materials

remarks: The capacity of the batch reactor was 15.2 m³. Normally the reactor is cooled by 2 "jackets". It is equipped with a bursting disk in case of dangerous overpressure (bursting pressure 1.5 bars).

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 5106 operation: runaway reaction

- not applicable -

- not applicable -

- not applicable -

- not applicable -

human / organizational 5401 person: operator error

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

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

- not applicable -

- not applicable -

remarks: The caustic soda which catalyses the reaction was introduced too fast. The cooling system was activated for a too long period of time (12 min) after the increase of temperature in the reaction mass.

6 Discussion about the Occurrence

- not applicable -

Type of Accident country: FA ident key: 1800_132_01

event:

major occurrence 1102 release: fluid release to ground

initiating event - not applicable -

associated event - not applicable -

event:

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

initiating event 1301 explosion: pressure burst (rupture of pressure system)

associated event - not applicable -

Dangerous substances

country: FA ident key: 1800_132_01

a) total establishment inventory

CAS number: 1310-73-2 **identity:** sodium hydroxide

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: 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: phenol-formaldehyde resin

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: 108-95-2 identity: phenol

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: 5 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: 50-00-0 identity: formaldehyde (formol)

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: starting material

b) substance belongs to relevant inventory directly involved: Yes

actual quantity: 7 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_132_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_132_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 no attached materials

remarks About 6 tonnes of the reaction mass were expelled up to 400 meters from the reac... 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 there have been no victims

3 Ecological Harm

pollution/contamination/damage of:

- residential area (covered by toxic cloud) not applicable
- common wild flora/fauna (death or elimination) not applicable
- rare or protected flora/fauna (death or elimination) not applicable
- water catchment areas and supplies for consumption or recreation not applicable
- land (with known potential for long term ecological harm or Suspected preventing human access or activities)
- marine or fresh water habitat not applicable
- areas of high conservation value or given special protection not applicable

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 0 0 0 0

response, clean up, restoration 0 0 0 0

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 Yes No

- media interest No No No

- political interest No No No

remarks - not applicable -

7 Discussion of Consequences

- not applicable -

Ecological Components involved

country: FA ident key: 1800_132_01

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

threatened: not applicable affected: Yes

C Response Full Report

country: FA ident key: 1800_132_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

The way of introduction of the... see Appendix Full Report C / lesson learned - prevent

measures to mitigate consequences:

no information is given

useful references:

no information is given

5 Discussion about Response

- not applicable -

Appendices for the FA / 1800_132_01 report

Appendix Short Report / description of accident types:

A runaway reaction occurred in a polymerisation process causing an overpressure and the consequent rupture of a bursting disk. A part of the reaction mass was released. Pollution of vegetable gardens and of a corn field, damages to car bodies due to the release.

Appendix Full Report B / area concerned - remarks:

About 6 tonnes of the reaction mass were expelled up to 400 meters from the reactor, fouling the premises of the company, the vehicles and the neighbouring cultured land.

Appendix Full Report C / lesson learned - prevent:

The way of introduction of the reactants and the cooling capacity of the cooling system will have to be analysed.