

Ett utsläpp av vinylklorid från en plastfabrik kunde undvikas.

810530 MARS 1800_42

En polymerisationsreaktion i en tankreaktor kom att skena efter ett strömförsörjningsfel på en platsfabrik. Då reservströmmen skulle slås på blev strömförsörjningen överlastad till följd av ett operatörsmisslag och reaktionen skenade. Detta ledde till temperatur och tryckstegring som åtgärdades genom en manuellt genomförd tryckminskning. Ett utsläpp av vinylklorid kunde därigenom undvikas. Larmet gick omedelbart och allmänheten varnades.

Inblandade ämnen och mängder

	CAS Nr.	Mängd
vinylklorid		

Skador:

Människor: Inga.
Materiella: Inga.
Miljö/ekologi: Inga effekter rapporterade.
Infrastruktur: Allmänheten varnades.

Erfarenheter redovisade (Ja/Nej): Ja

Mycket kort att mer träning av de anställda var nödvändig

Report Profile

Identification of Report:

country: FA ident key: 1800_042_01

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

Date of Major Occurrence: Time of Major Occurrence

start: 1981-05-30 start:

finish: finish:

Establishment:

name:

address:

industry: 2001 general chemicals manufacture

Organic Chemical (Plastic Materials and Chemical Fibres Production)

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_042_01

Accident Types:

release: No explosion: No

water contamination: No other: Yes

fire: No

description:

ACCIDENT CASE HISTORY DESCRIPTION:... see Appendix Short Report / description of accident types

Substance(s) Directly Involved:

toxic: Yes explosive: Yes

ecotoxic: No other: No

flammable: Yes

description:

- Vinylchloride (C.A.S. CODE: 75-01-4): amount involved = 1,700 Kg.

Immediate Sources of Accident:

storage: No transfer: No

process: Yes other: No

description:

The accident occurred during normal operation of a polymerization autoclave in an organic chemical industry for the production of plastic materials and chemical fibres.

Suspected Causes:

plant or equipment: No environmental: Yes

human: Yes other: No

description:

CAUSES:... see Appendix Short Report / description of suspected causes

Immediate Effects:

material loss: No

human deaths: No

human injuries: No community disruption: No

other: Yes

ecological harm: No

national heritage loss: No

description:

In the Original Report there is no evidence of significant effects caused by the accident because a vinylchloride release into the environment did not occur.

Emergency Measures taken:

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

external services: No **restoration:** No

sheltering: Yes **other:** No

evacuation: No

description:

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

Immediate Lessons Learned:

prevention: Yes **other:** No

mitigation: No

description:

INTERNAL TO THE ESTABLISHMENT:

After the accident, it was established to carry out more intensive training under abnormal conditions for the personnel.

A Occurrence Full Report

country: FA **ident key:** 1800_042_01

1 Type of Accident

remarks: The mixer of the polymerization reactor stopped because of the public power supply failure. It resulted in temperature and pressure increase in the polymerization reactor. The emergency depressurization of the polymerization reactor was per... see Appendix Full Report A / type of accident

2 Dangerous Substances

remarks: The total establishment and the potential directly involved inventories of vinylchloride refer to the amount involved in the accident.

3 Source of Accident

illustration: - not applicable -

remarks: The accident occurred during normal operation of a polymerization autoclave (codes 3101 and 4002) in an organic chemical industry for the production of plastic materials and chemical fibres (code 2001). From the Original Report it is not fu... 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: - not applicable -

5 Causes of Major Occurrence

main causes

technical / physical 5205 environment: utilities failure (electricity, gas, water, steam air, etc.)

- not applicable -

- not applicable -

- not applicable -

- not applicable -

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

5304 organization: training/instruction (none, inadequate, inappropriate)

5307 organization: process analysis (inadequate, incorrect)

5401 person: operator error

- not applicable -

remarks: The mixer of the polymerization reactor stopped because of the public power supply failure

(code 5205). Due to erroneous operation (codes 5303, 5304, 5307 and 5401), the emergency

power supply was overloaded and the connection to the PVC pl... see Appendix Full Report A

/ causes of major occurrence

6 Discussion about the Occurrence

- not applicable -

Type of Accident country: FA ident key: 1800_042_01

event:

major occurrence 1999 other: other

initiating event 1999 other: other

associated event - not applicable -

Dangerous substances

country: FA ident key: 1800_042_01

a) total establishment inventory

CAS number: 75-01-4 **identity:** Vinylchloride

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): 1,7

use of substance as: STARTING MATERIAL

b) substance belongs to relevant inventory directly involved: Yes

actual quantity: 1,7 potential quantity: 1,7

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_042_01

situation

industry

initiating event 2001 general chemicals manufacture

associated event - not applicable -

activity/unit

major occurrence 3101 process: chemical batch reaction

initiating event 3101 process: chemical batch reaction

associated event - not applicable -

component

major occurrence 4002 reaction vessel; pressurised

initiating event 4002 reaction vessel; pressurised

associated event - not applicable -

B Consequences Full Report

country: FA ident key: 1800_042_01

1 Area concerned

affected

extent of effects installation: No

establishment: No

off-site; local: No

off-site; regional: No

off-site; transboundary: No

illustration of effects - not applicable -

remarks In the Original Report there is no evidence of significant effects caused by the... see Appendix

Full Report B / area concerned - remarks

2 People

establishment popul. emergency personnel off-site population

total at risk

immediate fatalities

subsequent fatalities

hospitalizing injuries

other serious injuries

health monitoring

remarks As no vinylchloride release into the environment occurred, no people were injure... 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 ECU

material losses

response, clean up, restoration

remarks No material losses occurred.

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 population in the surrounding area was alerted.... see Appendix Full Report B / disruption of

7 Discussion of Consequences

C Response Full Report

country: FA ident key: 1800_042_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

After the accident, it was est... see Appendix Full Report C / lesson learned - prevent

measures to mitigate consequences:

- not applicable -

useful references:

- not applicable -

5 Discussion about Response

- not applicable -

Appendices for the FA / 1800_042_01 report

Appendix Short Report / description of accident types:

ACCIDENT CASE HISTORY DESCRIPTION:

The mixer of the polymerization reactor stopped because of the public power supply failure. Due to erroneous operation, the emergency power supply was overloaded and the connection to the PVC plant was succeeded but delayed. It resulted in temperature and pressure increase in the polymerization reactor. The emergency depressurization of the polymerization reactor was performed manually (in different steps and in small quantities) through the by-pass of the rupture disk. A vinylchloride release into the environment did not occur.

Appendix Short Report / description of suspected causes:

CAUSES:

The mixer of the polymerization reactor stopped because of the public power supply failure. Due to erroneous operation, the emergency power supply was overloaded and the connection to the PVC plant was succeeded but delayed. It resulted in temperature and pressure increase in the polymerization reactor.

Appendix Short Report / description of emergency measures taken:

INTERNAL TO THE ESTABLISHMENT:

The alarm was sounded. The emergency depressurization of the polymerization reactor was performed manually (in different steps and in small quantities) through the by-pass of the rupture disk. Shut-down of PVC plant succeeded but was delayed.

EXTERNAL TO THE ESTABLISHMENT:

The population in the surrounding area was alerted.

Appendix Full Report A / type of accident:

The mixer of the polymerization reactor stopped because of the public power supply failure. It resulted in temperature and pressure increase in the polymerization reactor. The emergency depressurization of the polymerization reactor was performed manually (in different steps and in small quantities) through the by-pass of the rupture disk (code 1999). No vinylchloride release into the environment occurred.

Appendix Full Report A / source of accident - remarks:

The accident occurred during normal operation of a polymerization autoclave (codes 3101 and 4002) in an organic chemical industry for the production of plastic materials and chemical fibres (code 2001). From the Original Report it is not fully clear if was a pressurized autoclave or not.

Appendix Full Report A / causes of major occurrence:

The mixer of the polymerization reactor stopped because of the public power supply failure (code 5205). Due to erroneous operation (codes 5303, 5304, 5307 and 5401), the emergency power supply was overloaded and the connection to the PVC plant was succeeded but delayed. It resulted in temperature and pressure increase in the polymerization reactor.

Appendix Full Report B / area concerned - remarks:

In the Original Report there is no evidence of significant effects caused by the accident because a vinylchloride release into the environment did not occur.

Appendix Full Report B / people:

As no vinylchloride release into the environment occurred, no people were injured during the accident.

Appendix Full Report B / ecological harm:

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

Appendix Full Report B / disruption of community life:

The population in the surrounding area was alerted.

Appendix Full Report C / lesson learned - prevent:

After the accident, it was established to carry out more intensive training under abnormal conditions for the personnel.