

Rubrik

860626 MARS 1986_03

Olyckan inträffade i samband med lastning av ett fartyg med bensen. Innan lastningsproceduren var helt avslutad inträffade en explosion ombord på fartyget. Ingen orsak anges. Explosionen deformerade tanken. Den person som ansvarade för lastningen skadades. Kort därefter exploderade även en tank på land. Ungefär 80 ton brinnande bensen försvann i floden Rhen.

Inblandade ämnen och mängder

	CAS Nr.	Mängd
Bensen	71-43-2	80 ton
förbränningsprodukter		okänt

Skador:

Människor:	En person skadades vid explosionen.
Materiella:	En tank ombord på fartyget och en på land skadades.
Miljö/ekologi:	Ungefär 80 ton brinnande bensen försvann i floden Rhen. Inga effekter rapporterade.
Infrastruktur:	Inga

Erfarenheter redovisade (Ja/Nej): Nej

Report Profile

Identification of Report:

country: FA ident key: 1986_003_01

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

Date of Major Occurrence: Time of Major Occurrence

start: 1986-06-26 start:

finish: finish:

Establishment:

name:

address:

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

Storage Installation (Benzene Loading/Unloading Station with Shuttle Return Transport)

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:** 1986_003_01**Accident Types:****release:** No **explosion:** Yes**water contamination:** No **other:** No**fire:** Yes**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:**

- Benzene (C.A.S. CODE: 71-43-2): amount involved = 80,000 kg.... see Appendix Short Report / description of substances involved

Immediate Sources of Accident:**storage:** No **transfer:** Yes**process:** No **other:** No**description:**

The accident occurred after the ship's tank loading with benzene in a loading/unloading station with shuttle return transport of a storage installation.

Suspected Causes:**plant or equipment:** No **environmental:** No**human:** No **other:** Yes**description:**

CAUSES:

When the Original Report was prepared the causes of the accident were still under investigation.

Immediate Effects:

material loss: Yes

human deaths: No

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

other: No

ecological harm: Yes

national heritage loss: No

description:

EFFECTS ON PEOPLE... see Appendix Short Report / description of immediate effects

Emergency Measures taken:

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

external services: No **restoration:** No

sheltering: No **other:** No

evacuation: No

description:

Immediate Lessons Learned:

prevention: No **other:** No

mitigation: No

description:

- not applicable -

A Occurrence Full Report

country: FA **ident key:** 1986_003_01

1 Type of Accident

remarks: The accident occurred after the loading of a ship's tank with benzene.

During the let-down of the sampling equipment, an explosion (code 1307)

occurred in the last filled chamber of the ship's tank. The walls of the

tank were deformed. Shor... see Appendix Full Report A / type of accident

2 Dangerous Substances

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

benzene refer to the amount burned (and ended up in the Rhine river) during

the accident. No data are available about the amount and the type of

pollution caused by ... see Appendix Full Report A / dangerous substances

3 Source of Accident

illustration: - not applicable -

remarks: The accident occurred after the ship's tank loading with benzene in a

loading/unloading station (code 3304) with shuttle return transport of a

storage installation. The component involved in the first explosion was one

of the chamber of the... 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 5501 other: not identified

- not applicable -

- not applicable -

- not applicable -

- not applicable -

human / organizational - not applicable -

- not applicable -

- not applicable -

- not applicable -

- not applicable -

remarks: When the Original Report was prepared the causes of the accident were still under investigation (code 5501).

6 Discussion about the Occurrence

- not applicable -

Type of Accident country: FA ident key: 1986_003_01

event:

major occurrence - not applicable -

initiating event - not applicable -

associated event - not applicable -

event:

major occurrence 1103 release: fluid release to water

initiating event 1307 explosion: VCE (vapour cloud explosion; supersonic wave front)

associated event - not applicable -

Dangerous substances

country: FA ident key: 1986_003_01

a) total establishment inventory

CAS number: identity: Incomplete Combustion Products

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: 71-43-2 identity: Benzene

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): 80

use of substance as: NORMAL FINISHED PRODUCT

b) substance belongs to relevant inventory directly involved: Yes

actual quantity: 80 potential quantity: 80

c) substance belongs to relevant inventory indirectly involved: No

actual quantity: -1 indir_pot_quant: -1

Source of Accident - Situation country: FA ident key: 1986_003_01

situation

industry

initiating event - not applicable -

associated event - not applicable -

activity/unit

major occurrence 3304 transfer: loading/unloading activities (transfer interfaces)

initiating event 3304 transfer: loading/unloading activities (transfer interfaces)

associated event - not applicable -

component

major occurrence - not applicable -

initiating event - not applicable -

associated event - not applicable -

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 -

B Consequences Full Report

country: FA ident key: 1986_003_01

1 Area concerned

affected

extent of effects installation: Yes

establishment: Yes

off-site; local: not applicable

off-site; regional: not applicable

off-site; transboundary: not applicable

illustration of effects - not applicable -

remarks No data are available about the possible effects outside the establishment.... 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 1

other serious injuries

health monitoring

remarks The person in charge of the sampling was injured by the explosion.... see Appendix Full Report B

/ people

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 not applicable**

preventing human access or activities)

- **marine or fresh water habitat** not applicable

- **areas of high conservation value or given special protection** not applicable

remarks No data are available in the Original Report about the possible 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 One chamber of the benzene tank on the ship and a benzene tank of the storage pl... 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 No No

- **media interest** No No No

- **political interest** No No No

remarks No data are available about the possible effects outside the establishment.... see Appendix Full

7 Discussion of Consequences

C Response Full Report

country: FA **ident key:** 1986_003_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

- not applicable -

measures to mitigate consequences:

- not applicable -

useful references:

- not applicable -

5 Discussion about Response

- not applicable -

Appendices for the FA / 1986_003_01 report

Appendix Short Report / description of accident types:

ACCIDENT CASE HISTORY DESCRIPTION:

The accident occurred after the loading of a ship's tank with benzene. During the let-down of the sampling equipment in the tank, as the loading operation was not completed and the return pipeline was not disconnected, an explosion occurred in the last filled chamber of the ship's tank. The walls of the tank were deformed. The person in charge of the sampling was injured. Shortly afterwards there was the explosion of an empty benzene tank on land (the causes of the explosion were not identified). About 80 tonnes of burning benzene ended up in the Rhine river.

Appendix Short Report / description of substances involved:

- Benzene (C.A.S. CODE: 71-43-2): amount involved = 80,000 kg.

- (Incomplete) Combustion Products: amount involved = not known.

Appendix Short Report / description of immediate effects:

EFFECTS ON PEOPLE:

The person in charge of the sampling was injured by the explosion.

MATERIAL LOSS:

One chamber of the benzene tank on the ship and a benzene tank of the storage plant on land were damaged by the explosions. No data are available about the cost of the material losses.

ECOLOGICAL HARM:

About 80 tonnes of burning benzene ended up in the Rhine river.

Appendix Full Report A / type of accident:

The accident occurred after the loading of a ship's tank with benzene. During the let-down of the sampling equipment, an explosion (code 1307) occurred in the last filled chamber of the ship's tank. The walls of the tank were deformed. Shortly afterwards there was the explosion of an empty benzene tank on land (code 1307). About 80 tonnes of burning benzene (code 1202) ended up in the Rhine river (code 1103).

Appendix Full Report A / dangerous substances:

The total establishment and the potential directly involved inventories of benzene refer to the amount burned (and ended up in the Rhine river) during the accident. No data are available about the amount and the type of pollution caused by the (incomplete) combustion products produced during the burning of benzene.

Appendix Full Report A / source of accident - remarks:

The accident occurred after the ship's tank loading with benzene in a loading/unloading station (code 3304) with shuttle return transport of a storage installation. The component involved in the first explosion was one of the chamber of the ship's tank (code 4003). A second explosion occurred in an empty benzene storage tank on land (code 4003). From the Original Report is not fully clear what type industry was involved.

Appendix Full Report B / area concerned - remarks:

No data are available about the possible effects outside the establishment.

Appendix Full Report B / people:

The person in charge of the sampling was injured by the explosion.

Appendix Full Report B / ecological harm:

No data are available in the Original Report about the possible ecological harms caused by the accident.

Appendix Full Report B / material loss:

One chamber of the benzene tank on the ship and a benzene tank of the storage plant on land were damaged by the explosions. No data are available about the cost of the material losses.

Appendix Full Report B / disruption of community life:

No data are available about the possible effects outside the establishment.