

Kemikalieutsläpp vid lossning på en kemikaliefabrik.

881007 MARS 1988_03

Vid en paus i lossningen från en järnvägstankvagn kolliderade en andra vagn med tankvagnen. Detta inträffade trots att signalerna var tydligt röda och spåret avstängt. Koldisulfid rann ut då slangförbindelsen bröts. Tankvagnens ventil stängdes och man sprutade skum på den utspillda koldisulfiden. Skummet såväl som det kontaminerade jordlagret avlägsnades och togs om hand.

Inblandade ämnen och mängder

	CAS Nr.	Mängd
koldisulfid	75-15-0	2500 kg

Skador:

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

Erfarenheter redovisade (Ja/Nej): Ja

Mycket kortfattat anges förebyggande åtgärder.

Report Profile

Identification of Report:

country: FA ident key: 1988_003_01

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

Date of Major Occurrence: Time of Major Occurrence

start: 1988-10-07 start:

finish: finish:

Establishment:

name:

address:

industry: 2004 pesticides, pharmaceuticals, other fine chemicals

Pesticide (Thiram [Thiocarbamyl] Production and Storage)

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: 1988_003_01

Accident Types:

release: Yes explosion: No

water contamination: No other: No

fire: No

description:

SYSTEM ORIGINATING AND OPERATING CONDITIONS:... see Appendix Short Report / description of accident types

Substance(s) Directly Involved:

toxic: Yes explosive: Yes

ecotoxic: No other: No

flammable: Yes

description:

- Carbon Disulphide (C.A.S. CODE: 75-15-0, E.E.C. CODE: 006-003-00-3); amount involved = 2,500 Kg.

Immediate Sources of Accident:

storage: No transfer: Yes

process: Yes other: No

description:

The accident occurred in a storage area of a pesticide industry for the production of thiram (thiocarbamyl).

The component involved was a carbon disulphide rail-tank (40 m3 capacity) during unloading operation.

Suspected Causes:

plant or equipment: No environmental: No

human: Yes other: No

description:

INITIATING EVENT AND CONSEQUENCES:... 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:

OTHER:... see Appendix Short Report / description of immediate effects

Emergency Measures taken:

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

external services: No **restoration:** Yes

sheltering: No **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:

MEASURES TO PREVENT ANY RECURRENCE OF SIMILAR ACCIDENTS:... see Appendix Short Report / description of

immediate lessons learned

A Occurrence Full Report

country: FA **ident key:** 1988_003_01

1 Type of Accident

remarks: A rail-tank containing carbon disulphide was connected to the storage

facilities and to the nitrogen network for unloading operation. During an

interruption to the unloading, when both lines were isolated from

installation side only, owing ... see Appendix Full Report A / type of

accident

2 Dangerous Substances

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

carbon disulphide refer to the volumetric capacity (40 m³) of the rail-tank

involved in the accident.

3 Source of Accident

illustration: - not applicable -

remarks: The accident occurred in a storage area of a pesticide industry (code 2004)

for the production of thiram (thiocarbamyl). The component involved was a

carbon disulphide rail-tank (40 m³ capacity) [code 4012] during unloading

operation (code ... 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 - not applicable -

- not applicable -

- not applicable -

- not applicable -

- not applicable -

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

5306 organization: staffing (inadequate, inappropriate)

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

5401 person: operator error

- not applicable -

remarks: Owing to erroneous manoeuvring (code 5401), a rail-tank containing carbon disulphide was hit in spite of the fact that the rail was closed and a red light was on to indicate this.

It happened because of insufficient operational procedures (... see Appendix Full Report

A / causes of major occurrence

6 Discussion about the Occurrence

- not applicable -

Type of Accident country: FA ident key: 1988_003_01

event:

major occurrence 1102 release: fluid release to ground

initiating event 1102 release: fluid release to ground

associated event - not applicable -

Dangerous substances

country: FA ident key: 1988_003_01

a) total establishment inventory

CAS number: 75-15-0 **identity:** Carbon Disulphide

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): 50,4

use of substance as: STARTING MATERIAL

b) substance belongs to relevant inventory directly involved: Yes

actual quantity: 2,5 potential quantity: 50,4

c) substance belongs to relevant inventory indirectly involved: No

actual quantity: -1 indir_pot_quant: -1

Source of Accident - Situation country: FA ident key: 1988_003_01

situation

industry

initiating event 2004 pesticides, pharmaceuticals, other fine chemicals

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 4012 other transfer equipment/apparatus/vehicle

initiating event 4012 other transfer equipment/apparatus/vehicle

associated event - not applicable -

B Consequences Full Report

country: FA ident key: 1988_003_01

1 Area concerned

affected

extent of effects installation: Yes

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 outside the i... 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 No people were injured during the accident.

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 preventing human access or activities) Suspected

- 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 except the spilled carbon disulphide. No data are av... 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** Yes No No

- **media interest** No No No

- **political interest** No No No

remarks In the Original Report there is no evidence of significant effects outside the i... see Appendix

7 Discussion of Consequences

C Response Full Report

country: FA **ident key:** 1988_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

After the accident, the follow... 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 / 1988_003_01 report

Appendix Short Report / description of accident types:

SYSTEM ORIGINATING AND OPERATING CONDITIONS:

A rail-tank (40 m³ capacity) containing carbon disulphide connected with the nitrogen network (operating at about 1.5 bar) for unloading operation.

SAFETY SYSTEMS OR OPERATORS INTERVENTION:

Both nitrogen and product lines were isolated from the installation site. The rail was closed and a red light was on (indicating that unloading operation was in progress).

ACCIDENT CASE HISTORY DESCRIPTION:

A rail-tank containing carbon disulphide was connected to the storage facilities and to the nitrogen network for unloading operation. During an interruption to the unloading, when both lines were isolated from installation side only, owing to erroneous manoeuvring of another rail-tank, the rail-tank containing carbon disulphide was hit. This happened in spite of the fact that the rail was closed and a red light was on to indicate this. The product line ruptured and about a few tonnes of carbon bisulphide were released. The release stopped when the valve on the rail-tank was closed. The spilled carbon disulphide was covered by foam and this was then collected. The contaminated soil was also removed.

Appendix Short Report / description of suspected causes:

INITIATING EVENT AND CONSEQUENCES:

A rail-tank containing carbon disulphide was connected to the storage facilities and to the nitrogen network for unloading operation. During an interruption to the unloading, owing to erroneous manoeuvring of another rail-tank, the rail-tank containing carbon disulphide was hit. The product line ruptured and about a few tonnes of carbon bisulphide were released.

CAUSES:

Owing to erroneous manoeuvring, a rail-tank containing carbon disulphide was hit in spite of the fact that the rail was closed and a red light was on to indicate this. It happened because of insufficient operational procedures, staffing (the carbon disulphide rail-tank was unattended during the unloading interruption) and system design.

Appendix Short Report / description of immediate effects:

OTHER:

No material losses occurred except the spilled carbon disulphide. No data are available about the cost of the decontamination of the soil covered by the carbon disulphide.

Appendix Short Report / description of emergency measures taken:

INTERNAL TO THE ESTABLISHMENT:

The release of carbon disulphide stopped when the valve on the rail-tank was closed. The spilled carbon disulphide was covered by foam and this was then collected. The contaminated soil was also removed.

Appendix Short Report / description of immediate lessons learned:

MEASURES TO PREVENT ANY RECURRENCE OF SIMILAR ACCIDENTS:

After the accident, the following measures were established:

- 1- installation of isolation keys on the rails;
- 2- operating procedures to be modified so that a permanent attendance at unloading is mandatory;
- 3- additional safety features to be evaluated.

Appendix Full Report A / type of accident:

A rail-tank containing carbon disulphide was connected to the storage facilities and to the nitrogen network for unloading operation. During an interruption to the unloading, when both lines were isolated from installation side only, owing to erroneous manoeuvring of another rail-tank, the rail-tank containing carbon disulphide was hit. The product line ruptured and about a few tonnes of carbon disulphide were released (code 1102).

Appendix Full Report A / source of accident - remarks:

The accident occurred in a storage area of a pesticide industry (code 2004) for the production of thiram (thiocarbamyl). The component involved was a carbon disulphide rail-tank (40 m³ capacity) [code 4012] during unloading operation (code 3304).

Appendix Full Report A / causes of major occurrence:

Owing to erroneous manoeuvring (code 5401), a rail-tank containing carbon disulphide was hit in spite of the fact that the rail was closed and a red light was on to indicate this. It happened because of insufficient operational procedures (code 5303), staffing [code 5306] (the carbon disulphide rail-tank was unattended during the unloading interruption) and system design (code 5308).

Appendix Full Report B / area concerned - remarks:

In the Original Report there is no evidence of significant effects outside the installation.

Appendix Full Report B / ecological harm:

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

Appendix Full Report B / material loss:

No material losses occurred except the spilled carbon disulphide. No data are available about the cost of the decontamination of the soil covered by the carbon disulphide.

Appendix Full Report B / disruption of community life:

In the Original Report there is no evidence of significant effects outside the installation.

Appendix Full Report C / lesson learned - prevent:

After the accident, the following measures were established:

- 1- installation of isolation keys on the rails;
- 2- operating procedures to be modified so that a permanent attendance at unloading is mandatory;
- 3- additional safety features to be evaluated.